THE BIRDS OF THE BELGIAN CONGO, PART 3

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PART 3

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EDITOR'S NOTE

The whole work entitled "The birds of the Belgian Congo," of which this is Part 3, will be completed in four parts.

In the long interval between the publication of Part 2 (1939, Bulletin of the American Museum of Natural History, volume 75) and the submission of Part 3 for printing, a larger size and a different format and style were adopted for the series, the Bulletin of the American Museum of Natural History.

Because Parts 1 to 4 of "The birds of the Belgian Congo" constitute a very close and unified whole, each Part depending upon the others, it has been agreed that they should all be of the same size, to form one unit.

To avoid, however, inserting two small-sized volumes in the current large format of the Bulletin series, Part 3 of "The birds of the Belgian Congo" (this present volume) becomes volume 75A in the serial numbering of the Bulletin of the American Museum of Natural History, and Part 4 will become volume 75B.

The date of issue of Part 3 of "The birds of the Belgian Congo" (volume 75A of the Bulletin) is

May 20, 1953

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INTRODUCTION

This third volume of the avifauna of the Belgian Congo includes the families Eurylaimidae to Hirundinidae, and the remaining passeriform families are to be covered in a fourth and final volume.

Work on the present volume was begun in 1938, when aided by a grant from the Belgian American Educational Foundation I spent the whole summer studying the collections in the Musée du Congo Belge at Tervueren, Belgium. I wish to express my gratitude to the Foundation and its President, Dr. Perrin C. Galpin.

Many friends in various countries have continued to assist me with advice and the loan of specimens when needed. In particular I wish to express my appreciation to Dr. David A. Bannerman, Captain C. W. Benson, Prof. J. Berlioz, Captain J. Delacour, Captain C. H. B. Grant, Dr. R. Malbrant, Mr. R. E. Moreau, Captain C. R. S. Pitman, Dr. H. Schouteden, Dr. V. G. L. van Someren, Prof. E. Stresemann, Mr. W. E. Clyde Todd, Dr. R. Verheyen, Dr. M. Sassi, and Mr. C. M. N. White. Two others among my generous advisers, Mr. James L. Peters and Mr. Hermann Grote, have died only recently. To Dr. Robert Cushman Murphy, Chairman of the Department of Birds of the American Museum, and to Dr. John T. Zimmer and Dr. Ernst Mayr I am likewise greatly indebted. For secretarial assistance I thank Mrs. Muriel Bitensky and Miss Susan Irving. Most of the drawings for the text figures have been prepared by Mr. Alexander Seidel with his usual skill and accuracy.

Even during the Second World War considerable bird collecting was carried on in the Congo by the friends of the Musée du Congo Belge and of the Royal Natural History Museum in Brussels. Publication continued, and in Belgium reports on birds appeared by Dr. H. Schouteden and by Dr. R. Verheyen. In England, despite bombings which brought the scars of war to the British Museum and death to my dear friend William Lutley Sclater, the study of African birds and publication of its results were carried on with bravery and persistence.

I have tried here to include all records that appeared before the end of 1946, but only a few could be added for 1947. References to Congo birds are so numerous that in future it will scarcely be feasible to list them all.

A majority of the species included in the present volume are members of the great thrush-flycatcher group. If I use the names Timaliidae, Sylviidae, and Turdidae as family headings, that does not mean that I consider them to be clearly separated. On the contrary, it is often difficult to know whether a given genus should be referred to one or the other group; the dividing lines are largely a matter of convenience. Yet the number of forms is so large that we are virtually obliged to think of them as babblers, warblers, thrushes, or flycatchers. Any key for the identification of genera that combined them all in a single family would be too complicated for practical purposes. Thus, in a general way, I follow the classification of Sclater's "Systema," rather than expanding the family Muscicapidae to include them all.

In my lists of references the abbreviations follow the current editorial rules for the Bulletin of the American Museum of Natural History; they should be readily understood.

SECTION B (*continued*). SYSTEMATIC LIST OF SPECIES AND RACES, WITH NOTES ON DISTRIBUTION, HABITS, AND FOOD

Names of forms known to occur within the Belgian Congo or Mandated Territory are printed in heavy type. Those enclosed in brackets have been reported from adjacent areas, so that a number of them may be expected to reach our territory.

ORDER PASSERIFORMES

SUBORDER EURYLAIMI

FAMILY **EURYLAIMIDAE.** BROADBILLS

KEY TO THE GENERA OF AFRICAN BROADBILLS

Plumage largely bright green; bill flat like that of a flycatcher, but rictal bristles not conspicuous, the longest reaching only 5 mm. . . . . *Pseudocalyptomena* (p. 21)

Plumage without any bright green, a faint olivaceous tinge, at most, to the brownish upperparts; breast more or less streaked with blackish; bill broader, rictal bristles larger, the longest at least 8 mm., usually longer. . . . . *Smithornis* (p. 11)

KEY TO THE SPECIES OF *Smithornis*

1. Wing 75 mm. or longer; under wing-coverts always cinnamon rufous; crown in both sexes gray . . . . . *S. sharpei*
   Wing seldom exceeding 76 mm.; under wing-coverts whitish mixed with black, and washed at most with buff; crown of adult males always black 2
2. Smaller, wing usually 60–65 mm.; a light rufous patch at each side of chest in both sexes . . . . . *S. rufolateralis*
   Larger, wing usually 67–76 mm.; never more than a reddish brown wash on sides of chest, which are streaked with black . . . . . *S. capensis*

Smithornis capensis albigularis Hartert

Smithornis capensis albigularis HARTERT, 1904, Bull. Brit. Ornith. Club, vol. 14, p. 73 (type locality: Canhoca, northern Angola).

Smithornis capensis NEAVE, 1910, Ibis, p. 129 (Dikulwe R.; Bunkeya R.). BATES, 1914, Ibis, p. 496. WHITE, 1946, Ibis, p. 75 (Luakera R.).

Smithornis capensis capensis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 305 (in part. Katanga). GRANT AND M.-PRAED, 1939, Bull. Brit. Ornith. Club, vol. 59, p. 114 (in part. Angola; southeastern Belgian Congo). A. W. VINCENT, 1946, Ibis, p. 462 (near Elisabethville).

Smithornis SCHOUTEDEN, 1932, Bull. Cercle Zool. Congolais, vol. 9, p. 14 (Kando; Dilolo).

DISTRIBUTION OF THE SPECIES: Natal to Mt. Kenya, country west of Lake Albert, northern Angola, Cameroon, the Gold Coast, and Liberia.

In Natal at least, *S. c. capensis* (Smith) is rather deeply colored above and heavily striped on the breast. In Southern Rhodesia and Portuguese East Africa the streaking of the breast may be narrower, but this race is usually regarded as extending north to the Zambesi and the highlands near Lake Nyasa.

Smithornis capensis albigularis of northern Angola, the Kasai, Katanga, and probably the Loangwa Valley, is light colored with narrowly streaked breast. Similar birds, often still paler in color, are found in northern Mozambique, and should perhaps be included here.

Smithornis capensis medianus Hartert and Van Someren is deeper in color, but still rather narrowly streaked below, and occupies the highlands of eastern Africa from Usambara to Mt. Kenya, east of the Great Rift Valley.

West of the Rift Valley, in the Kavirondo District, lives *S. c. meinertzhageni*. It is darker above, with heavier breast stripes and shorter wings than *medianus*. To *meinertzhageni* I refer also the birds living in highland forests along the Albertine Rift in western Uganda and the eastern Congo, while admitting that they show a slight approach toward *S. c. camarunensis* of forested southern Cameroon. But no race of *capensis* has thus far been found in the lowland equatorial forest of the Belgian Congo.

Smithornis capensis camarunensis is distinguished by its warm reddish brown coloration on the upperparts, broad black striping of underparts, and heavy wash of brownish buff on the chest. *S. c. delacouri* Bannerman of the Ivory Coast and Gold Coast is somewhat similar, but with grayish hind neck.

Though seldom collected, *Smithornis capensis albigularis* appears to extend across the southern Congo from Moba on the southwest shore of Lake Tanganyika to the Kasai District. One male example in the American Museum from Luluabourg, nearly ruined by wetting in shipment, shows the narrow chest streaks of this race. Its wing measures 70 mm., while 12 Angola specimens of both sexes have wings 67–72.5 mm. Three males from the Upper Katanga examined in Belgium have wings 74–76.5 mm., but agree in coloration with *albigularis*.

Grant and Mackworth-Praed (1939) would reunite *albigularis*

with typical *capensis*, but our specimens of the latter from Natal are plainly different. Thirteen light-colored examples of both sexes from North Mozambique have wings 68–71 mm. and are probably best referred for the present to *albigularis*. *S. c. suahelicus* Grote was separated as being a little more olive brown above and a little more heavily streaked on the breast than *albigularis*. Comparison of the type, from the Rufu River in northeastern Tanganyika Territory, is said to have proved that it is not separable from *medianus* of the Usambara Mountains. I have examined two males from the Uluguru Mountains which also look like *medianus* but have wings only 68.5 and 69 mm., whereas the wings of *medianus* from the region between Kilimanjaro and Mt. Kenya measure 73–76 mm.

In the Upper Katanga, according to Neave (1910), this brown broadbill is not rare and frequents very dense bush on the banks of streams. The harsh sounds produced by the allied race in southern Africa have often been described. They are heard as the bird makes a short circular flight from a perch and back to the same spot, and have been likened to the word "kroo!" with the *r* strongly rolled, or even to the noise of a klaxon horn. Opinions differ as to whether they are made with the wings or not, and more than one observer has reported the female of this species as making the same loud sound as the male. According to Benson[1] the Cape Broadbill gives also a plaintive "twee-uu" which no doubt is vocal. This he heard in Nyasaland usually before sunrise or after sunset.

The nest of the South African race is placed within 9 feet of the ground and is composed of a quantity of long, dried leaves, as of *Dracaena*, roughly folded over a thin branch so as to hang downward. The center is then matted together with spider silk, and padded with soft bark and dry plant stems. The eggs are two or three in number and glossy white, 21.5–23 mm. by 15–16 mm.

For many years previous to 1914 the genus *Smithornis* was considered as belonging in the family Muscicapidae. Externally it shows strong resemblances to some Neotropical tyrannids, and the first species to become known was described by Andrew Smith as *Platyrhynchus capensis*. Bonaparte, who proposed for it the

[1] 1942, Ibis, p. 302.

generic name *Smithornis*, at first regarded this bird as a muscicapid, but three years later[1] he considered the "Smithornithinae" as one of the three subfamilies of the Eurylaimidae. Subsequent writers ignored this wise conclusion, and it seems purely accidental that the South African representative came to be known as the Cape Broadbill.

In 1914, however, G. L. Bates[2] showed that in several anatomical features *Smithornis* exhibited close resemblance to the Eurylaimidae. The only difficulty about placing it in that family was the marked fork of the spina sterni. Ten years later, after dissecting specimens furnished by Bates, Percy R. Lowe[3] confirmed all these findings and proved that *Smithornis* is unquestionably a member of the Eurylaimidae, or broadbills, which had long been thought restricted to southern Asia, the Malay Archipelago, and the Philippines. At the same time Lowe suggested that *Pseudocalyptomena* might also be a true broadbill, and this fact he was able to prove seven years later.

Smithornis capensis meinertzhageni Van Someren

Smithornis capensis meinertzhageni VAN SOMEREN, 1919, Bull. Brit. Ornith. Club, vol. 40, p. 24 (type locality: Lerundo, Kavirondo District, Kenya Colony). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 86 (Kamatembe, 2100 m.).

Smithornis camerunensis O. GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 400 (Mpanga Forest, 5000 ft.). SCHOUTEDEN, 1914, Rev. Zool. Africaine, vol. 3, p. 266 (Kilo); 1918, idem, vol. 5, p. 258.

Smithornis capensis subsp. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 255 (northwest of L. Tanganyika, 2000 m.; east of Rutshuru Valley, 1600 m.).

Smithornis capensis medianus HARTERT AND VAN SOMEREN, 1916, Bull. Brit. Ornith. Club, vol. 36, p. 59 (in part. Forests west of L. Edward and northwest of L. Tanganyika). VAN SOMEREN, 1922, Novitates Zool., vol. 29, pp. 99, 100. BANNERMAN, 1923, Ibis, p. 719.

Smithornis capensis camerunensis SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 78. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 770 (Kibirau in Toro). GRANT AND M.-PRAED, 1939, Bull. Brit. Ornith. Club, vol. 59, p. 114. VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 68 (Bilati and Kalehe near Lutunguru).

DISTRIBUTION: Forests from central Kavirondo to the base of

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[1] 1854, Conspectus Volucrum Anisodactylorum, Ateneo Italiano, Paris, no. 11, p. 6.

[2] 1914, Ibis, pp. 495–502.

[3] 1924, Proc. Zool. Soc. London, pt. 1, pp. 279–291.

Mt. Elgon, not known from central Uganda, but reappearing in the Mpanga Forest and the Kigezi District; also in highlands along the eastern edge of the Congo forest, from the vicinity of Kilo south to the region northwest of Lake Tanganyika.

Nine specimens of both sexes from the Kavirondo District have wings only 67–69 mm., and two males from Toro 68 and 69. But the eight specimens I have examined from the highlands west of the Albertine Rift in Congo territory have somewhat longer wings, 71–76 mm. In coloration the birds of Toro, Kigezi, and the eastern Congo highlands show a slight approach to *camarunensis* in having a buffy wash at the sides of the chest, but they are not so reddish brown above, and the middle of the under side is less streaked. In nine skins of *camarunensis* from the River Ja I find the wings to measure 68–72 mm.

In the eastern Congo *S. c. meinertzhageni* seems to occur only in forests above 4500 feet. Rockefeller and Murphy collected three specimens near the upper Elila River, west of Uvira, but we have looked in vain for this species in the lower parts of the Ituri forest, the Uelle District, and at Lukolela on the middle Congo. In the southern Cameroon Bates found *camarunensis* to be a bird of bushes in the clearings, wanting in virgin forest, and so it would be surprising if it had been overlooked in the lowlands of the Congo.

Sterling Rockefeller noted that one of his birds was found in a small valley full of tree ferns, where it sat on a dead lower branch, and at intervals of 45 seconds it rose in an upward circle about 2 feet in diameter, returning to this same perch. While it was in the air a low guttural or rolling sound could be heard distinctly from 60 yards away, reminding him of a noise such as a squirrel might make.

Both Rockefeller and Woosnam shot birds after watching them give this performance and found them to be females. This is evidence that in *Smithornis capensis* both sexes may make the croaking flight, but of *S. rufolateralis* only the male seems ever to do so.

The nest of *meinertzhageni* is undoubtedly a rough pendulous structure like that of *camarunensis*, well described by Bates,[1] and hung rather close to the ground. The eggs of *camarunensis*

[1] 1907, Ibis, p. 451; 1909, idem, p. 31; 1911, idem, p. 526.

are glossy white, number two or three, and measure 22–24.5 mm. by 15.5–16 mm.

[*Smithornis capensis camarunensis* Sharpe]

Smithornis camarunensis SHARPE, 1905, Ibis, p. 469 (type locality: Ja R., Cameroon). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 7 (probably western Congo).

Apparently restricted to the area from the base of Mt. Cameroon east to the Ja River in Cameroon and south to Lastoursville in the Gaboon. If it extends farther east, it may perhaps be looked for near the lower Ubangi River.

Smithornis rufolateralis rufolateralis Gray

Smithornis rufolateralis G. R. GRAY, 1864, Proc. Zool. Soc. London, p. 143, pl. 16 (type locality: West Africa, i.e., Gold Coast). SCHOUTEDEN, 1925, Rev. Zool. Africaine, vol. 13, no. 1, p. 12 (Kunungu); 1940, Bull. Cercle Zool. Congolais, vol. 16, p. 72. CHAPIN, 1931, Nat. Hist., vol. 31, p. 601 (Lukolela).

Smithornis rufolateralis rufolateralis BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 8, pl. 2, fig. 2.

DISTRIBUTION OF THE SPECIES: Liberia east to Uganda, and south to the Loango coast and Kasai District. *S. r. rufolateralis*, with the brown of the crown in the female almost like that of the back, ranges from Upper Guinea to southern Cameroon and presumably to the middle Congo River. *S. r. budongoensis*, with crown of female more grayish, replaces it in the lowland forest of the Upper Congo and a few forested areas in Uganda. There seems to be no appreciable difference in color between males, and the wings of both races measure about 60–65 mm.

The rufous-sided broadbill has not yet been collected in the Mayombe Forest but may perhaps be expected there. L. Petit[1] reported that during his long stay on the Loango coast he heard only three of these birds and killed one near Mayumba. One female from Lukolela has the crown almost as brown as do the birds of the Cameroon, while a second from the same locality is more like females from the Ituri District. The Middle Congo seems to be the region where the two races merge.

The habits, voice, croaking flight, and nesting are discussed under the next subspecies.

[1] 1899, Mem. Soc. Zool. France, vol. 12, p. 82.

Smithornis rufolateralis budongoensis Van Someren

Smithornis rufolateralis budongoensis VAN SOMEREN, 1921, Bull. Brit. Ornith. Club, vol. 41, p. 103 (type locality: Budongo Forest, Uganda). BANNERMAN, 1923, Ibis, p. 720. GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 225 (Kartushi). SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 78. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 306. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 102 (Bondo Mabe; Nava R.). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 564 (Saidi in Ituri). LANGELIER, 1937, Nat. Canadien, vol. 64, p. 167. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 770.

Smithornis rufolateralis EMIN, 1864, Jour. Ornith., p. 170 (old Irumu). FLOWER, 1894, Proc. Zool. Soc. London, p. 604 (Ulike in Urumbi). REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 471; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 304 (northwest of Beni; Mawambi-Avakubi). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 402 (Mawambi). BATES, 1914, Ibis, pp. 496, 497. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 254 (Moera; Beni; Mawambi; Ukaika; Mawambi-Irumu). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 258 (Lesse).

SPECIMENS: Banalia, male, September 26. Babeyru, female, July 28. Panga, male, September 12. Avakubi, five males, February 23, July 18, August 28, October 12; female, October 2; two young males, September 20 and October 2. Penge, four males, April 20, 21, 23, 24.

ADULTS OF BOTH SEXES: Iris dark brown; maxilla black, a little blue-gray at sides of base, mandible dull whitish; feet dull light green, claws dark gray.

DISTRIBUTION: Budongo and Bugoma forests in Uganda, the Semliki and Ituri forests, westward presumably to the Middle Congo District. Thus far it has not been collected in the great central area between Coquilhatville and the lower Aruwimi River, but it must be expected there. On the north it reaches the Nava River north of Medje, and Bondo Mabe near Arebi. Southward it extends to Luluabourg in the Kasai, where Father Callewaert secured a female with grayish brown crown.

In the Ituri forest we found it rather common, along the Aruwimi River less so, though heard occasionally in forest traversed at portages along this river. In the Semliki Valley it seemed surprisingly scarce, and I have never even heard it call at elevations above 4000 feet.

Were it not for the loud toad-like noise it produces, the red-sided broadbill might be thought a great rarity, for it is accustomed to sit quietly on horizontal portions of small creepers, or

thin horizontal boughs, only in dense virgin forest at a height of 6 to 10 yards above the ground. Most of the time it would go unnoticed. What betrays the bird is a loud abrupt noise, something between a trill and a croak, lasting about one second and only repeated after a considerable pause.

When I first heard it I attributed the note to a toad or a tree frog, as Loveridge confesses he did too; but once seen in action, the bird will never be forgotten. It darts suddenly from its perch to describe a small circle in the air, a foot or a little more in diameter, ascending slightly and meanwhile making the loud "br-r-r-r-rt!" which I have tried to describe. Then it is back on its perch and the noise has ceased.

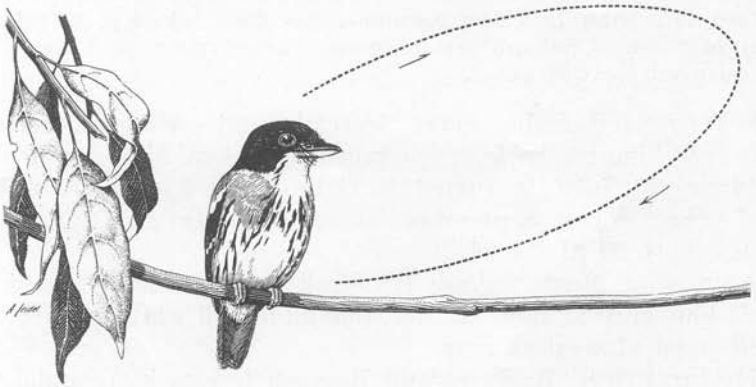

FIG. 1. *Smithornis rufolateralis*, male. The dotted line indicates the course of the croaking flight.

In the case of *Smithornis rufolateralis* I have never seen any but adult males make this croaking flight, and I am convinced that the noise comes from the wings. The shafts of the primaries are unusually stiff, and the plane of their webs is twisted slightly toward the distal half. Four or five of the outer primaries (but not the outermost) have unusually narrow webs toward the base, and it seems possible that air may pass between them during this special flight. Bates, to be sure, has suggested that the croaking is produced with the mouth, and that the thick tongue has something to do with it. But loud wing noises are produced by certain larks, flycatchers, and warblers in Africa, not to mention the extraordinary manakins of tropical America.

Moreover, *S. rufolateralis* has a weak vocal call which seems not yet to have been described. At Lukolela on the afternoon of January 1, 1931, my attention was drawn to some short whistled sounds, which I found were being made by two males of this broadbill, sitting a few yards apart in a forest tree. Near them was a single female, and they seemed highly excited, wagging their tails up and down, spreading the white patches on their backs, and whistling a rather high-pitched "whee, whee, whee. . . ." From time to time the males also made croaking flights, and between times they whistled repeatedly. Whether the display was then being directed toward the rival, or toward the female, would be hard to say, but on another occasion a single male was seen to spread his white dorsal patch in the presence of a female. The white back may also be exhibited by males in straightaway flight without loud wing beats.

This broadbill is known to the natives near Lukolela as "nsusu na djamba," or cock of the forest, because, as they say, it is one of the first birds to be heard at daybreak. It likewise croaks again frequently toward sunset and until dark and is heard far less often in the middle of the day.

It may produce its rattling croak throughout most of the year, but less often in the driest months, and the breeding season seemed to extend at least from April to October in the Ituri, and from August to January on the middle Congo River. A nest was found at Lukolela on September 6, suspended from a horizontal branch of a very small tree in virgin forest, only 6 feet from the ground. It was built of dead leaves and bits of dry wood, all held together by black fungus fibers (*Marasmius*). The fibers were draped over the supporting branch and a few strands hung far down below the nest, which resembled that of *Cyanomitra olivacea* save for its lacking a projecting "porch" above the entrance. In it were two nestlings about six days old, with feathers sprouting. The male bird came to the nest bearing a small green cicada, but only the female was actually seen to brood, and she was captured in the nest two nights later. A similar nest was found by Bates[1] in southern Cameroon, with two glossy white eggs, 23 by 15.5 mm. and 22 by 16 mm.

In examinations of 20 stomachs, half in the Ituri, half on the middle Congo River, I never failed to find remains of insects.

[1] 1911, Ibis, p. 529; 1914, idem, p. 497.

Most of these were small beetles, including an elater, while small green cicadas, an orthopter, an earwig, and about 17 small naked caterpillars (eaten by nine different birds) were likewise noted. Only one caterpillar was "sparsely haired." Other food was limited to a small spider and bits of a small round millipede.

Smithornis sharpei eurylaemus Neumann

Smithornis sharpei eurylaemus NEUMANN, 1923, Ornith. Monatsber., p. 76 (type locality: Moera, west of Semliki Valley). SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 78. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 306 (Semliki Forest and eastern Ituri forest). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 102 (Bondo Mabe).

Smithornis sharpei O. GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 402 (20 miles north of Beni). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 304. BATES, 1914, Ibis, p. 497. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 254 (Moera). BANNERMAN, 1923, Ibis, p. 721.

? *Smithornis sharpei* SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 258 (Kilo?).

Smithornis sharpei eurylaimus LANGELIER, 1937, Nat. Canadien, vol. 64, p. 168.

DISTRIBUTION OF THE SPECIES: Fernando Po, Cameroon forest, and northeastern margin of the Upper Congo forest. *S. s. sharpei* Alexander of Fernando Po has the underparts, especially the rufous of the chest, lighter than *S. s. zenkeri* Reichenow of the lowland Cameroon forest and Rio Benito. Both these races are large, with wings about 79–83 mm. *S. s. eurylaemus* is smaller, with wings 75–78 mm., and has a noticeably shorter bill. In coloration it is not unlike *zenkeri*, and the sides of the chest in females are olive brownish, almost without any rufous. It seems to be restricted to the edge of the Congo forest from the vicinity of Beni north to Bondo Mabe, near Arebi. The specimen collected by Thélie near Kilo can no longer be found in the Congo Museum.

In the main the gray-headed broadbill is a lowland bird and has not been found above 4500 feet in the eastern Congo. There seems to be little likelihood, however, of its existence anywhere in the central Congo forest or the Mayombe. It must be a rather solitary bird of the undergrowth in heavy forest, and makes a noisy circular flight like that of its congeners. On Fernando Po Boyd Alexander obtained most of his specimens of *sharpei* at an

altitude of about 4000 feet, yet the Cameroon race has been found at Efulen, no more than a few hundred feet above sea level.

Nests of *S. s. zenkeri* described by Bates[1] were hung from branches only a couple of yards above the ground, and built of moss, dead leaves, and stems bound together with black fungus fibers. Two eggs are the rule, 22–25 mm. by 16–17.5 mm.

Pseudocalyptomena graueri Rothschild

Pseudocalyptomena graueri ROTHSCHILD, 1909, Ibis, p. 690, pl. 10 (type locality: 50 miles west of Ruzizi R., northwest of L. Tanganyika). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 286. HARTERT, 1920, Novitates Zool., vol. 27, p. 496. LOWE, 1924, Proc. Zool. Soc. London, pt. 1, p. 290; 1931, idem., pt. 2, p. 445. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 307. ROCKEFELLER AND MURPHY, 1933, Auk, pp. 23–29, map (Luvumba on Lusigi R.). SCHOUTEDEN, 1933, Bull. Cercle Zool. Congolais, vol. 10, p. 32. ASPENLIND, 1935, Fauna och Flora, pp. 173, 177 (Luvumba). BANNERMAN, 1937, Discovery, London, vol. 18, no. 208, pp. 99, 100, fig. FRECHKOP, 1941, Animaux protégés au Congo Belge, p. 248, fig. 140.

DISTRIBUTION: Still known only from the mountains west of the Ruzizi River, which runs into Lake Tanganyika from the north, though it may be expected to range farther northward along the western slopes of that long mountain range. According to the label on Grauer's specimen, it was taken in bamboo forest around 2000 meters, 80 kilometers west of the Ruzizi, but not killed by him personally. For more than 20 years the type remained unique.

In 1927 I was able to spend a day and a half on the summit of the ridge where we believed it had been taken, but bamboos seem to provide so little food for birds that I was not greatly surprised at the failure of my search. Some time later I urged Messrs. Rockefeller and Murphy to renew the attempt, and to go down if necessary to the lower mountain forests on the western side. There at last in July, 1929, they secured seven specimens near the village of Luvumba, scarcely 30 miles west of the lower Ruzizi River. Five were skinned, and two were preserved in alcohol.

In September, 1934, the Reverend L. J. Aspenlind, to whom I had given a colored sketch of Grauer's broadbill at the time of my visit, obtained three more examples for the Royal Museum in Stockholm. These were taken near the same spot as those of

[1] 1905, Ibis, p. 95; 1909, idem, p. 31; 1911, idem, p. 527.

Rockefeller and Murphy. The species is scarcely to be expected throughout the forests of the Kivu highlands, but it may perhaps occur on the mountains west of Lake Kivu, above the 5000-foot contour.

Lord Rothschild considered *Pseudocalyptomena* as a very aberrant member of the Muscicapidae, even though its color reminded him of the broadbill *Calyptomena*. Reichenow in 1911 first placed it in the family Eurylaimidae, apparently through a mistake in translating the original description, and again in 1914[1] he included the genus among the broadbills. In 1921 I examined the type in the Tring Museum and confirmed this allocation on the basis of external characters.

FIG. 2. *Pseudocalyptomena graueri*, male. The female differs very little.

The general aspect is that of a large greenish *Pipra* with light bluish chest. The bill is smaller than that of *Smithornis*, and the rictal bristles are very small. There are no bristly feathers extending forward over the nostrils. The wings are relatively small, and the primaries, viewed from below, have something that recalls *Smithornis*, being rather straight and stiff, with just a little

[1] Die Vögel, vol. 2, p. 181.

of the downward twist of the inner web toward the tip. The outermost (tenth) primary is much too long for any oscine family. There is no elongated outer primary-covert as in *Smithornis*.

In the feet there is a certain resemblance to *Smithornis;* the metatarsus is longer and slenderer, but behind it is covered simply by soft skin with small rounded scales, indicating that the bird is any thing but oscine. There is no such union of the third and fourth toes as in *Smithornis;* the fusion reaches only to the first joint of the third toe. The hind toe (exclusive of claw) is somewhat shorter and stouter in *Pseudocalyptomena*.

The tail is short and rounded, with outermost rectrices some 6 mm. shorter than the median. I found no trace of an aftershaft on either back or breast, again a non-oscine feature. There is no trace of any hidden white patch on the back.

One of the spirit specimens collected by Rockefeller and Murphy was submitted to Percy R. Lowe for anatomical investigation, and in 1931 he showed that *Pseudocalyptomena*, like *Smithornis*, was unquestionably a member of the family Eurylaimidae. His remarks on the rediscovery of this green broadbill err, however, in placing its habitat above the bamboos. A full account was published by Rockefeller and Murphy in 1933. The village of Luvumba, near which they collected all their specimens, is at an elevation of about 6500 feet on the Lusigi River, one of the headwaters of the Ulindi, flowing westward toward the Lualaba.

The birds were found perching singly in forest trees near native plantations, usually from 20 to 75 feet up. They behaved like flycatchers, made quick dashes after flying insects, and sometimes longer flights along the edges of clearings, even up to 100 yards. No vocal notes or noisy wing beats were heard. Probably the breeding season is a long one, because while four adults showed some enlargement of the gonads in late July, a full-grown immature bird was also collected at the same period. Its juvenal plumage resembles that of adults, but is slightly duller throughout, and the under tail-coverts are wholly green.

Furthermore, there is no appreciable difference in color between the sexes. Two adult males have wings 75.5, 76 mm.; tail 39, 39.5; culmen to base 14, 15; metatarsus 19, 20. Two adult females have wing 75, 76.5; tail 39; culmen to base 15; metatarsus 20. In both sexes the iris is very dark brown, bill black, feet light grayish green with blackish claws.

SUBORDER TYRANNI

FAMILY **PITTIDAE.** PITTAS

KEY TO THE AFRICAN SPECIES OF *Pitta*

Whole upper breast green; between this and the pinkish white throat there is usually a half-hidden band of black; red of the abdomen extends up over posterior flank-feathers. . . . . *P. reichenowi*

Whole upper breast buff, lightly tinged at most with olive, no dark bar separating it from the pinkish white throat; red of abdomen does not extend to the posterior flank-feathers, which are buffy. . . . . *P. angolensis*

Pitta angolensis angolensis Vieillot

Pitta angolensis VIEILLOT, 1816, Nouveau dictionnaire d'histoire naturelle, ed. 4, p. 356 (type locality: Kingdom of Angola). HARTLAUB, 1857, System der Ornithologie Westafrica's, opp. p. lix (Congo). FINSCH, 1903, Notes Leyden Mus., vol. 23, note 29, p. 206 (Boma). HELLMAYR, 1918, Verhandl. Ornith. Gesellsch. Bayern, vol. 13, pp. 308, 309. SCHOUTEDEN, 1924, Bull. Cercle Zool. Congolais, vol. 1, p. 6; 1938, idem, vol. 15, p. 39. CHAPIN, 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 70 (in part. Boma).

Pitta longipennis REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 722 (in part. Boma). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 33 (in part. Mayombe).

Pitta angolensis angolensis SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 195. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 307. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 13.

DISTRIBUTION OF THE SPECIES: Sierra Leone to southwestern Cameroon, the Lower Congo, Angola, and Tanganyika Territory to the Transvaal, occurring also in Kenya Colony, Uganda, and the eastern Congo as an off-season migrant.

Pitta angolensis angolensis of northwestern Angola, the Lower Congo, and Loango Coast has wings measuring 116–124 mm. in adults. *P. a. pulih* Fraser of Upper Guinea and the coastal region of Cameroon is very similar in color, but the wings measure only 105–115 mm. *P. a. longipennis* is a somewhat larger form, wings 125–130 mm., which is believed to nest from the Transvaal north to central Tanganyika Territory between September and March, migrating northward in its off season to central Kenya Colony, Uganda, and the northeastern Congo.

In general coloration *longipennis* is lighter than *pulih*, the under wing-coverts are not quite so black, and the middle upper secondary-coverts have deep blue tips which are virtually wanting in *pulih*. In all these details typical *angolensis* is intermediate, as it is in wing length. Full-grown wings of young individuals are several

millimeters shorter than those of adults and have not been considered here.

The Angola pitta is a bird of wooded regions, difficult to see, and probably haunting thickets rather than the more open undergrowth of virgin forests. The Mayombe specimen reported by Dubois was obtained at Luki by Julien. Occasionally this bird strays into gardens and towns. At Boma Rodhain is said to have captured one in a garden. Malbrant has sent us two adults caught by natives in the town of Brazzaville on October 17, 1939, and May 31, 1940. Still another was captured alive in Leopoldville on June 17, 1943, and brought to Raymond Colback. At Boma Dartevelle secured one in May. The dates suggest that these were transients, and that the birds which begin breeding in northern Angola toward November migrate northward again in May and June to spend the dry season in the French Congo.

L. Petit,[1] who collected at least five of these pittas near Landana, stated that he often heard it during the rainy season. It would perch on a low bough, and then make a curious noise which he wrote "prrrrouuut." At the same time it would jump up about 25 cm. into the air, so that he believed the sound was produced with the wings. It quickly dropped back on its perch, and repeated the performance two or three times per minute. Zenker told Reichenow[2] of similar behavior by *P. a. pulih.*

For the Loango Coast Petit gave the nesting season as December and January and told of finding a nest with four eggs. Ansorge's description of the egg from Ndala Tando, Angola, November 6, is certainly more accurate. It was said to be almost round, creamy white with black blotches, lines, and scrawls, also underlying markings of stone color mainly in a zone around the blunt end; 26 by 23.5 mm.[3]

Pitta angolensis longipennis Reichenow

Pitta longipennis REICHENOW, 1901, Ornith. Monatsber., p. 117 (type locality: Ipiana, near Langenburg, L. Nyasa). SCHOUTEDEN, 1924, Bull. Cercle Zool. Congolais, vol. 1, p. 6 (Baraka; Kinda); 1933, idem, vol. 10, p. 33 (Baudouinville).

Pitta angolensis DUBOIS, 1886, Bull. Mus. Roy. d'Hist. Nat. Belgique, vol.

[1] 1899, Mem. Soc. Zool. France, vol. 12, p. 80; 1926, Dix années de chasses, pp. 233, 234.

[2] 1903, Die Vögel Afrikas, vol. 2, p. 391.

[3] Bannerman, 1936, The birds of tropical West Africa, vol. 4, p. 16.

4, p. 147 (region of L. Tanganyika). SCHALOW, 1886, Jour. Ornith., pp. 396, 410, 428 (Upemba; Lufua R.). MATSCHIE, 1887, Jour. Ornith., p. 152. SHELLEY, 1900, The birds of Africa, vol. 2, p. 4. REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 390 (in part. Marungu). CHAPIN, 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 70 (in part. Bili; Katanga). SCHOUTEDEN, 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 86 (region of Bili). HENDRICKX, 1944, Ostrich, vol. 15, p. 201 (southwest of L. Kivu).

Pitta reichenowi REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 391 (in part. L. Upemba; Lufua R.).

Pitta angolensis var. *longipennis* DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 33 (in part. Tanganyika).

Pitta sp. HELLMAYR, 1918, Verhandl. Ornith. Gesellsch. Bayern, vol. 13, p. 312 (Mulema in southwest Uganda).

? *Pitta reichenowi* HELLMAYR, 1918, Verhandl. Ornith. Gesellsch. Bayern, vol. 13, p. 314 (Lufua R.).

Pitta angolensis brevipennis DE RIEMAECKER, 1927, Rev. Zool. Africaine, vol. 14, p. 275 (Elisabethville).

Pitta angolensis longipennis SCHOUTEDEN, 1935, Rev. Zool. Bot. Africaines, vol. 27, p. 402. M.-PRAED AND GRANT, 1938, Ibis, p. 338 (west of L. Kivu). VERHEYEN, 1947, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 23, no. 10, p. 4 (Musosa).

DISTRIBUTION: Northern Transvaal and Portuguese East Africa to the Kyambu Forest in Kenya Colony, Budongo Forest in Uganda, Bili in the Uelle District, the vicinity of Lake Kivu, and Kinda in the eastern Lulua District.

While its color characters are none too well marked, *longipennis* is distinctly longer winged than *angolensis*, with wing tips more pointed, and has metatarsi 36–39 mm., as compared with 35–37 mm. in *angolensis* and 33–35 in *pulih*.

Pitta angolensis longipennis is believed not to nest north of the central railway in Tanganyika Territory, but to migrate northward after its breeding season. This was first suspected by Moreau[1] because of the frequency with which it seemed to be attracted at night to lighted windows at Amani, Usambara, during the month of May. He found that the scattered occurrences in Kenya Colony had been noted in May and June.

For six years in succession these pittas arrived by night in Amani between May 1 and June 10. In the forests of Uganda, where *P. reichenowi* is resident, *P. a. longipennis* has been taken in May, June, and July. Guy Babault secured *longipennis* on the west side of Lake Kivu, where it is not expected to breed, and

[1] 1933, Ibis, p. 433; 1937, idem, p. 321.

in the Lower Uelle District Brother Joseph Hutsebaut obtained a female at Angodia on July 26, as well as a male and a female at Bili on September 21. These localities in the northern Congo are believed to mark the extreme limit of the migration. By October one would expect the birds to be moving southward again. In early November Böhm observed the species in Marungu, where possibly it breeds. Specimens in the Congo Museum from Baraka, Baudouinville, and Kinda are unfortunately without date.

Along the coast of southern Tanganyika Territory and inland to elevations of 1500 feet where there are suitable thickets, Harvey[1] found the pittas present only between November 29 and February 27, and breeding during that period. He noted that they hopped about on the ground scratching among fallen leaves and eating termites. When disturbed they flew up into the higher trees. They often revealed themselves by their loud calls, described as "a deep, liquid, short trill, 'p-r-r-r-p.' " When making the call, the bird puffs out its feathers and gives one big flap of its wings; then between calls it sits very still. Moreau, who kept two of these pittas alive for about a year, noted that a supposed male would give a "grunting" call as it stood almost on tiptoe, fanning out its red belly-feathering. The usual note was low-pitched and querulous, like "skeeow," and a brief whinnying outcry was heard very rarely. In Nyasaland, however, Benson[2] reports the pitta as jumping into the air with extended wings and then making the explosive sound which he writes "sproo!"

Nests, according to Harvey, are large, untidy, domed structures of twigs and dry leaves, lined inside with finer twigs and tendrils and a few dry leaves, entrance holes at the side. They are placed some 6 to 12 feet above the ground in smaller branches of thorny trees and contain up to three eggs. These are creamy whitish with dark purplish or liver-colored spots and paler lilac markings, 27.5–29 mm. by 23.2–25 mm.

Pitta reichenowi Madarász

Pitta reichenowi MADARÁSZ, 1901, Ornith. Monatsber., p. 133 (type locality: middle Congo R.). FINSCH, 1903, Notes Leyden Mus., vol. 23, note 29, p. 207. REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 391. SHARPE, 1903, Ibis, p. 92.

[1] 1938, Ibis, pp. 335–337.

[2] 1942, Ibis, pp. 302, 303; 1944, idem, pp. 459, 460.

CHRISTY, 1909, Bull. Brit. Ornith. Club, vol. 23, p. 49 (central Congo; Chagwe Forest in Uganda). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 240, pl. 7 (Beni; Mawambi). HELLMAYR, 1918, Verhandl. Ornith. Gesellsch. Bayern, vol. 13, p. 313. SCHOUTEDEN, 1924, Bull. Cercle Zool. Congolais, vol. 1, p. 6 (Buta); 1928, idem, vol. 5, p. 40 (Uelle; Aruwimi; region of Bolobo); 1934, idem, vol. 11, p. 44; 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, pp. 102, 103 (Kotili; Panga); 1938, Bull. Cercle Zool. Congolais, vol. 14, pp. 97, 104; 1940, idem, vol. 16, p. 72. BATES, 1930, Handbook of the birds of West Africa, p. 298. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 308. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 16 (Avakubi; Medje; between Kwamouth and Stanley Pool). CHAPIN, 1938, Bull. Cercle Zool. Congolais., vol. 15, p. 70. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 773.

SPECIMENS: Avakubi, male, August 7; immature male, October 20; juvenile female, August 27. Medje, male, May 18; juvenile male, 2 juvenile females, September 17.

ADULT MALE: Iris dark brown; bill black, sometimes tinged with brown on culmen and beneath mandible; feet pinkish gray or pale flesh color, larger scales on lower metatarsus and toes gray-brown, claws whitish.

NESTLINGS: Iris dark brown; tip and base of bill orange, middle portion black, corners of mouth and its interior orange; feet light orange-red, with all larger scales dusky brown, claws pinkish orange.

DISTRIBUTION: From the vicinity of Stanley Pool, Oyem in the Gaboon, and the interior of southern Cameroon, near the River Ja, eastward across the whole Upper Congo forest to the lowland forests of Uganda, as far as Jinja. To the southeast it doubtless extends to the Manyema District and may be expected in the northern Kasai, but it has never been found in mountain forests above 4500 feet.

In 1922 Mr. Emil Torday kindly informed me that he collected the type specimen at a place called "la Scierie" on the narrow section of the Congo River just above Stanley Pool. Schouteden's native collectors have secured a fine series, including young from a nest, at Kunungu near Bolobo.

Undoubtedly a very close ally of *P. angolensis*, Reichenow's pitta replaces it throughout the greater part of the Lower Guinea forest and is regarded as a distinct species because of its much deeper coloration and the lack of any intergradation. Its wing tip is rounded as in *P. angolensis pulih*, and its wing length varies from 113 to 125 mm. in adults. There appears to be little if any

difference in color between the sexes. Although at first it seemed remarkable that *reichenowi* and *longipennis* should both occur in the forests of Uganda, it now turns out that the former is resident there and *longipennis* only an off-season visitor.

In the forests of the Congo Reichenow's pitta is more than apt to escape observation. Nearly all the specimens are trapped

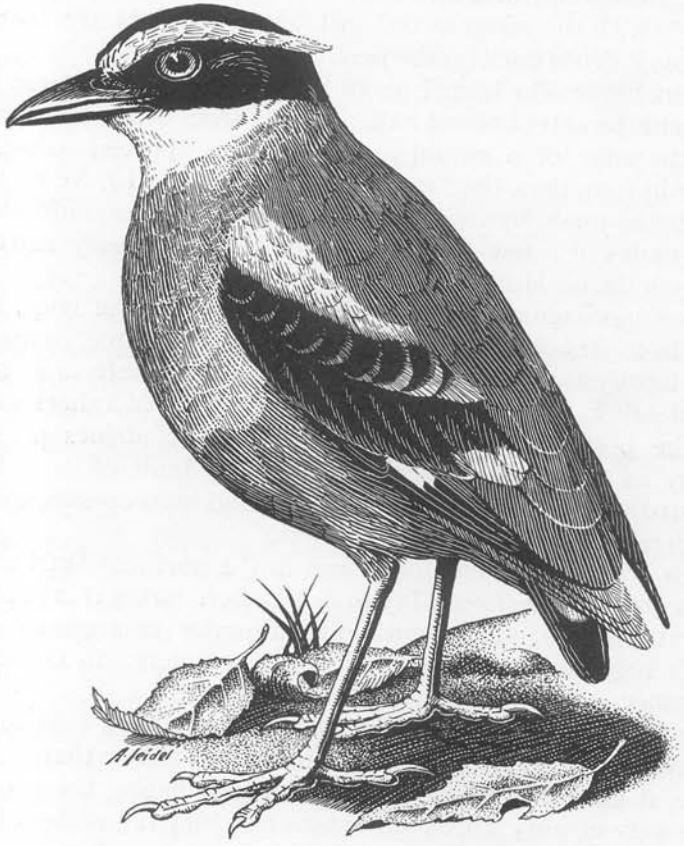

FIG. 3. *Pitta reichenowi*, male.

or shot by natives. It may be partial to old second growth and thickets rather than virgin forest, and it seems to be fairly common in the vicinity of Avakubi, Buta, Lukolela, and Kunungu. According to native hunters it is not sociable, hops on the ground while feeding, and occasionally flies up to perch in the trees.

Near Avakubi my helper Nekuma called my attention in July, 1914, to a brief, purring sound like "brrrt!" or "prrrt!" which he had seen being made by this pitta during a short upward flight from its perch. In October, 1930, at Lukolela another hunter, Kambulu, again told me of this sound, and showed me a horizontal branch of a fallen tree in forest where he had watched a male pitta performing and then collected it. The noise seems to be made with the wings as the bird flies upward about a foot, and ceases as it drops back on the perch.

About five weeks later I again heard this noise repeated three times at intervals of about half a minute from dense undergrowth near the edge of a swampy forest. It is shorter, softer, and deeper in tone than the "croak" of *Smithornis*. I have no doubt of its being made by the pitta, especially since Kambulu secured seven males in a few months. But it is not an easy matter to approach the birds and see them.

Other specimens were captured by natives in the Ituri, sometimes in snares on the ground, and a brood of three young with wings hardly two-thirds grown was brought by natives at Medje in September. These nestlings frequently uttered a short whistle, and the posterior ends of their superciliary stripes projected slightly as "horns." Their nest had been built of dead leaves and lined with small plant stems, but it had been opened up wide, though probably really of domed form.

Both in the Cameroon forest and in the northern Ituri nesting appears to continue from May to September, during rainy months, while at Lukolela, a little south of the Equator, enlargement of the gonads suggested that breeding would commence in October or November.

A nest brought to Bates[1] in the Cameroon was said to have been supported on a branch of a fallen tree, higher than a man's head. A male bird was captured while incubating the two eggs, which were creamy white, with spots and blotches of dark brown and gray, mostly confined to the larger end. They measured 28.5–30 mm. by 21 mm.

In the Budongo Forest, Uganda, Captain Pitman had four nests found by natives on May 10, 1943, and May 3, 1944. Placed 5 to 8 feet from the ground on horizontal or gently sloping tree trunks or boughs, they were fairly large and domed. The

[1] 1911, Ibis, p. 518.

materials included a few twigs, but were mainly dead leaves, with a cup of rootlets. One set was of two eggs, the others of three; cream white, spotted or blotched with chocolate, and with a few slaty gray shell markings. Dimensions were 24.3–29.6 mm. by 21.3–22.8 mm.

Stomach examinations have been made of seven adults, several of them from Lukolela. In five cases there were one or two naked caterpillars; remains of beetles were likewise noted in five, and beetle larvae in two. Small millipedes or fragments thereof were in five different stomachs, while other food consisted of one worker termite, one maggot, a leg of an orthopter, the head of a tiny centipede, a "pillbug" (isopod), and one tiny snail.

SUBORDER PASSERES

FAMILY **ALAUDIDAE.** LARKS

KEY TO THE GENERA OF ALAUDIDAE OCCURRING IN OR NEAR THE CONGO

1. Nostrils exposed.....2
   Nostrils hidden by small bristly feathers.....4
2. Bill long and slender, slightly decurved; culmen to base measuring a little more than three-fourths the length of metatarus; hind claw very straight, usually longer than 12 mm.....*Certhilauda* (p. 50)
   Bill straighter and stouter; culmen usually less than three-fourths the length of metatarsus; hind claw somewhat curved and usually shorter than 12 mm.....3
3. Wing rounded, when wing is folded the primaries project little beyond secondaries; longest primary exceeds innermost primary by less than length of metatarsus.....*Mirafra* (p. 31)
   Wing more pointed, primaries project well beyond secondaries; longest primary exceeds innermost by more than length of metatarsus.....*Pinarocorys* (p. 48)
4. Only nine visible primaries, the tenth greatly reduced and hidden against upper surface of wing.....*Calandrella* (p. 56)
   Tenth primary plainly visible on outer lower surface of wing, nearly as long as primary-converts or longer.....5
5. Bill slender, almost chat-like; head with a slight crest; lower breast and abdomen uniform buff.....*Heliocorys* (p. 50)
   Bill short, stout, and very finch-like; some black on posterior underparts, at least on middle of abdomen.....*Eremopterix* (p. 52)

KEY TO THE SPECIES OF *Mirafra* OCCURRING IN OR NEAR THE CONGO

1. Primaries gray-brown without rufous edgings, only a narrow buff margin on outer edges, and inner webs becoming light brownish gray basally .....*M. sabota*
   Primaries margined with cinnamon or rufous, and sometimes even mostly

rufous at bases 2

2. Both webs of the primaries largely rufous for more than half their length, though the shafts remain dark brown above; wings usually over 87 mm. long; crown-feathers rufous at base and with a blackish stripe distally ..... *M. africana*

   Bases of primaries not rufous for even one-fourth of length, though these quills may be edged with cinnamon or rufous on both webs; wings usually shorter than 88 mm 3

3. No white on outer rectrices, the outermost buff or rufous with blackish inner border, the next one buff or rufous on outer web ..... *M. rufocinnamomea*

   Some white on outer tail-feathers 4

4. Bill longer, culmen to base 17–20.5 mm.; crown and back heavily streaked with black, but varied especially on temporal region and scapulars with deep rufous; innermost secondaries with rufous bars near tips .. *M. angolensis*

   Bill shorter, culmen to base less than 17 mm.; upperparts streaked, but not varied with deep rufous; innermost secondaries only fringed with pale buff 5

5. Outermost rectrix almost completely white, and white of outer web of next quill extends over onto inner web ..... *M. albicauda*

   Outermost rectrix largely white except at base, but white of next quill strictly limited to outer web ..... *M. cantillans*

Mirafra sabota plebeja (Cabanis)

Alauda (Megalophonus) plebeja CABANIS, 1875, Jour. Ornith., p. 237 (type locality: Chinchoxo on Loango Coast).

Mirafra sabota plebeja SCLATER, 1926, Bull. Brit. Ornith. Club, vol. 47, p. 30 (Portuguese Congo and perhaps northern Angola); 1930, Systema avium Aethiopicarum, pt. 2, p. 317. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 32.

DISTRIBUTION OF THE SPECIES: Northern Cape Province and Zululand to Matabeleland, Southwest Africa, the coastal region of Angola, and Landana just north of the Congo mouth. There appear to be about 10 races, differing slightly in coloration, and *M. s. naevia* (Strickland) of the Damara Plateau having a relatively large bill. Six races are said to live in Southwest Africa,[1] and a rather pale, small-billed form, *M. s. ansorgei* Sclater, extends northward along the coast of Angola at least to Lobito Bay. *M. s. plebeja*, similar in size but apparently a little browner, is known thus far only from the vicinity of Landana. It may be expected near the mouth of the Congo, where it must be closely restricted to the seashore, and perhaps along the northern coast of Angola.

[1] See Hoesch and Niethammer, 1940, Jour. Ornith., Sonderheft, pp. 216–219.

In Southwest Africa, according to Stresemann[1] and to Niethammer,[2] the coloration of the upperparts tends to match that of the ground on which they live, in much the same way as with larks of the genera *Galerida*, *Ammomanes*, and others. In better-watered regions such as the Congo it may be that the vegetation becomes part of the background to which the coloration of larks and pipits is adapted.

According to Austin Roberts,[3] *M. sabota* inhabits relatively dry areas, feeding on the ground but frequently perching in trees. Its voice is chirruping, and the nest is more or less hidden beneath a tuft of grass.

Mirafra albicauda Reichenow

Mirafra albicauda REICHENOW, 1891, Jour. Ornith., p. 223 (type locality: Igonda, Tabora district, Tanganyika Territory). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 309 (L. Edward). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 778 (Butiaba). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 86.

DISTRIBUTION: From the region of Lake Chad east to the upper White Nile and Lake Abaya in southern Abyssinia, southward to Lake Albert, Lake Edward, Athi and Kapiti plains in Kenya Colony, the Ardai plains and the Tabora district in Tanganyika Territory.

This rather small lark, with much white on outer tail-feathers, may well prove to be a northern race of *M. cheniana* Smith of South Africa. In eastern Africa and the eastern Sudan it occurs in somewhat the same regions as *M. cantillans chadensis* and *marginata*. These are a little more rusty brownish above, less heavily spotted with black on the chest, and only the outermost tail-feather is mostly white. In *albicauda* the two outer rectices are white, though their inner webs are bordered with blackish basally, and on the next-to-outermost this dark border may run almost to the tip.

Mirafra albicauda reaches our territory only about the shores of Lake Albert, the northern shore of Lake Edward, and probably the upper Semliki Valley. There it frequents fields of grass growing about knee high, side by side with *M. rufocinnamomea*

[1] 1939, Ornith. Monatsber., p. 62.

[2] 1940, Jour. Ornith., Sonderheft, pp. 75–83, pl. 2.

[3] 1940, The birds of South Africa, p. 191.

kawirondensis, from which it can be distinguished, as it rises, by its white outer rectrices. Difficult to see on the ground, it takes off with rather slow, hovering flight, and after going some 30 or 40 yards it drops back into the grass. It never claps its wings like *M. rufocinnamomea* and according to Jackson (1938) sings on the wing while soaring round in circles, high above the ground.

At Kasenyi on Lake Albert I collected four immature examples between August 27 and September 2, and in the plain 10 miles west of Katwe on Lake Edward took a non-breeding adult female on January 19. Nesting probably takes place about Lake Albert toward May, in the early part of the rains. In three out of five stomachs I found only grass seeds; the other two held insect remains.

[*Mirafra cantillans marginata* Hawker]

Mirafra marginata HAWKER, 1898, Bull. Brit. Ornith. Club, vol. 7, p. 55 (type locality: Ujawagi, western Somaliland).

The species ranges from French Guinea eastward across the Sudan to the Red Sea, southward through East Africa to the region about Kilimanjaro; also from southern Arabia to India and Siam. Six races are commonly recognized, of which three dwell in the Sudan and East Africa.

The pale *M. c. chadensis* Alexander is found from French Guinea to the Kassala Province, but prefers more arid country than any in the northern Congo. *M. c. marginata*, much darker brown above, extends from the Hawash Valley in Abyssinia to northern Uganda, Lake Magadi, and the plains southeast of Kilimanjaro. We have one adult female collected by Jackson at Nimule on the Bahr-el-Jebel, about 75 miles from the nearest boundary of the Congo. *M. c. schillingsi* Reichenow from the plains west of Kilimanjaro is more reddish brown above, streaked there like the other races,[1] and it seems to me that *M. passerina* Gyldenstolpe of the Transvaal and Damaraland is likewise a representative of this wide-ranging species.

Mirafra rufocinnamomea fischeri (Reichenow)

Megalophonus fischeri REICHENOW, 1878, Jour. Ornith., p. 266 (type locality: Rabai near Mombasa); 1887, idem, vol. 35, p. 309 (Kasongo).

[1] See Grant and Mackworth-Praed, 1939, Bull. Brit. Ornith. Club, vol. 59, p. 115; but perhaps the name *meruensis* Sjöstedt should supersede *schillingsi*, and the whole *cantillans* group is apparently conspecific with *M. javanica* Horsfield.

Mirafra apiata SHARPE AND BOUVIER, 1878, Bull. Soc. Zool. France, vol. 3, p. 77 (Condé). SHELLEY, 1888, Proc. Zool. Soc. London, p. 28 (Congo region). PETIT, 1926, Dix années de chasses, p. 120 (near Boma).

Mirafra fischeri SHARPE, 1890, Catalogue of the birds in the British Museum, vol. 13, p. 600. SHELLEY, 1902, The birds of Africa, vol. 3, p. 43, pl. 16, fig. 2. REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 339 (in part. Kasongo; Condé). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31. NEAVE, 1910, Ibis, p. 241 (Chambezi R.). BERLIOZ, 1925, Bull. Mus. Hist. Nat. Paris, vol. 31, p. 348 (Luluabourg). SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 195 (Moanda).

Mirafra tigrina OUSTALET, 1892, Naturaliste, vol. 6, p. 231 (in part. Batéké country in French Congo); 1893, idem, vol. 7, p. 127.

Mirafra fischeri fischeri SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, pp. 330, 395 (Macaco; Kabambaie; Ngombe in Kasai; Tshisika; Dumbi; Kwamouth); 1924, idem, vol. 12, p. 268 (Kisantu; Kidada); 1925, idem, vol. 13, p. 12 (Kunungu).

Mirafra fischeri zombae SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 284 (Kafubu R. near Elisabethville). LYNES AND SCLATER, 1934, Ibis, p. 39 (near Elisabethville; Nasondoye; Dilolo). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 29. LYNES, 1938, Rev. Zool. Africaine, vol. 31, p. 73 (Biano; Kayoyo; Kamina; Luluabourg; L. Mukamba; Leopoldville). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 75 (Batéké country; Brazzaville).

Mirafra rufocinnamomea angolensis M.-PRAED AND GRANT, 1939, Ibis, p. 558 (Congo R. mouth; southeastern Congo).

Mirafra rufocinnamomea zombae M.-PRAED AND GRANT, 1940, Ibis, p. 141 (Congo R. mouth). WHITE, 1945, Bull. Brit. Ornith. Club, vol. 66, p. 14 (Mwinilunga). VINCENT, 1946, Ibis, p. 464.

SPECIMENS: Boma, two males, January 3, 21; female, January 5. Leopoldville, male, December 21.

DISTRIBUTION OF THE SPECIES: From Abyssinia and Darfur south to the northern and eastern Congo, East Africa, Zululand, Ngamiland, and west to Angola and the southern Gaboon. Never present in the equatorial forests.

It has often been said that this lark exhibits light and dark-backed color phases, and that dark coloration above is not a reliable sign of racial variation. To this I do not subscribe, but it does seem that occasional examples in many parts of the range are exceptionally rufous. For a long time these were regarded as a distinct species, *M. rufocinnamomea* Salvadori, which occurred supposedly in Abyssinia, Darfur, East Africa, and Angola. Since Mackworth-Praed and Grant (1939) have examined Salvadori's type, it seems to be proved that *Mirafra fischeri* is not specifically distinct from *rufocinnamomea*.

Mirafra rufocinnamomea rufocinnamomea (Salvadori) of Abyssinia is a generally rufous race with wings 79–89 mm. *M. r. torrida* Shelley of the interior of East Africa is also decidedly rufous, with wings about 76–82 mm. *M. r. sobatensis* Lynes is a dark-backed race, with wings 81–87 mm., from the mouth of the Sobat River, and *omensis* Neumann is a near ally if not synonymous.

Mirafra rufocinnamomea fischeri is usually rather dull brown on the back, and along the East African coast rather short-winged, 70–76 mm. Birds of much the same coloration, but often a little more tinged with rufous above, extend southward along the coast to Zululand and inland to the northeastern Transvaal, Rhodesia, and the southern shores of Lake Victoria, but their wings measure 74–82 mm. From these it is difficult to separate specimens from the Katanga, Marungu, Kasai, and Lower Congo. An Angolan race has often been recognized under the name *angolensis*, but *M. angolensis* Bocage is quite a different species, and examples of *M. rufocinnamomea* from Angola are not unlike those of Rhodesia and the Kasai.

In recent years, too, the birds of Rhodesia, Angola, and the southern Congo have often been called *zombae*, although that name was proposed by Ogilvie-Grant[1] for very dark-backed birds collected near Zomba and the base of the Mlanje Mountains. It is more than likely that this is a valid melanistic race of southern Nyasaland.[2] On the other hand, a light-colored race, *M. r. mababiensis* (Roberts),[3] is now known from Ngamiland.

There is no further doubt as to the validity of *M. r. kawirondensis*, which has a very dark brown back, wings 72–81 mm., and extends from the Kavirondo District to the plains about Lakes Albert and Edward. Neither can one question the deep rufous *M. r. tigrina* Oustalet, which ranges from the north end of Lake Albert westward across the Uelle District to the Ubangi-Shari. Its wings measure 73–80 mm., and while it bears considerable resemblance to *torrida*, I believe that the red specimens from Ankole and the Kagera Valley are *torrida* rather than *tigrina*.

Mirafra r. furensis Lynes of Darfur is paler rufous than either *tigrina* or *torrida*, and *M. r. buckleyi* (Shelley), ranging from the Shari River westward to the Gambia, appears to be a race of

[1] 1902, Bull. Brit. Ornith. Club, vol. 13, p. 27 (Zomba plains, southern Nyasaland).

[2] See Vincent, 1935, Ibis, pp. 26, 27.

[3] 1932, Ann. Transvaal Mus., vol. 15, p. 27 (Tsotsoroga Pan, Ngamiland).

this species, despite its somewhat simpler color pattern on the upperparts and its very rufous upper tail-coverts.

Within the limits of the Congo one is struck by the constant differences in color between the rufous-backed race of the Uelle, the dusky-backed one of the savannas bordering on Uganda, and the relatively dull brown birds of all the southern savannas, which I shall call *M. f. fischeri* for the present. This subspecies is widely distributed almost everywhere south of the forest belt, from Lake Tanganyika to the coast at Moanda, and extends even up the coast to Landana and into the grasslands of the southern Gaboon. While mainly a lowland bird, it has not been reported from the Ruzizi Valley; and yet Rockefeller and Murphy collected it in Marungu up to 5650 feet, as did Lynes on the Biano Plateau in the Katanga.

At Leopoldville and Boma I found it very common and similar in behavior to *tigrina* of the Upper Uelle. It frequents barren spots on the hills of the Lower Congo as well as cultivated fields in the hollows. Flying high in the air, these larks beat their wings noisily, as many as five or six times in rapid succession, but seem to have no song. This has given them the familiar name of flappet-lark or clapper-lark.

Between the Lulua District and Leopoldville Lynes (1938) noted the breeding season as from September to November, and in the Lower Congo my specimens in late December and January were non-breeding. Yet at Missão de Luz, Angola, Lynes found a nest with two eggs in January. A. W. Vincent (1946) described a nest found near Elisabethville on November 11 as made of long stems of soft grass curled round in a hollow between some grass tufts and resembling the shape of a rugby ball, with an opening at one end. The two eggs were white with close streaky freckling of brown and ash gray, most pronounced in a zone around the large end. They measured 20.7 by 14 mm. and 20 by 14.3 mm. Lynes's Angola eggs averaged 20.2 by 14.9 mm.

The three stomachs I examined contained nothing but insects: numbers of small termites (workers) in two cases, also a grasshopper and a small elater.

Mirafra rufocinnamomea kawirondensis Van Someren

Mirafra fischeri kawirondensis VAN SOMEREN, 1921, Bull. Brit. Ornith. Club, vol. 41, p. 125 (type locality: Kisumu, L. Victoria). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 77 (Masidongo; Rut-

shuru Plain; Ruindi Plain). JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 785. SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 86 (Kabare on L. Edward).

Mirafra zombae O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 310 (Mokia, western Uganda).

Mirafra fischeri REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 341 (Kirk Falls).

Mirafra fischeri zombae SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 281.

Geocoraphus spec. EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, pp. 128, 142 (Tunguru on L. Albert).

Mirafra fischeri kavirondensis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 313.

DISTRIBUTION: From the Kavirondo district of Kenya Colony around the northern side of Lake Victoria to the west shore of Lake Albert, grasslands in the Semliki Valley, shores of Lake Edward, and the Rutshuru Valley. Within the area here outlined, nearly every specimen taken is dark backed, and I do not regard the very reddish birds of northern Uganda or of Ankole and the Kagera Valley as *kawirondensis*. Those of the low country just west of Lake Victoria seem closest to *M. r. torrida*.

On the low ground near Kasenyi in 1926 we found *kawirondensis* rather common, especially where the grass grew sparsely, leaving patches of bare earth. It was also numerous on the plains near the old post of Kasindi, in the upper Semliki Valley, and on the Ruindi and Rutshuru plains. At the south end of Ruwenzori I shot one at 4000 feet, but never found any higher, no matter how open the country might be. It even seemed wanting from the grasslands around Irumu.

The wing snapping in this region was exactly like that heard in other parts of the Congo and is doubtless produced by males only. It cannot be restricted to the time of nesting, for none of our six specimens had gonads enlarged. Two eggs taken by R. van Someren at Mawakota in Uganda on June 20 were dark iron gray, very finely mottled thoughout with dusky pink, measuring 20 mm. by 15–16 mm.

In six stomachs I found only the remains of small insects, and in one case these included many small termites.

Mirafra rufocinnamomea tigrina Oustalet

Mirafra tigrina OUSTALET, 1892, Naturaliste, ser. 2, vol. 6, p. 231 (type locality: Upper Kemo R., southern Ubangi-Shari); 1893, idem, vol. 7, p. 127 (in part. Upper Kemo R.).

Mirafra fischeri REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 339 (in part. "Ubangi").

Mirafra cranbrooki ALEXANDER, 1907, Bull. Brit. Ornith. Club, vol. 19, p. 88 (type locality: Bwando, Ubangi R.). BANNERMAN AND BATES, 1924, Ibis, p. 261.

Mirafra buckleyi cranbrooki SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 316. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 103 (Mahagi Port; Mauda).

Mirafra buckleyi tigrina BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 32 (Bwando; Voro; Amadi). BERLIOZ, 1939, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 11, p. 529 (Zémio). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 75.

Mirafra rufocinnamomea tigrina M.-PRAED AND GRANT, 1939, Ibis, p. 558 (in part. Northern Belgian Congo).

SPECIMENS: Niangara, four males, June 9, November 7, December 18; 4 females, May 6, June 19, 22; immature male, November 10; juvenile male, April 20.

ADULTS: Iris medium brown; maxilla brownish black, mandible light gray; feet light brownish.

NESTLING: Iris dark brown; maxilla rather light brown, with dusky brown tip, mandible dusky brown, lighter at base, corners of mouth dull orange; feet pale buff.

DISTRIBUTION: Upper Uelle district, and perhaps also Mahagi Port and Wadelai, west through the Ubangi savannas to Bozum and to Tibati in the Cameroon.

This deep rufous race was long known as *cranbrooki* Alexander, because when describing *tigrina* Oustalet used specimens from both north and south of the forest belt. The first locality he mentioned was the southern one (Batéké country), but then he proceeded to describe the more rufous northern bird (from the upper Kemo River) before the browner southern one. Since Berlioz regards the rufous bird as Oustalet's type, with the approval of Gyldenstolpe and Bannerman, I see no need of further argument.

Schouteden's rufous specimen from Mahagi Port is not at all like *kawirondensis* from Kasenyi. Yet three specimens in the British Museum from Redjaf and Kajo Kaji are darker above than *tigrina*, without its usual spotting. I have never seen one skin from Uelle which was not distinctly reddish.

Strangely enough, we never detected the presence of this lark around Aba or Faradje, though it was very common at Niangara, extending almost to Dungu. I cannot find any important seasonal change in the color of adults, and even in juvenal plumage *tigrina* is as reddish as *torrida*.

Because of its noisy wing beats the flappet-lark could scarcely be overlooked. About Niangara it lived chiefly in cultivated land, such as fields of sweet potatoes or *Eleusine* millet, and walked on the bare ground. If the vegetation offered sufficient cover, one might approach to within a few feet before flushing it. Should the bird alight on a low stump or termite hill, it seemed aware of its conspicuous position. I never saw one perch in a tree.

As though to replace a song, which is entirely lacking, the wings supply a most characteristic sound. A bird will frequently be seen flying aimlessly around overhead, perhaps 30 or 40 yards up, and at intervals three loud wing beats will be heard in quick succession. The sound sometimes carries farther than the bird can be seen. Careful watching will disclose a more rapid vibration of the wings while the noise is being produced, the bird rising slightly in its course. The Mangbetu call this lark "Ekwurru-kwurru," a word which recalls the sound of its wings if the *r*'s are rolled very strongly. After a little time the performer seems tired, he no longer sounds his wings, flies about as though looking for a suitable spot to alight, and suddenly comes swooping down to the ground.

It appears to be only the males that perform this evolution, judging from the examples shot. They do it at all seasons, whether wet or dry. On rainy days, I noticed, these larks are especially apt to be found sitting in open spots on roads, as though they disliked the wet grass. Usually they are more secretive.

At Niangara the breeding season must extend at least from March to June, for we took a young bird with the tail not fully grown in April, and breeding adults in May and June.

From the contents of nine stomachs, it appears that they are almost exclusively insectivorous, only one bird having eaten some small seeds. Insect remains were present in every case, including, twice, the heads of a half-dozen small termites (workers). One small caterpillar and a cricket were also noted.

Mirafra rufocinnamomea torrida Shelley

Mirafra torrida SHELLEY, 1882, Proc. Zool. Soc. London, p. 308, pl. 17 (type locality: Ugogo, Tanganyika Territory).

Mirafra "fischeri" torrida VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 176 (Ankole).

Mirafra fisheri kawirondensis JACKSON AND SCLATER, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 785 (in part. Southern Ankole).

DISTRIBUTION: Interior of Kenya Colony from Marsabit plains, Fort Hall, and Simba south to Ugogo and Oldeani in Tanganyika Territory, at elevations between 2000 and 5500 feet. Also in southern Ankole and the Kagera Valley, west of Lake Victoria.

A rufous race somewhat like *tigrina*, but generally a little lighter above and more heavily washed or spotted with rufous on upper chest. Attention has already been called by Van Someren and by Jackson and Sclater to the presence of such birds in southern Ankole, and in the Rothschild collection I find one collected in 1907 by Rudolf Grauer "zwischen Kagera und Marienseen," or between the Kagera River and St. Mary's Lakes. "Marienseen" was in northeastern Urundi, southeast of Lake Rugwero. Grauer's specimen looks not very unlike *tigrina*. The species has not been found on the plateaus of Urundi, Ruanda, or the Kivu.

Mirafra angolensis Bocage

Mirafra angolensis BOCAGE, 1880, Jor. Sci. Nat. Lisboa, vol. 8, p. 59 (type locality: Caconda, Angola). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 74 (Dilolo). M.-PRAED AND GRANT, 1940, Ibis, p. 141. WHITE, 1947, Ostrich, vol. 18, p. 170 (Mwinilunga Dist.).

Mirafra africana chapini WHITE, 1946, Ibis, pp. 75, 507, 508 (Mwinilunga; Luakera R. near Congo border).

DISTRIBUTION: Benguella Plateau of Angola, from Caconda and Mombolo at least to Vouga; the vicinity of Dilolo in the southwestern Lulua District of the Congo; and the highland of Marungu.

Shelley[1] and Reichenow[2] recognized this as a valid species of lark, although Hartert at first regarded it as a race of *M. africana*. But in Sclater's "Systema" the name was very wrongly used for a race of *M. fischeri*, and this error has been perpetuated by several authors.

Mirafra angolensis is a species related to *M. apiata* (Vieillot) and *M. africana* Smith, but cannot be confused with them. From beneath, *angolensis* resembles *africana*, but the two outer rectrices have their outer webs white, and on the outermost this white even extends onto the inner web. From above,

[1] 1902, The birds of Africa, vol. 3, p. 68.

[2] 1904, Die Vögel Afrikas, vol. 3, p. 345.

angolensis looks more like *apiata*, with inner secondaries finely barred near their tips. But its bill is longer, crown and middle of back are more blackish, and the lighter coloration on nape, back, and rump is less grayish, more of a deep rufous. The white on outer rectrices again aids in recognizing *angolensis*.

Six males of *angolensis* have wings 85–88 mm., tails 49–52, culmen to base 19–20.5, metatarsus 26–29. Five females have wings 76–82 mm., tails 44–47.

In the main this is a highland lark, although Lynes found it at Dilolo at only 3400 feet. In Angola it lives at 5000 to 6000 feet, and in Marungu Rockefeller and Murphy collected it at Ketendwe, 6050 feet, at Kasangala, 7050 feet. Gaston de Witte also secured five specimens for the Congo Museum at Kasiki, Marungu, about 7200 feet. It may yet be found to occur on the Biano Plateau.

Little is recorded of its habits except that it is a bird of open grasslands, and may be expected to breed between September and January, in the early part of the rains.

Mirafra africana tropicalis Hartert

Mirafra africana tropicalis HARTERT, 1900, Novitates Zool., vol. 7, p. 45 (type locality: Bukoba, west shore of L. Victoria); 1907, Bull. Brit. Ornith. Club, vol. 19, p. 92 (Buguera; Fort George); 1919, Novitates Zool., vol. 26, p. 164 (between Kagera R. and L. Kivu; Kisenyi). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 341 (Kisenyi). GLYDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 76 (Ngoma). SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 42 (in part. Urundi: Kisenyi). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 311. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 22, p. 123; 1933, idem, vol. 22, p. 377 (Kivuruga); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 87 (Munagana; Burambi); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 336 (Kibingo); 1943, idem, vol. 37, p. 269 (Gabiro). FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 198.

Spilocorydon hypermetrus HARTLAUB, 1891, Abhandl. Naturwiss. Ver. Bremen, vol. 12, p. 25 (Buguera).

Mirafra hypermetra SHELLEY, 1902, The birds of Africa, vol. 3, p. 48, pl. 17, fig. 2 (in part. Buguera). REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 346 (in part. Buguera).

Mirafra tropicalis SALVADORI, 1914, Ann. Mus. Zool. Napoli, new ser., vol. 4, no. 10, p. 26 (Kagera Valley).

? *Hierapterina Clot. Bekii*, EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, pp. 225, 232 (Kavalli).

DISTRIBUTION OF THE SPECIES: Cape Province to Mt. Kenya, Darfur, and French Guinea, but never in forested country, and

absent from savannas of the Uelle and Ubangi. From the coast of Angola, however, it extends north to the Loango Coast and inland to the Batéké Plateau and Kasai.

Thirteen geographic races were recognized in Sclater's "Systema," and more than six have been proposed since 1930. It would be superfluous here to discuss them all, and I shall confine myself mainly to those occurring in or near the Congo.

Mirafra africana tropicalis is not strikingly different from *M. a. africana* Smith of eastern Cape Province, but more boldly streaked with blackish above. It is considerably more rufous above than *M. a. dohertyi* Hartert, especially on the bases of the feathers of the hind crown. *M. a. dohertyi* is found in the highlands of Kenya Colony from Kikuyu to Lumbwa and Eldoret, while *tropicalis* replaces it from the Amala River and Kavirondo around the northern shore of Lake Victoria to Karagwe and Lake Kivu, Uganda north to Masindi, and the highlands west of Lake Albert.

Around the southern base of Ruwenzori, the upper Semliki Valley, and in the Rutshuru Valley the blackish streaking of the upperparts is broader, and the underparts are less tinged with rufous. This slightly differentiated but valid subspecies is *M. a. ruwenzoria.*

A still darker race has been found in a small area of the southeastern Congo, near the upper Lufupa River. This is *M. a. chapini,* allied perhaps to *M. a. nigrescens* Reichenow of the Ukinga highland north of Lake Nyasa and *M. a. nyikae* Benson[1] of the plateau northwest of that same lake.

In tropical Africa this species is mainly restricted to the highlands, though it may live at only 3000 feet near the bases of mountains in central Africa, or at 2000 feet in West Africa, where *M. a. henrici* Bates[2] was discovered at the base of Mt. Nimba. But there is one rather light-colored race, *M. a. occidentalis,* living at sea level along the coast of Angola, which was originally described as from the Gaboon. The type locality may seem questionable, but *occidentalis* is to be expected near the Congo mouth.

Until recently the species was believed to be absent from the Kasai, but the larks reported as *Mirafra fasciolata* by Lynes from Kilembe and Petianga really represent a race of *M. africana* and are probably close to *M. a. malbranti,* described from the grasslands of the French Congo.

[1] 1939, Bull. Brit. Ornith. Club, vol. 59, p. 85 (Nyika Plateau).

[2] 1930, Bull. Brit. Ornith. Club, vol. 51, p. 47 (Bossu, French Guinea).

In the open highlands of the eastern Congo the race *tropicalis* has been found up to elevations of 7600 feet, and it occurs in Urundi, Ruanda, on the north shore of Lake Kivu, and west of Lake Albert from Bogoro almost to Irumu. Specimens from the last-named area, the Lendu Plateau, are not so rufous as *tropicalis* is apt to be in the Kagera Valley near its type locality, but they are not dark enough for *ruwenzoria*. Four of Emin's specimens from Buguera, or Bogoro, misidentified by Hartlaub as *M. hypermetra*, came to the American Museum with the Rothschild collection. I too have collected *tropicalis* at Bogoro and between Bunia and Irumu, but could not find it down at Kasenyi on the lake shore.

This rather large, rufous-winged lark frequents pasture lands on plateaus where the grass is not very tall and is often found in pairs. It will alight readily on a stump or low tree and is accustomed to sing its sweet whistled notes, usually two to four in succession, from a perch. It does not flap its wings noisily while in the air.

Breeding probably takes place in the first half of the rains, or from April to June in the region north of the Equator. The nest is said to be placed under the shelter of a small tuft of grass and is half roofed over. Eggs are two to three, brownish white, with dark brown and blackish markings especially thick about the blunt end; dimensions approximately 24.5 by 16.5 mm.

Mirafra africana ruwenzoria Kinnear

Mirafra africana ruwenzoria KINNEAR, 1921, Bull. Brit. Ornith. Club, vol. 41, p. 139 (type locality: Mokia, 3400 ft., southwest of Ruwenzori). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 311. JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 781 (Toro; Mokia; Kigezi; adjoining parts of eastern Belgian Congo).

Mirafra tropicalis O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 311 (Mokia).

Mirafra africana LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 28 (Rutshuru).

Mirafra africana tropicalis SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 281 (Kalegela; Ivi R.; Lisasa); 1935, idem, vol. 27, p. 404 (Ruindi camp). VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 175 (Semliki Valley). SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 42 (in part. Rutshuru Plain).

DISTRIBUTION: Upper Semliki Valley, plains around the southern end of Ruwenzori, to the Rutshuru and Ruindi plains.

The validity of this race has recently been denied by Grant and Mackworth-Praed,[1] but the several specimens I collected at the south end of Ruwenzori and on the lower Rutshuru Plain do exhibit the characters claimed for it. The blackish striping of the upper surface is broader and the underparts are paler than in *tropicalis*. Its range, however, seems to be restricted to the immediate vicinity of Lake Edward. While Jackson and Sclater (1938) list *ruwenzoria* from Kigezi, I find that my own specimen from Kisolo in that same district of British Ruanda is nearer *tropicalis*, and even from Fort George on an arm of Lake Edward we have a specimen collected by Ansorge that is best assigned to *tropicalis*.

On all the level plains near Katwe, old Kasindi, and in the upper Semliki Valley these larks are very common, behaving and singing as already described for *tropicalis*. Even on the grassy southern slopes of Ruwenzori I never saw one higher than 4400 feet, above the new post of Kasindi, nor could I find any on the highland to the southwest of Lake Edward. In the Rutshuru Valley they seemed confined to the lower, drier section, north of Mai-na-Ivi, and I doubt if Arrhenius' specimen came from the post of Rutshuru, where the grass grows too high to suit the species.

In the stomachs of this lark and two of *tropicalis* I found only the remains of insects, including small termites in one case, and a naked caterpillar in another.

Mirafra africana chapini Grant and Mackworth-Praed

Mirafra africana chapini GRANT AND MACKWORTH-PRAED, 1939, Bull. Brit. Ornith. Club, vol. 59, p. 140 (type locality: Nasondoye, southwestern Katanga; also from Kanzenze). WHITE, 1948, Ibis, p. 137 (Mundwiji Plain; head of Kabompo River).

Mirafra africana nigrescens LYNES AND SCLATER, 1934, Ibis, p. 39 (Nasondoye).

Mirafra africana (*africana* > *nigrescens*) LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 73 (Biano Plateau).

Mirafra africana subsp? BENSON, 1939, Bull. Brit. Ornith. Club, vol. 59, p. 85 (Nasondoye).

DISTRIBUTION: From the Biano Plateau in the Katanga to the Mundwiji Plain, 40 miles northeast of Mwinilunga in Northern Rhodesia. Doubtless to be expected on other neighboring pla-

[1] 1939, Bull. Brit. Ornith. Club, vol. 59, p. 158.

teaus. The altitudinal range is from 3600 feet up to around 5000 feet.

Admiral Lynes's Biano specimens were overlooked when the race was first described, but Gaston de Witte had secured a male at Kanzenze, some 15 miles to the southeast of Nasondoye. In 1946 C. M. N. White obtained specimens of *chapini* on the Mundwiji Plain, but before that he had mistaken *Mirafra angolensis* for this race of *M. africana*. The wings of *chapini* measure from 87 to 102 mm., and the larger specimens are usually males.

This subspecies is duskier than any other form of *M. africana* except *nigrescens* and *nyikae*, which occupy highlands north and northwest of Lake Nyasa. It differs from most of the races by its generally darker back, more restricted dark markings on chest, and lack of dark streaking on the flanks. In a way its coloration recalls that of *Mirafra angolensis*, though without the variegated pattern and with upperparts more streaked. Its bill is much deeper than that of *angolensis*.

We may expect that additional specimens of *chapini* will be secured on the other highlands of the Katanga. It must be a bird of open pasture lands, with habits not unlike those of the other races.

Mirafra africana occidentalis (Hartlaub)

Megalophonus occidentalis HARTLAUB, 1857, System der Ornithologie Westafrica's, p. 153 (type locality: Gaboon).

Mirafra africana DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (Landana).

Mirafra africana occidentalis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 311 (Gaboon to Angola). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 27.

DISTRIBUTION: Coastal area of Angola south at least to latitude 15° S. and north supposedly to the Gaboon. Willoughby Lowe found it common at St. Paul de Loanda. But Hartlaub's type was received from Verreaux, and although Marche and Compiègne are supposed also to have collected it in the Gaboon, neither Falkenstein nor Petit found it on the Loango Coast. If Dubois had an example from Landana, I have looked for it in vain. Its actual occurrence at the Congo mouth seems questionable, therefore, and it cannot be expected to range more than a few miles in from the coast.

Hartert[1] examined Hartlaub's type and made sure it agreed

[1] 1907, Bull. Brit. Ornith. Club, vol. 19, p. 93.

with series from the coast of Benguella. *M. a. occidentalis* is relatively dull colored and narrowly streaked above, with rather pale buffy underparts. There are still paler races in dry southwestern Africa.

Mirafra africana malbranti Chapin

Mirafra malbranti CHAPIN, 1946, Bull. Brit. Ornith. Club, vol. 67, p. 7 (type locality: 30 km. south of Djambala, French Congo).

Mirafra fasciolata LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 73 (Kilembe; Petianga).

Mirafra fasciolata? WHITE, 1945, Bull. Brit. Ornith. Club, vol. 66, p. 14 (Angola and southern Congo).

DISTRIBUTION: Grasslands of the Batéké Plateau on the west of the middle Congo River, and probably in some of the short-grass plains of the Kasai District as well. The specimens collected by Lynes and Vincent in the Kasai are certainly not *M. fasciolata* (Sundevall). I have examined the male from Kilembe and find it somewhat darker on crown and back than three examples of *malbranti*, but it is spotted on the chest rather like an immature bird. Grant agrees that the Petianga specimen likewise represents a race of *M. africana* and must be rather closely related to *malbranti*.

The most striking character of *malbranti* is the dilution of its dark pigment, so that streaking is less marked than in any other race of *M. africana*. Rufous pigment, on the other hand, is well developed. The wings of three males collected by R. Malbrant in the region of Djambala and Ossele in the French Congo measure 92 to 95 mm.

From the neighboring parts of the Belgian Congo only two male specimens are known, and they may both be darker above than *malbranti*. They were collected by Lynes and Vincent on open "pastures" at Kilembe and Petianga in the western Kasai District, during October and November. That appeared to be at the end of their breeding season, but Vincent observed the courting flight of a male, shooting up repeatedly from the ground to about 30 feet, where it "burred" with its wings, gave a trisyllabic whistle, and came gliding down again with wings upraised and legs outstretched.

[*Mirafra africana gomesi* White]

Mirafra africana gomesi WHITE, 1944, Bull. Brit. Ornith. Club, vol. 65, p. 5 (type locality: Macondo district, eastern Angola).

Known thus far only from the Konkano Plain near Balovale and the Macondo district to the northward, *M. a. gomesi* might well be expected to range into Belgian territory near Dilolo. It is not quite so heavily streaked above as *chapini*, and a little more rufous on the chest, with blackish markings there as well. Indeed, if specimens from the Kasai District are found not to be identical with *M. a. malbranti*, they should certainly show considerable resemblance to the race *gomesi*.

KEY TO THE SPECIES OF *Pinarocorys*

Upper tail-coverts bright rufous ..... *P. erythropygia*
Upper tail-coverts blackish brown ..... *P. nigricans*

Pinarocorys erythropygia (Strickland)

Alauda erythropygia STRICKLAND, 1852, Proc. Zool. Soc. London, for 1850, p. 219, pl. 24 (type locality: Kordofan).

Mirafra erythropygia HARTERT, 1924, Novitates Zool., vol. 31, p. 39 (Bahr-el-Ghazal; Lado Enclave).

Pinarocorys erythropygia PITMAN, 1930, Bateleur, vol. 2, p. 61 (Bulakatoni in northwestern Uganda). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 103 (Mauda).

SPECIMEN: Faradje, immature male, May 2.

Iris dark brown; bill dusky brownish above, whitish below; feet brownish gray.

DISTRIBUTION: Interior of Sierra Leone, Gold Coast, and southern Africa, eastward to Kordofan, the White Nile, and Murchison Falls. In the Frankfurt Museum I saw one collected at Fort Crampel, Ubangi-Shari, in January by Schubotz, and two specimens have been taken in the Uelle District. J. M. Vrydagh writes me that he has collected this lark near Niarembe.

Schouteden's example from Mauda was secured in February, and it seems as though this rufous-rumped bush-lark visits the southern part of its range only between December and May, the drier half of the year. Butler believed that it nested from January to March in the Bahr-el-Ghazal, Pitman took a young bird not long out of the nest in northern Uganda on February 18, and Boyd Alexander found young at Ibi, Nigeria, in April.

There may be an off-season migration north to the southern edge of the desert, for Lynes saw only two individuals in Darfur, both in fresh plumage, on October 22. Two collected by Buchanan in mid-August in southern Aïr are just completing their molt.

During more than two years in the Uelle I noticed only two of these larks. The one collected was still in complete juvenile dress, with broad rufous outer edgings on the primaries and much rufous on their inner webs as well. It was walking in a cultivated field. The other, likewise at Faradje, was found near a freshly burned spot in the savanna, at the height of the dry season. It perched on the top of a small tree, raising its crest slightly, and was exceedingly shy. Butler[1] described the males during breeding time as rising from a perch on top of a tree, soaring aloft for 50 yards or more, singing beautifully, and soon descending again to the same tree.

My single specimen had eaten only insects, and Serle[2] found the same to be true of three he collected in Nigeria.

Pinarocorys nigricans (Sundevall)

Alauda nigricans SUNDEVALL, 1850, Öfvers. K. Svenska Vetensk. Akad. Förhandl., vol. 7, no. 4, p. 99 (type locality: Aapies R., Pretoria district, Transvaal).

Mirafra nigricans NEAVE, 1910, Ibis, p. 241 (Busanga on Lualaba R.; Lufupa R.).

Pinarocorys nigricans SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 318 (Katanga). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 74 (Dilolo). VERHEYEN, 1947, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 23, no. 10, p. 3 (Musosa). SCHOUTEDEN, 1949, Bull. Cercle Zool. Congolais, vol. 19, p. 16 (Leopoldville).

DISTRIBUTION: Zululand, Transvaal, and Damaraland, north to Moba on Lake Tanganyika, the Katanga, and the Kwango River.

The dusky bush-lark is usually considered a rather rare bird in South Africa, occurring in rocky places on hills as well as in native farmlands or open flats. In the southern Congo it is anything but common. In addition to Neave's records of an adult and a young male taken in the Upper Katanga on May 9 and October 26, Lynes in September secured a female "soon to breed" at Dilolo, on open ground which he called pasture. The Congo Museum has an adult female taken at Moba in the first half of June, another specimen which Schwetz brought from Wilhelm Falls on the Kwango River, and a third from Leopoldville. Brédo also collected this lark at Musosa, northeast of Lake Moero.

[1] 1907, Ibis, pp. 467–472.

[2] 1940, Ibis, p. 1.

Southern Congo records thus far seem to fall within the period between early May and the end of October, or in the drier half of the year. If, as Lynes supposed, breeding is under way at Dilolo in September, I suspect that it may begin somewhat earlier, and that *Pinarocorys nigricans* may nest in the northern half of its range, migrating southward around November. Most of the dates of occurrence in South Africa which I have gathered are between December and May. From Bulawayo, Southern Rhodesia, in late January, we have an adult molting its primaries and several immature examples all beginning to molt out of juvenal plumage. A nest has been reported, nevertheless, from Zululand in September,[1] built of grass blades and sunk in the earth at the base of a stump. It contained two greenish blue eggs, with hair lines of dark brown, measuring 24.5 by 15.5 and 24.1 by 15.5 mm.

[*Certhilauda albofasciata obscurata* Hartert]

Certhilauda albofasciata obscurata HARTERT, 1907, Bull. Brit. Ornith. Club, vol. 19, p. 83 (type locality: Bulu-bulu, Bihé district, Angola). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 74 (Missão de Luz in Angola).

This rufous, long-billed lark ranges from northern and eastern Cape Province to the Transvaal, the Kalahari, Damaraland, and Angola, and is divisible in six or more races. The northernmost and darkest, *obscurata*, is restricted mainly to southern and central Angola, but two adults and an immature bird were secured by Lynes in December at Missão de Luz, 140 miles west of Dilolo station. Thus there is a slight possibility that it may be found in the southwestern Lulua District of the Congo.

Heliocorys modesta bucolica (Hartlaub)

Miraffra bucolica HARTLAUB, 1887, Zool. Jahrb., vol. 2, p. 327 (type locality: Tomaya, southeastern Bahr-el-Ghazal; also from Kabayendi).

Mirafra bucolica SHELLEY, 1888, Proc. Zool. Soc. London, p. 28 (Tobbo).

Heliocorys modesta REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 363 (Kudurma). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 3, p. 262.

Georocaphus modestus EMIN, 1919, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 2, p. 489.

Mirafra cf. *strümpelli* GROTE, 1924, Jour. Ornith., p. 494 (Fort Crampel).

Heliocorys modesta bucolica BANNERMAN AND BATES, 1924, Ibis, p. 258.

[1] Roberts, 1940, The birds of South Africa, p. 194.

SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 326. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 103 (Mahagi Port).

Geocoraphus bucolicus EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 142 (Makraka).

SPECIMENS: Dungu, male, female, June 27. Faradje, male, female, October 8. Aba, two males, July 13, December 14; female, July 17. Garamba, male, July 24.

ADULTS: Iris dark brown; bill dusky brownish, with base of mandible light gray; feet light brown.

DISTRIBUTION OF THE SPECIES: From the vicinity of the Bahr-el-Jebel westward through hilly savanna country to northern Nigeria and Fouta Djalon. *H. m. modesta* (Heuglin) is a rather light-colored race occupying the Bahr-el-Ghazal Province and reported also from Redjaf, Kajo Kaji, and Wadelai. Along the watershed between the Nile and the Uelle basins, however, lives a noticeably darker race, *H. m. bucolica*, with wings measuring 77–85 mm. It extends a little way into the Uelle District, but of course does not reach the forest belt. Westward it ranges to the vicinity of the Ubangi River and southern Ubangi-Shari and eastward to the north end of Lake Albert.

In the highlands of northern Cameroon lives another slightly darker and larger race, *H. m. strümpelli* (Reichenow), with wings 82–90 mm. *H. m. giffardi* Hartert, ranging from Darfur to the northern Gold Coast Colony, is smaller again, wings 78–86 mm., and light colored like *modesta*. Finally there is another dark race, *H. m. nigrita* Grote, in the interior of Sierra Leone and Fouta Djalon.

Skins of *H. m. modesta* from the vicinity of Redjaf and from Chak-Chak in the Bahr-el-Ghazal Province are paler above and more narrowly streaked on the breast than *bucolica*, yet a specimen taken by Schouteden at Mahagi Port is of the dark-colored race. From there this small dark subspecies extends along the northern edge of the Congo to Fort de Possel on the bend of the Ubangi, where Schubotz collected two examples that I have seen in the Frankfurt Museum.

In the Uelle District one finds these larks only on or near rocky hills. We first saw a pair on the top of Mt. Ataramba, a few miles west of Dungu, where the short grass alternated with patches of bare rock and spiky aloe plants. They were more numerous in the vicinity of Aba and Garamba and sometimes seen

in parties of four or five, but only occasionally do they come down to the native plantations on the lower slopes of the hills. When pursued they may alight on stumps, but never the branches of trees. As they fly up, a weak call note, a hoarse "chit-chit," is often heard, but the song, a sweetly whistled "twee-twee," is given less often and usually while hovering in the air.

The species is non-migratory, and during the rainy season no other lark or pipit seemed to share its haunts. In December, on the other hand, we found *Anthus leucophrys*, *Anthus trivialis*, and *Motacilla flava* there. This seemed to be just the season when *Heliocorys* was breeding, whereas adults taken in June and July were not sexually active.

We found no nest, but that of the allied *giffardi* in Northern Nigeria on November 19 was described by Shuel[1] as merely a depression scraped in sandy clay amid short grass on top of a large rock. The one egg it contained was so thickly spotted with reddish brown as almost to hide the creamy white ground color; dimensions: 19.9 by 14.75 mm. Serle[2] found another nest in Nigeria with a single downy chick as late as March 2.

Of six stomachs of *bucolica*, three contained remains of small insects, whereas four held small seeds, often relatively hard.

KEY TO THE SPECIES OF *Eremopterix* OCCURRING IN OR NEAR THE CONGO

1. Throat black, a large white or whitish patch covering cheeks 2
   Throat whitish or buffy, sometimes with dusky spotting; cheeks similar to throat or slightly darker 4
2. Crown cinnamon brown, often grayer posteriorly; black of lower breast and abdomen restricted to a median stripe . . . . . *E. leucopareia*, ♂
   Crown black or black and white, with a white collar behind; black of underparts more extensive 3
3. A whitish spot in the middle of the black crown; back grayish brown . . . . . *E. verticalis*, ♂
   Crown entirely black, back mainly deep rufous . . . . . *E. leucotis*, ♂
4. Lesser and middle upper wing-coverts rufous, edged with pale buff or whitish . . . . . *E. leucotis*, ♀
   No rufous on upper wing-coverts, which are gray-brown with buffy edgings 5
5. A narrow superciliary stripe of cinnamon or pale rufous; black on underparts in only a narrow median stripe about 7 mm. wide . . . . . *E. leucopareia*, ♀

[1] 1938, Ibis, p. 237.

[2] 1943, Ibis, p. 420.

No cinnamon or rufous on supercilium, which is grayish or grayish buff; black on middle of lower breast and abdomen about 15 mm. wide.....
.....*E. verticalis*, ♀

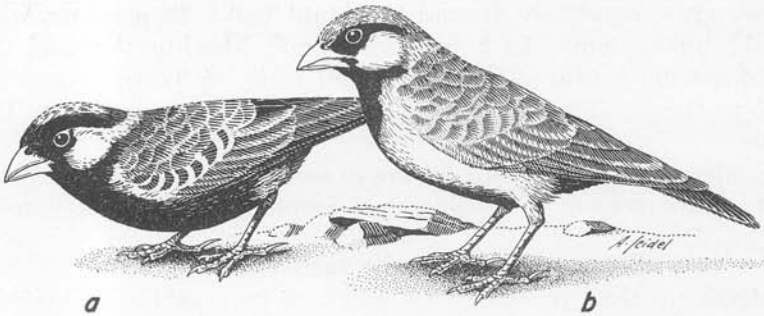

FIG. 4. A. *Eremopterix verticalis*, male. B. *Eremopterix leucopareia*, male.

Eremopterix leucopareia (Fischer and Reichenow)

Coraphites leucopareia FISCHER AND REICHENOW, 1884, Jour. Ornith. p. 55 (type locality: Klein Aruscha, Tanganyika Territory).

Pyrrhulauda leucopareia SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 42 (Ruzizi Valley).

DISTRIBUTION OF THE SPECIES: Mt. Moroto and the country west of Lake Rudolf south through Kenya Colony to Iringa in Tanganyika Territory and west to the Ruzizi Valley. Although common in the Kavirondo District, it does not occur on the northern or western shores of Lake Victoria. At Usambiro, southwest of the lake, Emin secured two examples, and from that region the range continues to the north end of Lake Tanganyika.

Grauer collected two males and a female at Usumbura for the Tring Museum, and four more in the Ruzizi Valley for the Vienna Museum. In mid-July of 1927 near Luvungi in the Ruzizi Valley I found a male in breeding condition, walking in a dry grassy plain recently burned over. The appearance of this brown-capped species is peculiarly sparrow-like. On the plains in East Africa they are seen in pairs or small parties, especially on roadsides and patches of bare ground. The preceding year I had taken another breeding male near Nairobi at the end of June, and examination of plumages confirms the indications of breeding during the dry season.

A nest found by Fischer[1] near Nguruman, Tanganyika Terri-

[1] 1884, Zeitschr. Ges. Ornith., p. 318.

tory, on June 21 was built on the ground amid short, scattered grasses, the stalks drawn together above it. The two eggs were pale grayish buff with numerous markings of brown, ochre, and violet gray, especially around the blunt end. Dimensions were 16–17 by 13 mm. In South Kavirondo MacInnes[1] found the chief nesting season to be in May and June, with eggs numbering two to three. The female incubates for longer periods than the male.

Sparrow-larks appear to eat many more seeds than insects, and in two stomachs of *E. leucopareia* I found only small grass seeds.

Eremopterix verticalis verticalis (Smith)

Megalotis verticalis A. SMITH, 1836, Report of the expedition for exploring central Africa, p. 48 (type locality: Orange R., South Africa).

Pyrrhulauda verticalis SHARPE AND BOUVIER, 1876, Bull. Soc. Zool. France, vol. 1, p. 309 (Pointe Noire on French Congo coast). REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 368.

Eremopterix verticalis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 330 (Angola to Loango). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 52 ("Congo valley").

DISTRIBUTION OF THE SPECIES: Central Cape Province and Orange Free State north to Damaraland, Bechuanaland, the coastal region of Angola, and the Loango Coast. The slightly paler birds of Damaraland have been separated as *E. v. damarensis* Roberts.[2]

This is another of the larks which may be expected only along the coast near the mouth of the Congo. Willoughby Lowe found the gray-backed sparrow-lark in flocks at St. Paul de Loanda, and Lucan many years ago collected it at Pointe Noire on the coast of the French Congo. On the other hand, a sight record by Mouritz (1914) in the southeastern Katanga attributed doubtfully to *verticalis* must have been based on some other species, possibly *E. leucotis smithi*, the only sparrow-lark known thus far from Northern Rhodesia.

Except in the breeding season, which comes in September in South Africa, these small larks flock together, living on very open ground. The nest is in a slight hollow beside a tuft of grass, lined with fine grass and sometimes a few horsehairs. Two to

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[1] 1933, Jour. East Africa Uganda Nat. Hist. Soc., nos. 47–48, p. 133.

[2] 1931, Ann. Transvaal Mus., vol. 14, p. 243 (Gobabis, Southwest Africa).

three eggs are laid, whitish with rather thick spotting of brown. Measurements by Ogilvie-Grant are 17.3 by 12.7 mm. and 17.8 by 12.7 mm.

[*Eremopterix leucotis melanocephala* (Lichtenstein)]

Alauda melanocephala H. LICHTENSTEIN, 1823, Verzeichniss der Doubletten, p. 28 (type locality: Nubia).

Pyrrhulauda leucotis REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 365 (Kudurma; Redjaf).

Eremopterix leucotis melanocephala HARTERT, 1915, Novitates Zool., vol. 22, p. 264 (Kudurma).

The chestnut-backed sparrow-lark, *E. leucotis* (Stanley), ranges from Senegal to Abyssinia and south through East Africa to the Zambesi Valley, the Transvaal, Bechuanaland, and Damaraland. It avoids not only the equatorial forests but also the high-grass savannas near them.

Of the four races into which it is divided, *melanocephala* occupies the arid and semi-arid countries from Senegal to the White Nile. Males usually have no black patches on the lesser wing-coverts. Emin took two specimens in November at Kudurma, a locality only a few miles outside our territory in the southeastern corner of the Bahr-el-Ghazal. These two birds are now in the American Museum, and they are best referred to *melanocephala*, having no distinct black wing-coverts. But a male collected by Butler at Mongalla in February was *E. l. leucotis*. It is just possible that this northeastern race may also wander occasionally to the north end of Lake Albert.

[*Eremopterix leucotis smithi* (Bonaparte)]

Pyrrhulauda smithi BONAPARTE, 1850, Conspectus avium, vol. 1, p. 512 (type locality: South Africa).

? *Pyrrhulauda verticalis* MOURITZ, 1914, Ibis, p. 32 (Luapula R. near Kalonga).

The South African race resembles typical *leucotis* in having black lesser wing-coverts in males, but its bill is much larger. Another large-billed race, *E. l. madaraszi* Reichenow, occupies East Africa, but seems nowhere to approach the Congo. The differences between *madaraszi* and *smithi* are not great, though Vincent[1] has pointed out that males of the former are darker

[1] 1935, Ibis, p. 29.

chestnut on the back and females more blackish on the back and on the chest.

Eremopterix leucotis smithi ranges from the Transvaal and the Zululand border northward at least to Fort Jameson and the lower Kafue River in Northern Rhodesia. So it is possible that the sparrow-lark seen by Mouritz along the Luapula River near Kalonga was really of this species.

Calandrella cinerea saturatior Reichenow

Calandrella cinerea saturatior REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 378 (type locality: Kondeland, north of L. Nyasa). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 75 (Kabare; Ruindi and Rutshuru plains). SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 41 (Ishangi). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 87.

Tephrocorys cinerea NEAVE, 1910, Ibis, p. 240 (upper Lualaba R.; between Dikulwe and Lualaba rivers).

Tephrocorys cinerea saturatior SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 333. JACKSON, 1938, The birds of Kenya Colony and ... Uganda, vol. 2, p. 799 (Kigezi). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 112 (Biano Plateau; Sandoa; Mato; Banda; Leopoldville). GRANT AND M.-PRAED, 1939, Bull. Brit. Ornith. Club, vol. 59, p. 137. VINCENT, 1946, Ibis, p. 469 (Elisabethville).

Tephrocorys cinerea cinerea FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 40 (Katanga; eastern Belgian Congo).

DISTRIBUTION OF THE SPECIES: Cape Town to Leopoldville on the Congo River, the Kasai District, Lake Edward, highlands of East Africa, and Abyssinia. *C. blanfordi* Shelley of northernmost Abyssinia, British Somaliland, and western Arabia seems no more than a very pale race of *C. cinerea*, and it has even been argued with good reason that *C. brachydactila* (Leisler) and its several forms, ranging from Morocco and southern Europe to Mongolia, are merely northern subspecies of *cinerea*.[1]

Calandrella cinerea cinerea (Gmelin), described from the Cape of Good Hope, has a rather deep chestnut crown and fairly dark brownish upperparts. It is not certain that *anderssoni*, named from Damaraland by Tristram, can be distinguished, and so *cinerea* seems to extend on the east to Kenya Colony. There may be a very pale race breeding near the coast of Southwest Africa

[1] Meise, 1933, Mitt. Zool. Mus. Berlin, vol. 19, pp. 34–42; Hartert and Steinbacher, 1933, Die Vögel der paläarktischen Fauna, suppl. vol., pt. 2, p. 104.

to which the name *C. c. spleniata* (Strickland) would apply,[1] but similarly pale examples occur now and then in other parts of South Africa. That *spleniata* is a distinct species does not seem possible.

Despite the considerable variation in color shown by this red-capped lark, its representatives from Bulawayo and Angola to the southern Congo, highlands north of Lake Nyasa, and the region between Lake Victoria and Lake Edward are almost always deeper in color than typical *cinerea*, more tinged with deep rufous on the upperparts. These deserve separation as *C. c. saturatior*.

In *C. c. erlangeri* (Neumann) of southern Abyssinia the blackish markings are emphasized, and the forehead and patches at sides of chest are blackish. *C. c. fuertesi* (Friedmann)[2] is supposedly a still darker race from Simien Province.

In the southern and eastern Congo *C. c. saturatior* appears to be restricted mainly to very open grasslands. To the localities already published I may add Luluabourg in the Kasai, where Father Callewaert secured three adults in late September and early February. I doubt whether they are merely breeding visitors to the southern Congo, as Lynes (1938) suggested. In the Katanga Neave found flocks in May, and Lynes's dates extend from August to November.

On the north shore of Lake Edward between Kasindi and Katwe I collected a female in January. Gyldenstolpe took a specimen on the south shore of the same lake in April, and Grauer got one for the Tring Museum near the eastern Kivu Volcanoes on August 11. So they would seem to be resident in the eastern Congo too.

The red-capped lark usually requires very open ground with few or no trees, and it is surprising that it should reach Leopoldville. In the Kasai it dwells in very open meadows, and in the Katanga on the barren plateaus up to 5200 feet. In British Ruanda it may ascend to 6500 feet, but the shores of Lake Edward near 3000 feet are also acceptable.

During the breeding season, which comes in the driest months or presumably toward July and August in the southern Congo,

[1] See Austin Roberts, 1926, Ann. Transvaal Mus., vol. 11, p. 224; 1928, idem, vol. 12, p. 317; 1935, idem, vol. 16, p. 124; and R. M. de Schauensee, 1932, Proc. Acad Nat. Sci. Philadelphia, vol. 84, pp. 185, 186.

[2] 1932, Proc. Biol. Soc. Washington, vol. 45, p. 163.

these larks are seen in pairs, the male strutting about with crest raised or singing rather sweetly well up in the air. In the off season small parties or flocks are formed. The nest, in other regions of Africa, has been found to be a small cup of dry grass usually placed in a slight depression in the ground, sometimes sheltered by a tuft of grass. The eggs are whitish or pale bluish heavily spotted or mottled with brown and purplish gray, 20–23 by 14–16.5 mm.; usually two in a set.

FAMILY **MOTACILLIDAE**. PIPITS, LONG-CLAWS, WAGTAILS

KEY TO THE GENERA OCCURRING IN THE CONGO

1. Tail long, almost equalling wing or longer; upperparts not streaked, but gray, green, or black, rarely brownish in adults..... *Motacilla* (p. 86)
   Tail generally shorter than wing; upperparts brownish, often streaked or spotted with blackish; chest frequently streaked or spotted.....2
2. Feet very large, hind toe with claw at least as long as metatarsus; breast yellow or light red, usually with a black crescent on chest..... ..... *Macronyx* (p. 81)
   Feet not so large, hind toe with claw shorter than metatarsus; breast buff or whitish (brownish pink in only one species) and often with dark streaks ..... *Anthus* (p. 58)

KEY TO THE SPECIES OF *Anthus* LIKELY TO OCCUR IN OR NEAR THE CONGO

1. Only three of the outer primaries showing emargination of outer web....2
   Four of the outer primaries with emarginate outer web.....8
2. Very small, wing less than 68 mm., tail less than 45 mm. long. *A. brachyurus*
   Larger, wing exceeding 70 mm., tail more than 45 mm. long.....3
3. Hind claw shorter than hind toe without claw..... *A. trivialis*
   Hind claw longer than hind toe without claw.....4
4. Flanks as well as breast conspicuously streaked with blackish; bill small, culmen to base usually less than 16 mm..... *A. cervinus*
   Breast often streaked or spotted with blackish, but flanks never distinctly streaked; culmen to base exceeding 16 mm.....5
5. Color above pale brownish with obscure dark streaks; chest very lightly spotted or streaked, if at all; tail 69–76 mm., with white areas on outer rectrices..... *A. campestris*
   Color above dark brown or else heavily streaked with blackish; chest more distinctly streaked or spotted; if outer rectrices have white areas, the tail measures only 56–67 mm.....6
6. Crown and back with distinct blackish streaks.....7
   Crown and back usually uniform brown or blackish brown, with at most a suggestion of dark mottling, especially on crown.....9
7. Light areas on outer rectrices white; upperparts rather light brown or rufous brown with dusky streaks; dark chest markings of moderate size..... *A. richardi*
   Light areas on outer rectrices pale brownish; upperparts dark brown

heavily streaked with black; chest very heavily marked with black.. ..... *A. latistriatus*

8. Upperparts not streaked with blackish, though feather centers, especially on crown, may be blackish; hind claw usually over 10 mm. long....9
   Crown and back distinctly streaked with blackish; hind claw more distinctly curved, usually less than 10 mm. long.....10
9. Metatarsus usually less than 30 mm. long; underparts generally with a distinct wash of buff..... *A. leucophrys*
   Metatarsus usually more than 30 mm. long; underparts with little if any buff..... *A. pallidiventris*
10. Smaller, wing length less than 79 mm..... *A. caffer*
    Larger, wing length exceeding 79 mm.....11
11. Upper and under wing-coverts without yellow; dark streaking of chest does not extend down the flanks..... *A. similis*
    Under wing-coverts distinctly washed with greenish yellow, especially on "axillaries"; lesser upper coverts and outer webs of primaries also margined with yellowish..... *A. lineiventris*

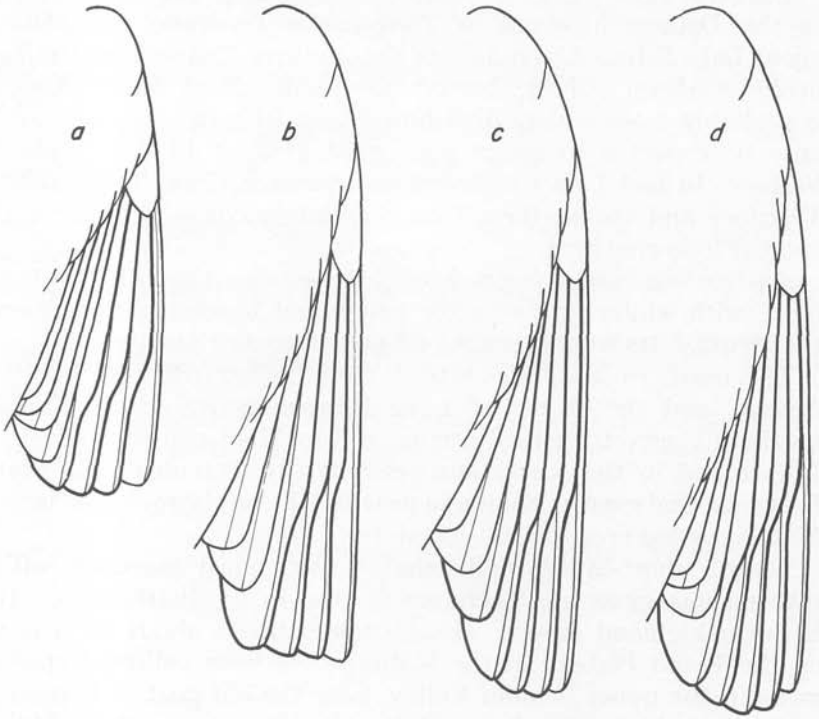

FIG. 5. Wing tips of four species of *Anthus*, to show emargination of outer webs of primaries. A. *A. brachyurus*. B. *A. richardi*. C. *A. leucophrys*. D. *A. similis*.

Anthus brachyurus leggei Ogilvie-Grant

Anthus leggei OGILVIE-GRANT, 1906, Bull. Brit. Ornith. Club, vol. 19, p. 26 (type locality: Mokia, southeast of Ruwenzori); 1910, Trans. Zool. Soc. London, vol. 19, p. 314, pl. 13, fig. 4. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 347 ("Ruwenzori"; plains about L. Edward). LYNES, 1934, Jour. Ornith., Sonderheft, p. 138. LYNES AND SCLATER, 1934, Ibis, p. 39 (Biano Plateau; Missão de Luz). CHAPIN, 1935, Bull. Cercle Zool. Congolais, vol. 12, p. 70 (near Bolobo). JACKSON, 1938, The birds of Kenya Colony and ... Uganda, vol. 2, p. 824.

Anthus brachyurus leggei CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 338 (upper Semliki Valley; Lower Rutshuru Plain; Kasai District; Kunungu). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 88; 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 318 (Kunungu); 1940, Bull. Cercle Zool. Congolais, vol. 16, p. 74.

Anthus brachyurus (*brachyurus* > *leggei*) LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 75 (Luluabourg; Petianga; Banda).

DISTRIBUTION OF THE SPECIES: Natal and Zululand north to the Dabaga highland in Tanganyika Territory, the plains about Lake Edward, savannas of the southern Congo, and Mouila in the Gaboon. *A. b. brachyurus* Sundevall of South Africa is probably more widely distributed than hitherto supposed and may be expected to range northward at least to the Zambesi Valley. In fact Lynes regarded his specimens from Tanganyika Territory and the southern Congo as intermediate between this and the following race.

Anthus brachyurus leggei is slightly smaller than the typical form, with whiter ground color below and blacker markings on the breast. Its wing measures 62–66.5 mm., tail 34–40 mm.

This northern subspecies extends from the lower Kagera Valley, Ankole, and the shores of Lake Edward across much of the southern Congo to central Angola and to Mouila in the Gaboon. It is found in the Kasai District north to Petianga near Port Francqui, and even at Kunungu near Bolobo on the middle Congo Maclatchy has recently taken it in the Gaboon.

Legge's short-tailed pipit inhabits very open meadows with rather short grass and therefore is local in its distribution. It is not a highland species, though found up to about 5000 feet on the Biano Plateau in the Katanga. I have collected specimens in the upper Semliki Valley, near the old post of Kasindi, and in the lower Rutshuru Plain. Kunungu near the middle Congo River, where Schouteden's native collector secured one example in 1926, is less than 1500 feet above sea level. Lynes

found this pipit at three localities in the Kasai, always in short grass "pasture," and reported that its breeding season came in the first half of the rains, from about November to February. At this time, in southwestern Tanganyika Territory, he noted their behavior as including "an aerial cruise with small song."[1]

Near the shores of Lake Edward I found the birds feeding singly or in pairs, invisible while in the grass, and flying strongly when forced to take wing. The whitish areas on their outermost rectrices can then be made out; otherwise they might almost be mistaken for some large *Cisticola*. Never do they alight on a bush, but drop down again near some tuft of higher grass or at the border of a strip of unburned grass or close to a termite hill with a few bushes on it. There on the Equator the breeding season seemed scarcely to have begun in January. In the stomachs I noted only the remains of small insects.

Nests found by Lynes were on the ground at the base of a tussock of grass. One contained two young, the other three eggs. The eggs were yellowish white, marked all over with straw yellow spots, dots, and freckles, and with a few larger clouds of the same color and of purplish gray, the markings all soft edged. Dimensions: 15.4–16 mm. by 12.6–13 mm.

[*Anthus caffer* Sundevall]

Anthus caffer SUNDEVALL, 1850, Öfvers. K. Svenska Vetensk. Akad. Förhandl., vol. 7, no. 4, p. 100 (type locality: Caffraria superiore, i.e., Mohapoani, Witfontein Mts., west Transvaal).

The little tawny pipit is mentioned here because its range is now known to extend so far north that it may possibly reach the southern Congo border. It bears a deceptive resemblance to *Anthus brachyurus*, but its tail is slightly longer, measuring 44–52 mm., and four of its outer primaries show emargination of the outer web.

Anthus caffer caffer ranges from the Transvaal and Bechuanaland north to Southern Rhodesia, the Mzimba district of Nyasaland, and the Benguella Province of Angola, where Ansorge collected half a dozen specimens in several different localities. One might therefore hope to find it in the Katanga, especially as there is an East African race, *A. c. blayneyi* Van Someren, slightly smaller and lighter in color, extending from the country

[1] Lynes, 1934, Jour. Ornith., Sonderheft, pp. 72, 73, pl. 15, fig. 41.

just east of Lake Victoria to southern Ukamba. *A. c. australo-abyssinicus* Benson[1] of southern Abyssinia resembles *blayneyi* but is streaked farther up on the throat.

The behavior of *caffer* differs markedly from that of *brachyurus*, for it lives in short grass savannas with many fair-sized trees, perches in these frequently, and even sings as it sits motionless on a bough.

Anthus trivialis trivialis (Linnaeus)

Alauda trivialis LINNAEUS, 1758, Systema naturae, ed., 10, vol. 1, p. 166 (type locality: Sweden).

Anthus arboreus HARTLAUB, 1891, Abhandl. Naturwiss. Ver. Bremen, vol. 12, p. 17 (Buguera). EMIN, 1927, *in* Stuhlman, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 225 (Kavalli).

Anthus pratensis OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127 (upper Kemo R.).

Anthus trivialis EMIN, 1894, Jour. Ornith., p. 163 (Ndussuma). SHELLEY, 1900, The birds of Africa, vol. 2, p. 299 (Kudurma). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (Ituri). NEAVE, 1910, Ibis, p. 238 (Kambove). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 313 (Mubuku Valley, east Ruwenzori). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 280 (Beni). SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 40 (northwest of L. Tanganyika; Irumu). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 70 (upper Kemo R.).

Anthus trivialis trivialis SCLATER AND M.-PRAED, 1918, Ibis, p. 614 (Yei; Mt. Baginzi). GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 9. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 346. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 104 (Mauda; Dika; Kotili; Buta), 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 89 (Nzulu); 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 318 (Bunia; Tukpwo; Bambesa); 1942, idem, vol. 36, p. 336 (Rutegama; Astrida). CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 338.

SPECIMENS: Ngayu, male, December 9; immature, December 13. Gamangui, immature female, February 18. Nzoro, female, April 19. Faradje, female, March 11; immature female, November 17.

ADULTS: Iris dark brown, bill dark gray with basal half of mandible pinkish, feet very pale pinkish.

DISTRIBUTION OF THE SPECIES: Breeds in Europe and Asia from the Pyrenees and Norway eastward to the upper Lena River and the Altai Mountains. *A. t. sibiricus* Sushkin lives east of the Urals, and is slightly lighter and more brownish than the

[1] 1942, Bull. Brit. Ornith. Club, vol. 63, p. 12 (30 miles south of Yavello).

typical race, with wings averaging a little shorter. *Anthus hodgsoni* Richmond is almost like a race of *trivialis*, breeding farther east in Asia. *A. t. trivialis* of Europe migrates southward into Africa, wintering both in the regions near the Mediterranean and in tropical Africa, some going south as far as the Transvaal.

In the Congo the tree-pipit winters in fair numbers in the savannas north and east of the equatorial forest and even penetrates to clearings near the northern margin of the forest. But there are no records thus far from the Lower Congo or Kasai, and most of the migrants that cross the Equator pass to the east of the forest. A few examples have been collected in the upper Katanga, and four were secured by Rockefeller and Murphy in Marungu, up to an altitude of 6050 feet. Grauer took two at about 6500 feet, northwest of Lake Tanganyika; and at Kalongi, 7000 feet, on west Ruwenzori I saw tree-pipits frequently in December about the cultivated ground.

Within our limits the species is seen mainly from the end of October to March. At Avakubi in the Ituri I noted the first arrival in 1913 on October 25, but Jackson's earliest date in Uganda was October 8. At Nzoro in the Uelle an example was taken on April 19, a rather late date.

Though it feeds on the ground, this pipit is very apt to fly up when alarmed and perch on a bough. It rests on trees or bushes far more often than any of the other pipits in the Congo, and complete silence is the rule. In two cases stomachs held pieces of insects, but one had small seeds in addition.

Anthus cervinus (Pallas)

Motacilla cervina PALLAS, 1811, Zoographia Rosso-Asiatica, vol. 1, p. 511 (type locality: Siberia).

Anthus cervinus EMIN, 1892, Zool. Jahrb., vol. 6, p. 148 (L. Albert) REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 311 (Redjaf; Tunguru on L. Albert). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 81, fig. 24.

Anthus rufogularis SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 105; 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 318. CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 338.

DISTRIBUTION: The red-throated pipit breeds from Scandinavia to Kamchatka, occurring accidentally in Alaska. It migrates south to the East Indian islands and the northern half of

Africa, reaching Southern Nigeria, the southern Anglo-Egyptian Sudan, and the Morogoro district of Tanganyika Territory.

During the northern winter this pipit is common in Kenya Colony, and while there are no records from Uganda, Emin is credited with having obtained it at Redjaf and at Tunguru near Mahagi. A single example was taken in May, 1940, in the northern Congo at Buta by Brother J. Hutsebaut, and his identification is confirmed by J. M. Vrydagh.

Adults in full dress are easily recognized by tawny reddish throat and chest, but in autumn *A. cervinus* resembles *A. trivialis* more closely. The hind claw of the former is, however, always longer and less curved, and its whole upperparts are more boldly streaked with black, right down to the upper tail-coverts.

[*Anthus campestris campestris* (Linnaeus)]

Alauda campestris LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 166 (type locality: Sweden).

Anthus campestris campestris CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 338.

The typical race of the tawny pipit breeds in Europe, North Africa, and Asia Minor, and migrates south in Africa to the Gambia, Northern Nigeria, Darfur, and occasionally to Tsavo in Kenya Colony. There is even one exceptional record from Serenje, Northern Rhodesia, on July 11.[1]

If it may be expected at all in Congo territory, the north end of Lake Albert is the most likely place.

Anthus richardi lacuum Meinertzhagen

Anthus rufulus lacuum MEINERTZHAGEN, 1920, Bull. Brit. Ornith. Club, vol 41, p. 22 (type locality: Lake Naivasha, Kenya Colony).

Anthus rufulus O.-GRANT, 1908, Ibis, p. 281 (Mfumbiro Volcanoes).

Anthus rufulus cinnamomeus REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 340 (Ruanda; L. Mohasi). SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 41 (Urundi; Usumbura; Ruzizi Valley; Ishangi; Kisenyi).

Anthus nicholsoni LÖNNBERG, 1917, Arkiv. Zool., vol. 10, no. 24, p. 28 (Rutshuru). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 280 (in part. Luvungi; Kibati; Molekera; Lisasa).

Anthus richardi lacuum MEINERTZHAGEN, 1921, Ibis, pp. 656, 657 (north end of L. Tanganyika; between Lakes Edward and Kivu). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 80 (Ngoma; Burunga;

[1] Pitman, 1934, A report on a faunal survey of Northern Rhodesia, p. 235.

Kabare). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 343. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 104 (Djalasinda); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 88 (Nzulu; Bitashimwa; Nyabirehe, 2400 m.; Kibumba; Runyoni; Bweza); 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 318 (Kwamouth; Beni; Gabiro; Kibingo in Ruanda; Astrida; Karambi; Bimba; Rutegama in Urundi); 1942, idem, vol. 36, p. 336; 1943, idem, vol. 37, p. 269. CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 338 (L. Edward; L. Kivu; Djalasinda near Mahagi; Ruanda; Luluabourg; Petianga; Kwamouth). FRIEDMANN, 1937, Bull. 153, U. S. Natl. Mus., pt. 2, p. 254. FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 297. JACKSON, 1938, The birds of Kenya Colony and ... Uganda, vol. 2, p. 818 (Kigezi; Katwe). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 75 (Petianga).

Anthus reichardi lacuum SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 22, p. 122 (Ngoma; Kisenyi; Lulenga).

DISTRIBUTION OF THE SPECIES: South Africa to the southern and eastern savannas of the Congo, northeast Africa, and highland savannas in the Cameroon. From Africa the species extends into Asia as far as Siberia, northern China, India, and the Malay Peninsula, also the Philippines and the East Indies. Even *Anthus australis* Vieillot of Australia is possibly conspecific, but I am not yet convinced by Rensch's conclusion[1] that *A. novaeseelandiae* (Gmelin) of New Zealand should become the nominate race of the species as a whole. Four outer primaries of *novaeseelandiae* show emargination of their outer webs, and this may be an important character.

There appear to be about nine races of *Anthus richardi* Vieillot in Africa, differing mainly in slight details of coloration. *A. r. cinnamomeus* Rüppell occupies the Abyssinian plateau and perhaps the eastern Sudan; *A. r. annae* Meinertzhagen, Somaliland and southern Arabia; *A. r. lynesi* Bannerman and Bates, Darfur and the Banso Mountains of Cameroon; *A. r. camaroonensis* Shelley, Cameroon Mountain; *A. r. bocagei* Nicholson, southern Angola and Damaraland; *A. r. rufuloides* Roberts,[2] South Africa to Nyasaland and Rhodesia. *A. r. lichenya* Vincent is restricted to Nyasaland.

Anthus richardi lacuum ranges from the coast of East Africa (Kenya Colony to the Zambesi mouth) inland to the Lado district, the savannas of the eastern Congo and those of the lowlands of the southern Congo west to Kwamouth. It has been said to

[1] 1931, Mitt. Zool. Mus. Berlin, vol. 17, pp. 605, 606.

[2] 1936, Ostrich, vol. 7, p. 111 (Grahamstown, Cape Province).

reach Northern Rhodesia and the Vipya Plateau, but individuals from the highlands of the southeastern Congo are darker, and I have separated them as *A. r. katangae.* Specimens of *lacuum* from the Semliki Valley and the Kivu District have wings 83–90.5 mm. Five examples collected by Schouteden at Djalasinda northwest of Lake Albert, while colored like *lacuum,* have wings only 80–86 mm. A few skins from the highlands of the Kivu and Ruanda are unusually dark above and rufous buff below. The few specimens I have examined from Luluabourg, Petianga, and Kwamouth are not separable from *lacuum.*

This species is unknown in the Lower Congo or Ubangi. From the Uelle there is just one record at Buta, by Brother Joseph Hutsebaut. In the grasslands of the Kivu it is one of the common pipits, found walking on cultivated ground and along roadsides, often in pairs. Occasionally one may perch on a low bush. The male during nesting time gives a simple song while circling rather high in the air. From about 1200 feet in the Middle Congo, and 3000 feet around Lake Edward, this pipit ranges up to 6500 feet or more in the grassy highlands west of the Albertine Rift and about the bases of the Kivu Volcanoes.

In the southern Congo Lynes found evidence of breeding only at the end of the dry season. Near the Equator the season of reproduction must be more prolonged. I took males with gonads enlarged in the region of Lake Edward in the second half of January and in early March, while Belcher found nests at Entebbe, Uganda, in May and June. The nest was described by Jackson[1] as carefully concealed under an overhanging tuft of grass, constructed of dry grasses with a lining of rootlets. He recorded clutches of three eggs, pale bluish white, heavily streaked throughout with rather pale brown. Dimensions: 20.5 by 16 mm. and 20 by 15.5 mm.

Anthus richardi katangae Chapin

Anthus richardi katangae CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 339 (type locality: L. Musolo, eastern Lulua District; also from Kinda and Elisabethville). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 75 (Nasondoye; Biano Plateau). SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 318. WHITE, 1946, Ibis, p. 508 (Congo border near Mwinilunga); 1946, Bull. Brit. Ornith. Club, vol. 67, p. 9.

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[1] 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 820.

Anthus rufulus NEAVE, 1910, Ibis, p. 239 (between Dikulwe and Lualaba rivers, 5500 ft.; Ruwe, 4500 ft.).

Anthus rufulus raaltenii SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 284 (Elisabethville).

DISTRIBUTION: Known only from the highlands of the Upper Katanga and adjacent portions of the Lulua District. No example of the species seems yet to have been taken on the Marungu highlands.

This dark-colored race may be characteristic of a highland area, but certainly comes down to about 3000 feet at Kinda, where one specimen was collected by Count de Baillet-Latour. It is found from there up to the top of the Biano Plateau and may be expected to extend into Northern Rhodesia.

In the coloration of its upperparts it is darker than *lichenya* of the highlands of southern Nyasaland, and more or less intermediate between *A. r. lacuum* and *A. latistriatus* of the Kivu District. Wings of four specimens of *katangae*, including both sexes, measure 82.5–91 mm., so they resemble both *lacuum* and *lichenya* in size. In habits *katangae* is probably similar to *lacuum*, despite the statement by Neave that it was to be seen in comparatively dense savanna woods as well as in open country. He may have confused *A. similis nyassae* with it.

Anthus latistriatus Jackson

Anthus latistriatus JACKSON, 1899, Ibis, p. 628 (type locality: Mumias, Kavirondo). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 340 (Rugege Forest; northwest of L. Tanganyika). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 341, footnote. CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 340 (L. Edward; west of Ruzizi Valley, 7000 ft.). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 88 (Kabare).

Anthus richardi camaroonensis MEINERTZHAGEN, 1921, Ibis, p. 657 (130 km. west of L. Tanganyika).

Anthus rufulus subsp. VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 180 (south Ankole; Kivu District).

Anthus latistriata VAN SOMEREN, 1932, Novitates Zool., vol. 37, p. 337.

? *Anthus similis latistriatus* JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 816 (in part).

DISTRIBUTION: Kavirondo District, the vicinity of Lake Edward, and some of the grassy highlands in the Kivu District, especially those to the northwest of Lake Tanganyika.

Sclater (1930) regarded the type of *latistriatus* as a young pipit

of some form very like *A. similis nyassae*, but Van Someren (1932) suspected that it might be a valid species allied to *A. richardi*. Although Jackson and Sclater (1938) continue to treat *latistriatus* as a race of *similis*, Kinnear has assured me that the type has only three emarginate primaries, and that a female from Katwe that I sent him agreed very closely with it in size and color, after due allowance for the worn plumage of the type.

At all events there is a pipit in the eastern Congo, from the southern base of Ruwenzori to the highlands west of Uvira, which looks like an exceedingly dark race of *A. richardi*. Not only are its upperparts very dark brown with centers of feathers blackish, but it is broadly streaked with black on the breast and heavily tinged with rufous brown below. The light patches on outer rectrices are pale brownish, not white. Its wings measure 87–98 mm., tail 57–69 mm., the bill and metarsus being of much the same size as in *A. r. lacuum*. The external emargination of the primaries is the same as in *richardi*, so that *latistriatus* might be regarded as a race of *richardi* if it did not occur sometimes in exactly the same places as *A. r. lacuum*. It is not *A. r. camaroonensis*, for the latter has the feather edgings over the whole upperparts of a more grayish brown.

Perhaps *latistriatus* breeds only in the highlands above 6000 feet, where it is found in grassy situations and behaves exactly like *lacuum*. Yet I have collected an adult female at Katwe on the northern shore of Lake Edward on January 21, and an adult male near Kabare at the southern end of the same lake on May 14. These birds were both in non-breeding condition, and *A. r. lacuum* is a rather common resident in these two places.

Grauer's specimens in the Berlin Museum and the Rothschild collection, though labeled as coming from 120 to 150 kilometers west of Tanganyika, were undoubtedly taken on the highland northwest of Baraka, for the elevations are given as 2200–2400 meters. A female that I collected at 7000 feet on the mountains west of the Ruzizi Valley is not quite so dark as most of the other specimens, and has more whitish areas on the outer rectrices. I suspect that with a larger series of specimens we shall find more or less intergradation between *latistriatus* and *lacuum*.

Anthus leucophrys zenkeri Neumann

Anthus leucophrys zenkeri NEUMANN, 1906, Jour. Ornith., p. 235 (type local-

ity: Yaunde, Cameroon). MEINERTZHAGEN, 1921, Ibis, p. 661 (Belgian Congo). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 345 (Upper Uelle). BANNERMAN, 1934, Bull. Brit. Ornith. Club, vol. 54, p. 106; 1936, The birds of tropical West Africa, vol. 4, p. 77. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 104 (Dramba; Djalasinda; Mahagi Port; Faradje); 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 319. CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 340 (Garamba; Niangara; Aba; Dungu; Duma on Ubangi R.). GRANT AND M.-PRAED, 1939, Bull. Brit. Ornith. Club, vol. 60, p. 26.

Anthus leucophrys sordidus REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 318 (in part. Rimo in Lado district).

? *Anthus gouldi turneri* GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 80 (Aba; Yei).

Anthus sordidus EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 128 (Tunguru).

SPECIMENS: Niangara, two males, January 21, December 16; female, December 16. Faradje, male, April 14; female, October 13; immature male, May 6; immature female, April 11. Garamba, immature male, June 29.

ADULTS: Iris dark brown; maxilla brownish black, mandible buff with blackish tip, corners of mouth light yellow; feet pinkish buff.

DISTRIBUTION OF THE SPECIES: Almost throughout the savannas of Africa, from the Cape Province to Abyssinia, westward to Angola and across the grasslands north of the equatorial forests to Senegal.

The subspecies number supposedly about 15, but some of these differ so little that they may prove untenable. In the past they have often been grouped in two distinct species, the ranges of which were supposed to overlap. Lighter-colored forms often appear to have shorter hind claws, and they are sometimes referred to a species called *A. vaalensis* Shelley. But to me the evidence for this course seems inconclusive. The forms ranging across the savannas from Senegal to Uganda and Abyssinia are generally darkest brown above and most rufous below. Individuals of some other races in worn plumage become so soiled as to look very dark, and a few of the type specimens have unfortunately been in that condition.

Anthus leucophrys leucophrys Vieillot occupies the southern end of the continent, north to Zululand and perhaps the Orange Free State; *A. l. vaalensis* Shelley, Upper Natal to Bechuanaland.

A. l. chobiensis Roberts[1] is apparently a very light-colored form from the upper Zambesi Valley. *A. l. neumanni* Meinertzhagen is another large, rather light-colored race which seems to occupy the northern half of Angola, while birds from Mossamedes Province and southern Benguella are distinctly darker: *A. l. prunus* Meinertzhagen.

Anthus leucophrys bohndorffi of the lowland savannas of the southern Congo is moderately dark above, and *A. l. turneri* from the eastern Congo, Uganda, and western Kenya Colony is not very different, though a little more rufescent below. Specimens from the highland of Marungu and perhaps other adjacent plateaus are larger and lighter in color: *A. l. marungensis.* This form is closely allied to *neumanni* and to *A. l. goodsoni* Meinertzhagen of the Kenya highlands.

Anthus leucophrys omoensis Neumann of western Abyssinia is deeply colored, with underparts smoky rufous, while *A. l. saphiroi* Neumann, from Harar and Shoa, is a little lighter, more like *turneri. A. l. zenkeri,* ranging from Darfur and the Bahr-el-Jebel westward to the French Sudan, is markedly rufous below and dark brown on upperparts, while *A. l. gouldii* Fraser of the coastal region of Upper Guinea differs from *zenkeri* in being less rufous beneath, and *A. l. ansorgei* White of Portuguese Guinea is still lighter in color.

Of the five races occurring in the Congo, *zenkeri* is the most rufous on the underparts. Its wings vary from 86 to 101 mm., but in most Congo specimens 90 to 97 mm., the tails 65 to 72 mm. Examples from the Upper Uelle, it must be admitted, are less rufous than those from the Cameroon, and might almost be referred to *turneri.* In the Frankfurt Museum I saw a rather ruddy specimen, collected by Schubotz at Duma near the Ubangi.

This is the common pipit of the northern savannas of the Congo. Pairs or small family parties are to be seen in the most open places they can find, often in freshly cleared farm land, but also on spots naturally bare amid the grasslands. It is because these areas are so scarce that the pipits are not more numerous. They are quiet, unobtrusive birds, and I cannot recall ever hearing them sing. Jackson noted that breeding males of *A. l. turneri* soar high in the air, fluttering round in circles, and then drop

[1] 1935, Ann. Transvaal Mus., vol. 16, p. 127 (Kabulabula, Chobe R.).

headlong toward the ground. A brief but pleasant twittering song may be given meanwhile.

From the few dissections we made, it is evident that nesting takes place in the dry season. The birds pair in December, a male with gonads enlarged was taken in January, and the fully fledged young are seen in the early part of the rains. In Northern Nigeria Serle[1] found a nest on March 20. It was cup-shaped, well hidden at the base of an old stub of guinea corn. The three eggs were grayish white, thickly spotted, mottled, and streaked with different shades of brown and purplish gray. Measurements: 20.4–20.9 by 15.3 mm.

The food consists of insects, including beetles, large ants, and caterpillars, but we examined only three stomachs.

Anthus leucophrys turneri Meinertzhagen

Anthus gouldi turneri MEINERTZHAGEN, 1920, Bull. Brit. Ornith. Club, vol. 41, p. 24 (type locality: Kituni, Nandi district, Kenya Colony). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 79 (Irumu).

Anthus sordidus HARTLAUB, 1891, Abhandl. Naturwiss. Ver. Bremen, vol. 12, p. 17 (Buguera).

Anthus pyrrhonotus O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 313 (60 miles north of Beni).

Anthus leucophrys sordidus REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 341. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 280 (Kamabo; Lisasa).

Anthus nicholsoni SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 280 (in part. Kibati).

Anthus leucophrys goodsoni MEINERTZHAGEN, 1921, Ibis, p. 660 (in part. Near L. Kivu).

Anthus gouldii turneri FRIEDMANN, 1937, Bull. 153, U. S. Natl. Mus., pt. 2, p. 254 (in part. Ituri District).

Anthus leucophrys turneri CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 341 (Kasenyi; Bogoro; Irumu; Nyanza on L. Tanganyika). JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 817 (Kikorongo and Toro in Uganda; border of Belgian Congo). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 88 (Molindi R.; Kibati); 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 319.

Anthus leucophrys omoensis GRANT AND M.-PRAED, 1939, Bull. Brit. Ornith. Club, vol. 60, p. 26 (in part. Uganda).

DISTRIBUTION: From the vicinity of Mt. Elgon and the grasslands west of Lake Albert south through Kavirondo, Uganda, and

[1] 1943, Ibis, p. 421.

the eastern Congo savannas to Karagwe, the Kivu District, and the northern end of Lake Tanganyika. A female collected by Raven at Nyanza on the northeast shore of that lake for the United States National Museum may belong to this race.

In coloration *turneri* is fairly similar to *saphiroi* of eastern Abyssinia, but not nearly so dark and rufescent below as *omoensis*, with which Grant and Mackworth-Praed have said it should be united. From *zenkeri* it differs in being a little paler on the underparts, and less boldly spotted on the chest. Wings of *turneri* measure 88–100 mm., tails 63–71 mm.

In habits exactly like *zenkeri*, the present race is found singly or in pairs on cultivated ground, naturally bare spaces, or along roadsides in open grassland. It does not invade clearings in heavy forest, nor did I ever notice it in the elephant grass country around the lower slopes of Ruwenzori. At Kasenyi it lives at only 2100 feet on the same open land as *Mirafra rufocinnamomea* and *M. albicauda*. It is common on the plains along the north shore of Lake Edward and in the upper Semliki Valley, less so in the lower Rutshuru Plain, although I have collected it there. Few specimens have been taken above 5000 feet in the Kivu, but in suitable open country like that near Kibati this pipit occurs at 6500 feet. I have seen none from the highlands of Ruanda-Urundi.

Anthus leucophrys bohndorffi Neumann

Anthus leucophrys bohndorffi NEUMANN, 1906, Jour. Ornith., p. 236 (type locality: Kasongo, Lualaba R.). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 344. CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 341 (in part. Kabalo; Lusambo; Luluabourg; L. Mukamba; Kwilu R.; Mutombo Mukulu in Lomami District; Dilolo). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 75 (in part. Luluabourg; Banda near Lubue R.; Kilembe near Loandji R.). SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 319. WHITE, 1946, Ibis, p. 508 (Congo border near Mwinilunga).

Anthus pyrrhonotus REICHENOW, 1887, Jour. Ornith., p. 308 (Kasongo).

Anthus gouldi SHELLEY, 1900, The birds of Africa, vol. 2, p. 307 (in part. Kasongo).

Anthus leucophrys sordidus REICHENOW, Die Vögel Afrikas, vol. 3, p. 318 (in part. Kasongo).

Anthus leucophrys NEAVE, 1910, Ibis, p. 238 (in part. Upper Lualaba R.; Bunkeya R.).

Anthus leucophrys turneri SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 344 (in part. Southern Belgian Congo).

Anthus gouldii turneri FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 254 (in part. West shore of L. Tanganyika).

DISTRIBUTION: Lowland savannas of the southern Congo, from the Manyema District west at least to the Kasai and south to the vicinity of Dilolo, apparently also to Northern Rhodesia near the upper Kafue River and Balovale.

This subspecies is very similar to *turneri* which it resembles in the dark color of the back, though in fresh plumage *bohndorffi* is slightly paler beneath. Wing 88–97 mm., tail 62–71 mm. The type was a very dark bird in worn plumage, collected in June. Three specimens obtained at Kabalo by Schouteden in March are in fresher plumage, very different in appearance from the type.

Specimens collected by Neave and by Lynes near the upper Kafue River appear to be of this race, as do others secured by de Witte at Dilolo. There is also a very worn young bird in the Congo Museum from the Kwilu River that may belong here.

Anthus leucophrys marungensis Chapin

Anthus leucophrys marungensis CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 342 (type locality: Kasiki, 7500 ft., Marungu; also from Tenke and Kansenia in Upper Katanga). SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 319.

Anthus leucophrys NEAVE, 1910, Ibis, p. 238 (in part. Lufupa R.).

Anthus gouldii bohndorffi FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 255 (Lufupa R.).

Anthus leucophrys bohndorffi LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 75 (in part. Biano Plateau).

Anthus vaalensis muhingae WHITE, 1944, Bull. Brit. Ornith. Club, vol. 65, p. 6 (type locality: Muhinga Plain, south of Nasondoye, Belgian Congo); 1946, Ibis, p. 508.

DISTRIBUTION: The highlands of Marungu, and apparently the higher levels in the Upper Katanga, above 4000 feet. Possibly this subspecies extends even to the Matengo highland, northeast of Lake Nyasa.

Large and relatively light brown above, with chest spots faint, wings (of 10 specimens) 93–104 mm., tails 66–79 mm. *A. l. marungensis* is certainly a close ally of *neumanni, chobiensis, vaalensis* and *goodsoni*, and seems to intergrade in size with *bohndorffi* in the Lulua District. This is an argument against the view that these pale races constitute a separate species.[1] White

[1] See Van Someren, 1932, Novitates Zool., vol. 37, p. 338; Austin Roberts, 1935, Ann. Transvaal Mus., vol. 16, pp. 126, 127; and White, 1946, Ibis, pp. 78, 508; 1948, idem, pp. 547–553.

concludes that his *muhingae* is synonymous with my *marungensis*, but he is still convinced that *A. vaalensis* is a distinct species.

The differences in color between *neumanni*, *marungensis*, and *goodsoni* are slight, and the type of *goodsoni* (from Nakuru) is unfortunately not one of the palest specimens that might have been chosen from the Kenya highlands.

In addition to the four specimens from Kasiki, Marungu, collected by de Witte, I have seen also a male from Mukuli, at 5450 feet in the same highland, taken by Rockefeller and Murphy. A male collected by Neave near the Lufupa River at 4000 feet has the wing 102 mm. long, but is dark in color, probably as a result of wear and soiling of the plumage.

Anthus leucophrys neumanni Meinertzhagen

Anthus leucophrys neumanni MEINERTZHAGEN, 1920, Bull. Brit. Ornith. Club, vol. 41, p. 23 (type locality: Ambaca, northern Angola). CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 342 (Matadi). SCHOUTEDEN, 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 87 (Lower Congo); 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 319 (Tumba).

Anthus leucophrys angolensis NEUMANN, 1906, Jour. Ornith., p. 236 (type locality: Ambaca, Angola).

Anthus leucophrys bohndorffi CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 341 (in part. Wilhelm Falls).

SPECIMEN: Matadi, immature female, December 27.

DISTRIBUTION: Benguella Plateau to northwestern Angola; perhaps also to the lower Congo River and the Bateke Plateau in the French Congo. Apparently it does not range much to the east of the Kwango River, and in southern Angola it is replaced by the smaller, more richly colored *A. l. prunus*. *A. l. neumanni* is a substitute name for *A. l. angolensis* Neumann. In fresh plumage this subspecies is relatively light brown above, with wing 90–104 mm., tail 67–79 mm.

Very few specimens are known from Congo territory. My young bird from Matadi has the wing 90 mm. long, and its relatively small feet distinguish it from *A. pallidiventris*. Two adults from Wilhelm Falls on the Kwango River are badly abraded and look rather dark, and there is another worn adult in the Congo Museum from Tumba in the hilly region of the Cataracts. Doctor Malbrant has recently sent us an adult female and two young from Brazzaville and a male from 40 km. south of Djambala in the French Congo. The wings of the two adults measure 93 and 100

mm., their hind claws 10 mm., but the coloration seems a trifle dark for *neumanni*. Without adult specimens in fresher plumage I cannot be sure that the birds from the Lower Congo, Stanley Pool, and the Bateke Plateau are really not closer to *bohndorffi*.

Anthus pallidiventris pallidiventris Sharpe

Anthus pallidiventris SHARPE, 1885, Catalogue of the birds in the British Museum, vol. 10, p. 560 (type locality: Gaboon). SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 195 (Boma; Banana; Kifuku on Banana Bay; Moanda). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 345 (Lower Congo). BANNERMAN, 1934, Bull. Brit. Ornith. Club, vol. 54, p. 106 (Portuguese Congo); 1936, The birds of tropical West Africa, vol. 4, p. 78 (in part. Lower Congo). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 70 (Brazzaville).

? *Anthus* SCHOUTEDEN, 1924, Rev. Zool. Africaine, vol. 12, p. 268 (Kisantu).

Anthus pyrrhonotus PETIT, 1926, Dix années de chasses, p. 120 (Boma).

Anthus pallidiventris pallidiventris CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 342 (Banc d'Anvers). SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 320 (Kalamu; Mateba).

SPECIMEN: Boma, female, January 21.

ADULT: Iris dark brown; bill dusky brown, becoming pale yellowish horn color on base of mandible; feet buff.

DISTRIBUTION OF THE SPECIES: From the lower Cuanza River in Angola north to the Ogowé River in the Gaboon, and up the Congo to the vicinity of Coquilhatville.[1] The typical race, with rather faint spotting on the chest, is found in the Gaboon, Lower Congo, and northwestern Angola. *A. p. esobe*, of the region between Bolobo and Coquilhatville, is more blackish brown on the upperparts and much more heavily spotted on the chest with blackish. There is little difference in size. Wings of 10 specimens of *A. p. pallidiventris* measure 89–103 mm., those of eight *esobe* 90–97 mm. The species has a relatively long metatarsus, 29–33.5 mm.

Near Boma during January I found this dull-colored pipit walking about silently in pairs on dry spots in open pastures. My single specimen was in non-breeding state. In general appearance and behavior they resemble *A. leucophrys*, a species which has not been found near Boma or Banana. But *pallidiventris* cannot be regarded as a race of *leucophrys*, in view of the

[1] Salvadori's record from Portuguese Guinea was erroneous. See Bannerman, 1934, Bull. Brit. Ornith. Club, vol. 54, p. 106.

much greater size of its feet. Moreover, their ranges overlap near Stanley Pool.

Anthus pallidiventris esobe Chapin

Anthus pallidiventris esobe CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 343 (type locality: Eala near Coquilhatville; also from Lukolela). SCHOUTEDEN, 1938, Bull. Cercle Zool. Congolais, vol 14, p. 104 (Kunungu); 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 320.

Anthus SCHOUTEDEN, 1924, Rev. Zool. Africaine, vol. 12, p. 416 (Eala); 1925, idem, vol. 13, p. 12 (Kunungu).

Anthus pallidiventris BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 78 (in part. Lukolela).

DISTRIBUTION: The larger grassy spaces, often enclosed by forest, in the region of Coquilhatville, Lukolela, and probably Lake Leopold II. Specimens from Kunungu near Bolobo are referred provisionally to this subspecies, though the spotting of the chest is less heavy, and so they approach the typical form in coloration.

At Eala Schouteden obtained five specimens between January 1 and 15. In a grassy area behind Lukolela, where I noticed none in August and September, this pipit appeared in October, sometimes in small parties of eight or nine. It walked about on bare ground near some houses or fed in sweet potato patches. Only once did I see a single bird perch on a tree, and I never heard any call.

During January they were usually noted in pairs. The grass was then high, and on April 3 another pair was seen at Mompoto, on the river a little above Lukolela. A male collected on that day seemed nearly ready to breed. On October 10 a rather young bird had been secured, so I infer that breeding takes place between May and July, or at the end of the rains.

Anthus similis neumannianus Collin and Hartert

Anthus nicholsoni neumannianus COLLIN AND HARTERT, 1927, Novitates Zool., vol. 34, p. 50 (type locality: Gardulla, near L. Gandjule, southern Abyssinia). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 252 (Ruanda).

Anthus nicholsoni O.-GRANT, 1908, Ibis, p. 281 (north of L. Tanganyika). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 340 (Kisenyi).

Anthus nicholsoni subsp. SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 40 (Kisaka).

Anthus sordidus longirostris GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 79 (Lutobo in British Ruanda).

Anthus sordidus nyassae SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 341 (in part. Kivu District).

Anthus leucophrys ssp. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 22, p. 122 (Ngoma).

Anthus similis neumannianus CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 344 (Kimboho, west of L. Edward; Ruhengeri; Ruzizi Valley). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, pp. 87, 88; 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 320.

Anthus similis latistriatus JACKSON AND SCLATER, 1938, The birds of Kenya Colony and ... Uganda, vol. 2, p. 816 (in part. Ankole; Kigezi).

Anthus similis hararensis GRANT AND M.-PRAED, 1939, Bull. Brit. Ornith. Club, vol. 60, p. 25 (in part. Northeastern Belgian Congo).

DISTRIBUTION OF THE SPECIES: South Africa north to the middle Congo River, Red Sea Hills, Darfur, and Asben, but not in the forests of western or central Africa. Also in Asia Minor, Arabia, and other parts of western Asia to India. The range on the African continent is more extensive than formerly suspected, and there appear to be some 11 races there. Socotra Island has an indigenous form, and there are five races in Asia.

The African subspecies are: *A. s. hararensis* Neumann of eastern Abyssinia, replaced by *A. s. neumannianus* from Shoa to northern Tanganyika Territory; *A. s. nivescens* Reichenow in Somaliland; *A. s. jebelmarrae* Lynes in Darfur; *A. s. asbenaicus* Rothschild in Asben; *A. s. chapini* Grote[1] in Cameroon highlands; *A. s. chyuluensis* Van Someren[2] on the Chyulu Hills of Kenya Colony; *A. s. dewittei* in Marungu highlands; *A. s. schoutedeni* of southwestern Congo and Angola; *A. s. nyassae* from Uhehe and Lake Tanganyika to southern Nyasaland; *A. s. nicholsoni* Sharpe from southern Rhodesia to Cape Province; and *A. s. leucocraspedon* Reichenow in Damaraland. To judge from the emargination of the primaries, *A. bannermani* Bates of the highlands of Sierra Leone and French Guinea may also be a representative of this species.

It is not possible here to give the distinguishing characters of all these forms. Those of Asben, Somaliland, and Damaraland are very pale. *Anthus s. neumannianus* is a rather large brownish race with long bill. Its wings measure 89–106 mm., those of males usually longer than the females', and its culmen (to base) 17.5–19 mm. The range extends from Shoa to Kilimanjaro

[1] 1937, Ornith. Monatsber., p. 205 (Fongu, near Bamenda).

[2] 1939, Jour. East Africa Uganda Nat. Hist. Soc., vol. 14, p. 56.

and Mbulu in Tanganyika Territory. In the eastern Congo from the vicinity of Lake Edward to the northern end of Lake Tanganyika, representatives of this species are found which resemble *neumannianus* but seem to differ in having slightly shorter bills, culmen (to base) 16.5–18.5 mm., wings only 86–97 mm., and general coloration a trifle more grayish brown. They do not approach *nyassae* in color and perhaps in future will deserve a new name, though at present I am not ready to separate them. Jackson and Sclater (1938) noted the same differences between western Uganda and East African birds, but the name *latistriatus* belongs to quite a different pipit.

I have now examined about 19 specimens taken between the south end of the Ruwenzori Range, the Bukoba district, the shores of Lake Kivu, and the lower Ruzizi Valley. This pipit is widely distributed in that region, but easily overlooked because of its general resemblance to *A. richardi lacuum*. Even in museums the two species have sometimes been confused.

Of its habits little is recorded. Near the new post of Kasindi I found a male in a field on a steep slope at 4500 feet, with many rocks, where the grass had recently been burned. In East Africa I noted that *neumannianus* is very partial to rocky hillsides, where there is often a scrubby tree growth. According to Moreau[1] it often flies into the tops of trees, but its song, an unmusical "kliddle-kliddle," is uttered after climbing about 50 feet up into the air.

Anthus similis dewittei Chapin

Anthus similis dewittei CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 344 (type locality: Kasiki, Marungu, southeastern Congo). SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 320.

DISTRIBUTION: Known only from the highland of Marungu, above 2000 meters. May possibly occur also in the Upper Katanga, but the species has not yet been collected on the higher plateaus there, and the elevation is nowhere so great as that of Kasiki, 2200 meters. Only three specimens are known, all in the Congo Museum.

This race differs from *neumannianus* in being considerably darker over the whole upperparts, somewhat more distinctly

[1] 1938, Ibis, p. 11.

streaked on the chest, and less buffy over the whole underparts. Its dimensions are much the same: wing 93–100 mm., tail 71–75; culmen to base 17.5–18; metatarsus 26–26.5.

From *nyassae*, which inhabits the western shore of Lake Tanganyika and the southern Katanga at levels near 4000 feet, it can be separated immediately by its much grayer coloration and larger size.

Anthus similis nyassae Neumann

Anthus nicholsoni nyassae NEUMANN, 1906, Jour. Ornith., p. 233 (type locality: between Sangesi and Songea, northeast of L. Nyasa).

Anthus nicholsoni NEAVE, 1907, Mem. Proc. Manchester Lit. Phil. Soc., vol. 51, no. 10, p. 83 (Ndola; Msofu R.); 1910, Ibis, p. 239.

Anthus rufulus lacuum SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 284 (Kafubu R.).

Anthus sordidus nyassae BANGS AND LOVERIDGE, 1933, Bull. Mus. Comp. Zool., vol. 75, p. 184 (Ujiji on L. Tanganyika).

Anthus similis nyassae CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 343 (Tembwe; Lubumbashi; Elisabethville). GRANT AND M.-PRAED, 1939, Bull. Brit. Ornith. Club, vol. 60, p. 25. SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 320. WHITE, 1946, Ibis, p. 77 (Mwinilunga).

DISTRIBUTION: Southern Nyasaland north to Uhehe in Tanganyika Territory, Tembwe on Lake Tanganyika, and the Upper Katanga.

This is a distinctly rufescent race, with wings 88–95 mm., culmen to base 16.5–18 mm. Specimens from the Katanga and the west shore of Lake Tanganyika seem to have the blackish markings on the back a little less conspicuous than in those from Nyasaland, Njombe, and the Songea district. Neave's specimen from Ndola in October is in very worn plumage, and thus quite different from the fresh-plumaged birds collected by Schouteden in February and April.

In Nyasaland Belcher found this pipit only on rocky wooded hills and noted that it perched readily in trees. It has a loud chirruping call, sometimes given on the wing. A cup-shaped nest found by him on November 14 was sheltered by a large stone, and its lining composed of fine split grass and wood fiber. The two eggs measured 21.5 mm. by 15 mm. and were not unlike some of those of *A. richardi*. Neave reported a nest near Ndola, close to the Katanga border, on October 2—likewise with two eggs.

Anthus similis schoutedeni Chapin

Anthus similis schoutedeni CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 345 (type locality: Kwamouth on middle Congo R.; also from Baaba in Kwango District, and Macaco in Kasai District). SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 320.

Anthus sp. SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, pp. 330, 395 (Macaco; Kwamouth).

DISTRIBUTION: From the Benguella Plateau in Angola north to the middle Congo River, Oka in the French Congo, and the vicinity of Luebo in the Kasai.

This is a rather dark-colored race, well spotted on the breast, much less ruddy on the upperparts than *nyassae*, and surprisingly whitish on throat, abdomen, and under tail-coverts, except when in perfectly fresh plumage. The beak is relatively short, with culmen (to base) 15–17.5 mm. Wings of adults from the southwestern Congo 83–92 mm., from Angola 86–98 mm.

In the savannas from the Middle Congo to the Kasai this streak-backed pipit is apparently not uncommon. Schouteden secured nine examples at Kwamouth within little more than a week, but at Lukolela or even in the Lower Congo it is unknown. On the Angolan plateaus it must be even more numerous than I suspected, for I now find in the Rothschild collection 19 specimens collected by Ansorge at a dozen different localities there. Boulton and Pemberton likewise secured a few.

[*Anthus lineiventris* Sundevall]

Anthus lineiventris SUNDEVALL, 1850, Öfvers. K. Svenska Vetensk. Akad. Förhandl., vol. 7, p. 100 (type locality: Dwars Mts., Marico district, western Transvaal). PITMAN, 1934, A report on a faunal survey of Northern Rhodesia, p. 236 (Malagulo and Lavusi near Serenje). CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 345.

This large, striped pipit, with a touch of yellow on the bend of the wing, is found locally from Natal north in eastern Africa to the Paré Mountains, and to Pungo Andongo in northern Angola. Known from the region of Serenje, Northern Rhodesia, it may yet be found in the neighboring corner of the Katanga.

The usual haunts are rocky hillsides with a fair number of trees or bushes, at almost any elevation up to 5000 feet, and in Nyasaland the breeding season appears to be in the early rains, from September to December.

KEY TO THE CONGO SPECIES OF *Macronyx*

1. Throat bright red, pink, or pale brown; breast always with some light red or pink ..... *M. ameliae*
   Throat yellow, lower breast always yellowish 2
2. Yellow of breast ochreous, no blackish streaks on flanks or at sides of breast behind black crescent ..... *M. fülleborni*
   Yellow of breast brighter, conspicuous blackish streaks at sides of breast behind black crescent, and fainter brownish ones on flanks . . *M. croceus*

Macronyx croceus croceus (Vieillot)

Alauda crocea VIEILLOT, 1816, Nouveau dictionnaire d'histoire naturelle, vol. 1, p. 365 ("Island of Java"; corrected type locality: Senegal).

Alauda LEACH, 1818, *in* Tuckey, Narrative of an expedition to explore the River Zaire, p. 407 (Lower Congo).

Macronyx croceus HARTLAUB, 1881, Abhandl. Naturwiss. Ver. Bremen, vol. 7, p. 85 (Mahagi). REICHENOW, 1887, Jour. Ornith., p. 305 (Leopoldville); 1904, Die Vögel Afrikas, vol. 3, p. 321 (Nyangabo); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 341 (Ruanda; Kisenyi; Usumbura). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127. SHELLEY, 1902, The birds of Africa, vol. 3, p. 4 (L. Edward). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (Ruzizi-Kivu). SALVADORI, 1914, Ann. Mus. Zool. Napoli, new ser., vol. 4, no. 10, p. 26 (Ruanda). LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 28 (L. Edward; Rutshuru). MENEGAUX, 1918, Rev. Française Ornith., vol. 5, p. 259 (Zambi). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 280 (Beni; Masidongo; Boga; Lisasa; Old Mission St. Gustave; Mai-na-Kwenda; Lufungula; Baraka); 1923, idem, vol. 11, p. 396 (Kwamouth); 1924, idem, vol. 12, pp. 268, 416 (Kisantu; Kidada; Ikengo); 1925, idem, vol. 13, p. 12 (Kunungu); 1926, idem, vol. 13, p. 196 (Vista); 1932, idem, vol. 22, p. 122 (Ngoma); 1933, idem, vol. 22, p. 377 (Bigogo); 1935, idem, vol. 27, p. 402 (Katanda; Gabiro; Rutshuru bridge). EMIN, 1919, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 2, p. 78 (Mahagi); 1927, idem, vol. 4, p. 232 (Kavalli). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pp. 185, 242 (Mundu; Mangbetu country). SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 41 (Urundi; Irumu). PETIT, 1926, Dix années de chasses, p. 120 (Boma).

Macronyx croceus croceus GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 80 (Kabare; Tabaro; Sidabo). FRIEDMANN, 1930, Occas. Papers Boston Soc. Nat. Hist., vol. 5, p. 264. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 348. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 105 (Api; Adra; Faradje); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 89 (Kibati; Molindi R; Munagana; Rwindi; Rutshuru; Mabenga; new Kasindi); 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 320 (Mateba; Ndwa; Titule; Angodia; Bambesa; Poko; Bunia; Luofu; Lulenga; Karambi; Bimba; Kibingo); 1942, idem, vol. 36, p. 336; 1943, idem, vol. 37, p. 270. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 83, fig. 84. JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 827.

SPECIMENS: Boma, male, January 21. Niangara, two males,

November 5, 22; five females, February 14, November 5, 23; juvenile female, November 7. Faradje, three males, August 29, September 2, November 16; four immature females, August 21, 23, September 2; two juvenile males, juvenile female, November 16. Garamba, female, July 3.

ADULTS OF BOTH SEXES: Iris dark brown; maxilla blackish, mandible bluish gray; feet buff.

NESTLING: Bill brownish above, buff below, with the skin at corners of mouth much widened and of a pale yellow color, this color running out along the edges of both mandibles. Whole interior of mouth, including tongue, is deep orange red, save for the numerous pointed projections of skin on the palate and back of tongue, which are creamy. Iris brown, feet pinkish buff.

DISTRIBUTION OF THE SPECIES: From Senegal eastward to Lake No, Uganda, and Kenya Colony, then southward to Nyasaland, Natal, and eastern Cape Province; also the Lower and Middle Congo savannas, and northwestern Angola. In the eastern Congo and Ruanda-Urundi it is found in most of the open grasslands from Lake Albert to the northern end of Lake Tanganyika, up to an elevation of about 6000 feet.

Over this vast area the birds show relatively little variation in color or size, and in addition to the nominate race only *M. c. vulturnus* Friedmann[1] is currently recognized. It occupies southeastern Africa, north to Southern Rhodesia, and has apparently a slightly longer bill. A closely allied species, *M. fülleborni*, replaces *croceus* over a large area extending from Angola to some of the highlands of Tanganyika Territory.

The yellow-throated long-claw bears a certain similarity to the American meadowlarks (*Sturnella*), not only in color but also in haunts and flight. It feeds on the ground, often in pairs, in places where the grass is short, and frequently in spots that were marshy during the rains. Its flight is leisurely, partly sailing on extended wings, and when pursued the birds may fly from the top of one small tree to another. The short, whistled, call note sounds like "twee-ee, twee-ee. . . ," and the song is a pleasant, broken "what-was-i-see-see."

In the Uelle District, where this long-claw is numerous, our dissections indicated that the breeding season occupied the latter

[1] 1930, Occas. Papers Boston Soc. Nat. Hist., vol. 5, p. 263 (Natal).

part of the rains, for signs of reproductive activity appeared as early as August, and nestlings were collected in November.

A nest found at Faradje on November 16 was a rather large, bowl-shaped fabric of pieces of dry grass and a few rootlets in its lining, placed directly on the ground amid a scanty growth of grass. This was on high ground, close to the post where the workmen had cut off all the grass (*Imperata cylindrica*) for roofing not more than a month previously. The three nestlings were protectively colored save when they exhibited their orange red mouths, but even when not begging for food they very often held their closed beaks straight upward. "Cheeping" calls indicated hunger.

In equatorial regions of eastern Africa there are two breeding seasons in the year, coinciding roughly with the rains, while south of the Equator nests are apt to be built toward December. Eggs are usually three, pale brownish or bluish white, densely freckled with reddish brown, dark brown, and chocolate, especially around the blunt end, and measure 22.8–24.7 mm. by 16–18.1 mm.

Twelve stomachs were examined without our finding a trace of vegetable food. Insects had invariably been eaten, usually small beetles, and once a beetle larva. But butterflies were also found in two stomachs (of a pair of birds) and a small millipede once.

Macronyx fülleborni ascensi Salvadori

Macronyx ascensi SALVADORI, 1907, Boll. Mus. Zool. Anat. Comp. Torino, vol. 22, no. 570, p. 6 (type locality: near Lukonzolwa, west of L. Moero). NICHOLSON, 1909, Mem. Proc. Manchester Lit. Phil. Soc., vol. 53, no. 24, p. 9. NEAVE, 1910, Ibis, p. 239 (upper Lualaba R.; upper Luansenshi R.).

Macronyx croceus NEAVE, 1907, Mem. Proc. Manchester Lit. Phil. Soc., vol. 51, no. 10, p. 84 (near Chiwali's, Alala Plateau). MOURITZ, 1914, Ibis, p. 31 (Loömbwa R). SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, no. 3, p. 331 (Ngombe in Kasai).

Macronyx croccus DE RIEMAECKER, 1927, Rev. Zool. Africaine, vol. 14, p. 279 (Kasipa R.; Elisabethville).

Macronyx croceus fülleborni FRIEDMANN, 1930, Occas. Papers Boston Soc. Nat. Hist., vol. 5, p. 264. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 348 (Katanga). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 75 (Biano Plateau; Nasondoye; Luluabourg; L. Mukamba; Banda).

Macronyx fülleborni ascensi BOWEN, 1931, Proc. Acad. Nat. Sci. Philadelphia, vol. 83, p. 280 (Kasangala; Lubenga). SCHOUTEDEN, 1940, Rev. Zool. Bot.

Africaines, vol. 33, p. 321 (L. Musolo; Dilolo; Kansenia; Kando; Mukula Gombe; Kasiki; Kanzenze).

Macronyx fülleborni VINCENT, 1946, Ibis, p. 476 (Elisabethville).

DISTRIBUTION OF THE SPECIES: The Mbulu district of Tanganyika Territory, the highlands north and northeast of Lake Nyasa and then westward almost to the coast of Angola. *M. f. fülleborni* Reichenow[1] is restricted to Tanganyika Territory and perhaps some adjacent highlands in Northern Rhodesia. *M. f. ascensi*, with grayer rump and yellow of underparts more extensive on flanks and just below the black chest mark, ranges from the Katanga and Marungu highlands to the Kasai District, central and southwestern Angola. There are two specimens in the American Museum collected by A. W. Eriksson, presumably near the southern border of Angola. One is labeled "Omrora," September 26, 1880; the other has lost its original label. The two examples from Mossamedes mentioned by Gyldenstolpe (1924) as unusually pure yellow below do not differ from several collected by Ansorge in other parts of Angola, nor can I separate them from Marungu specimens of *ascensi*.

Nicholson (1909) was fully justified in his remarks as to the racial validity of *ascensi*, but I find very little difference between young of *M. f. ascensi* and *M. c. croceus* in juvenal plumage. It is true that the two races of *fülleborni* occupy a large area that is complementary to the range of *M. croceus*. There seems to be no evidence of intergradation—certainly not at Leopoldville—and at a place called Kamsogori, to the north of Pungo Andongo, Angola, Ansorge collected adults of both *croceus* and *ascensi* on July 21, 1903. In Northern Rhodesia *M. croceus* is reported from the Eastern Province, *M. fülleborni* from Luwingu and Serenje. The difference is not due merely to altitude, for *croceus* is stated by Benson to occur in northern Nyasaland up to 5400 feet. In the southeastern Congo Lynes found no evidence that *croceus* occurred. *M. f. ascensi* is common and has exactly similar habits.

It nests in that region toward November and December, laying three eggs, which are yellowish white, clouded and spotted with pale reddish yellow; average dimensions 22.2 by 17.5 mm.

Macronyx ameliae wintoni Sharpe

Macronyx wintoni SHARPE, 1891, Ibis, pp. 444, 589 (type locality: Kavirondo). NEAVE, 1910, Ibis, p. 240 (Kalungwisi R.; Chisinga Plateau).

[1] 1900, Ornith. Monatsber., p. 39 (Unyika highlands, north of L. Nyasa).

Macronyx ameliae wintoni LYNES AND SCLATER, 1934, Ibis, p. 40 (L. Bangweolo; Nasondoye). SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 321 (Kanzenze).

DISTRIBUTION OF THE SPECIES: Coast of Natal and Zululand to Lake Ngami, the Upper Katanga, and Kenya Colony. *M. a. ameliae* De Tarragon, of Natal and Zululand, averages slightly larger and longer billed than *M. a. wintoni*, which occupies the remainder of the range from Southern Rhodesia and Ngamiland northward. The birds of Northern Rhodesia and the Katanga appear to be slightly darker or browner above than those of Kenya Colony.

The rosy-breasted long-claw is decidedly local in distribution, frequenting open grassy plains, often somewhat marshy, and mainly in highlands in eastern tropical Africa, where it has been found as high as 6000 feet on the Uasin Gishu Plateau. Unknown to the west of Lake Victoria, it invades the Congo only in the Upper Katanga.

In Northern Rhodesia it has been taken at a number of localities, including the north end of Lake Bangweolo and the Kalungwisi River. The only published records from the Katanga are those of Nasondoye and Kanzenze. At the latter place Gaston de Witte secured five specimens for the Congo Museum, including one adult male, while at the Kando River near Tenke he also obtained a young female. J. De Riemaecker had a male from Mwabo, near the mouth of the Luombwa River, in his collection.

Adult males of *wintoni* have bright red throats and a strong wash of red below the black chest crescent. Wings 89–95 mm.; exposed culmen 13–14 mm. Females show light brown throats, often lightly washed with red, chests merely streaked with blackish, and lower breast washed with light red. Wings 82–89 mm. Immature birds of both sexes have still less red beneath.

Like the other long-claws, this species lives in pairs, is rather shy, and apt to run off in the grass after settling down. During the nesting season Jackson[1] watched males circling high in the air as they gave a continuous plaintive song. In the region of Northern Rhodesia[2] and Nyasaland[3] breeding takes place toward December and January. The nest is a cup of dry grasses placed

[1] Jackson, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 830.

[2] Lynes, 1934, Ibis, p. 40.

[3] Benson, 1940, Ibis, p. 589.

near a tussock, and usually holds three to four eggs. These are very pale green, mottled with brown and a little pale lilac, measuring 20–21.9 by 15–16.5 mm.

KEY TO THE CONGO SPECIES OF *Motacilla*

1. Under tail-coverts white; scarcely a trace of yellow anywhere in plumage . 2
   Under tail-coverts yellow (except perhaps in juvenal dress); some yellow always present on underparts or upperparts of adults 6
2. Back pure black in adults (though dark gray in young) . . . . . *M. aguimp*
   Back gray, sometimes tinged with brownish 3
3. Forehead and ear region whitish . . . . . *M. alba*
   Forehead and ear region gray or blackish 4
4. Three to four outer pairs of rectrices entirely or mostly white . . . . *M. clara*
   Only two pairs of outer rectrices white 5
5. Back dusky gray, with more or less olive wash; underparts very faintly washed with yellowish . . . . . *M. capensis*
   Back light gray, underparts pure white . . . . . *M. alba* (immature)
6. Hind claw shorter than remainder of hind toe; green or yellowish upper tail-coverts contrasting with gray back . . . . . *M. cinerea*
   Hind claw longer than remainder of hind toe; upper tail-coverts not unlike greenish back . . . . . *M. flava*

Motacilla alba alba Linnaeus

Motacilla alba LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 185 (Europe; restricted type locality: Sweden). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (Ituri).

Motacilla alba alba SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 336 (Uelle R.). VAN SOMEREN, 1931, Jour. East Africa Uganda Nat. Hist. Soc., special suppl. no. 4, p. 26. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 57. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 104 (Buta); 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 321. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 246. JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 801 (Butiaba).

? *Motacilla clara* SCHOUTEDEN, 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 39 (Buta).

SPECIMENS: Avakubi, female, November 22. Niangara, female, January 18; immature male, January 14. Faradje, three males, February 3, 8, December 30; two females, November 12, December 14.

ADULT MALE: Iris dark brown, bill blackish with base of mandible greenish gray, feet black.

DISTRIBUTION OF THE SPECIES: All across Europe and Asia, as well as in Morocco, in the breeding season, and there divisible into about a dozen races, which differ conspicuously in the extent

of black on head, chest, and back. The nominate race, known as the white wagtail, breeds from Iceland and northern Scandinavia to the Urals and the Mediterranean, and is the only form migrating to central and western Africa. It reaches Senegal and Liberia, and in the Congo usually winters north of the equatorial forests. It rarely reaches the Kivu District, but one example was obtained at Kisenyi by Grauer in January, 1908. In East Africa it visits the Kavirondo District and Simba. According to Benson[1] it may even straggle occasionally to Fort Johnston, Nyasaland.

In the savannas of the Uelle it is rather common in the dry season, and I have seen as many as seven or eight feeding near the river bank at Niangara in January, together with *Motacilla aguimp vidua* and *M. flava*. Their call note, uttered in flight, was distinctly double "chit-it" or "chip-ip" and quite different from the "sreet" of *M. aguimp*. At Faradje the white wagtail was first observed in 1911 on November 12, and in 1912 on November 14. The last one in the spring of 1912 was noticed on March 14.

The single occurrence at Avakubi was unusual, a lone bird in the open square at the post. On the lower Aruwimi W. Bonny obtained one toward 1889, and at Buta, also within the forest area, Brother Joseph Hutsebaut has recently collected a number. There seem to be no records from the Cameroon forest, and the statement by Petit[2] that he collected this wagtail on Sacraembaca Island in the Lower Congo and on the Kwilu River near Loango must be due to confusion with *M. aguimp vidua*.

Motacilla alba dukhunensis Sykes of western Siberia migrates mainly to India, but a few individuals seem to reach northeastern Africa. The upper wing-coverts show more white than those of typical *alba*. This race is not likely to reach the Congo.

Motacilla aguimp vidua Sundevall

Motacilla vidua SUNDEVALL, 1850, Öfvers. K. Svenska Vetensk. Akad. Förhandl., vol. 7, p. 128 (type locality: Assouan, Upper Egypt). JOHNSTON, 1884, The River Congo, p. 364 (Congo R.). SCHALOW, 1886, Jour. Ornith., pp. 413, 425 (Lufuku R.; Lugoma R.); 1887, idem, p. 242. MATSCHIE, 1887, Jour. Ornith., p. 156. FLOWER, 1894, Proc. Zool. Soc. London, p. 598 (Ipoto). REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 296 (Ponta da Lenha); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 339 (Kisenyi; northwest of

[1] 1942, Ibis, p. 304.

[2] 1889, Mem. Soc. Zool. France, vol. 12, p. 88.

L. Tanganyika). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (Banalia; Moliro; Umangi; Kisantu). SALVADORI, 1907, Boll. Mus. Zool. Anat. Comp. Torino, vol. 22, no. 570, p. 6 (Lukonzolwa); 1909, Ann. Mus. Civ. Genova, ser. 3, vol. 4, p. 324 (Buta–Dungu); 1911, idem, vol. 5, p. 449 (zone of Gurba-Dungu). NEAVE, 1910, Ibis, p. 237 (upper Lufira R.). MOURITZ, 1914, Ibis, p. 34 (Kalonga in Katanga). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 280 (Malisawa; Talia-Semliki; Boga; Irumu; Ruzizi; Beni). EMIN, 1919, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 2, pp. 428, 490 (Kuterma; Tomaya); 1922, idem, vol. 3, pp. 389, 408 (Tunguru); 1927, idem, vol. 4, p. 323 (Katwe). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 182. SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 40 (Uvira). DE RIEMAECKER, 1927, Rev. Zool. Africaine, vol. 14, p. 279 (Elisabethville). HENDRICKX, 1944, Ostrich, vol. 15, p. 209.

Motacilla aguimp BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 332. SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, pp. 331, 396 (Luebo; Basongo; Djoko-Punda; Kwamouth); 1924, idem, vol. 12, pp. 268, 416 (Leopoldville; Kidada; Kisantu; Eala; Bikoro; Ikengo); 1925, idem, vol. 13, p. 12 (Bolobo); 1942, idem, vol. 36, p. 336. GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 77 (Kampi-na-Mambuti). FRIEDMANN, 1930, The African Republic of Liberia and the Belgian Congo, vol. 2, p. 761 (Mobeka). CHAPIN, 1931, Nat. Hist., vol. 31, p. 600 (Lukolela).

Motacilla alba PETIT, 1926, Dix années de chasses, p. 117 (Boma).

Motacilla vidua aguimp SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 284 (Elisabethville).

Motacilla aguimp vidua BOWEN, 1931, Proc. Acad. Nat. Sci. Philadelphia, vol. 83, p. 282 (L. Tanganyika; Lualaba R.). SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 22, p. 122 (Ruanda); 1933, idem, vol. 22, p. 377 (Kisenyi); 1936, Ann. Mus. Congo, Zool., ser. 4, vol. 1, fasc. 2, p. 104 (Buta; Mauda; Djamba; Niangara; Aba; Aru; Abimva); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 90; 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 321 (Zambi; Malela; Kunungu; Ndwa; Boende; Ikengo; Umangi; Bumba; Elisabetha; Bambesa; Faradje; Mahagi–Niarembe; Mahagi Port; Kasenyi; Mongbwalu; Avakubi; Alimasi; Boga; Nyundo; Kabare; Gabiro; Kibingo; Kadia; Kwilu; Popokabaka; Franz Joseph Falls; Kasai; Tshofa; Kiambi; Moba; Biano; Kansenia; Kasenga; Moliro); 1941, idem, vol. 34, p. 266; 1943, idem, vol. 37, p. 270. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 59, fig. 17. GROMIER, 1936, La vie des animaux sauvages de l'Afrique, p. 292 (region of Kivu Volcanoes). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 569 (Saidi; Ekibondo). VINCENT, 1946, Ibis, p. 469 (Elisabethville).

Motacilla alba vidua HARTERT AND STEINBACHER, 1933, Die Vögel der paläarktischen Fauna, suppl. vol., p. 151.

SPECIMENS: Kwamouth, female, July 14. Bolengi, male, July 20. Lié, immature female, July 27. Stanleyville, juvenile male, August 6. Avakubi, two females, October 4, 15; juvenile female, October 5. Ngayu, three females, December 11, 22;

juvenile female, December 19. Medje, two males, August 17, September 9; two immature females, September 6, 9; four juvenile males, January 16, September 25; juvenile female, March 10. Faradje, male, September 8; female, July 26.

ADULTS OF BOTH SEXES: Iris dark brown, bill and feet black.

DISTRIBUTION OF THE SPECIES: From eastern Cape Province north to Sierra Leone, the Sudan, Assouan on the Nile, southern Abyssinia, and southern Somaliland. *M. a. aguimp*, with blackish flanks, is restricted to the Orange and Olifants river systems in South Africa, and the remainder of the range is occupied by *M. a. vidua*, with white flanks.

Throughout the Congo the African pied wagtail is apt to be almost everywhere save in mountain forests and the higher alpine zones. In lowland rain forest it will be seen only along the larger watercourses and in clearings. There it is the most familiar and confiding bird about almost every native village, and quickly appears in a new clearing of any size.

The number of localities from which specimens have been reported indicates its abundance in the savanna and plateau districts. A pair was even found at 7000 feet on the eastern slope of Ruwenzori by the British Museum expedition. Very fond of feeding along the edge of water, as well as on open ground along roads and near houses, this wagtail will venture up on the verandahs of houses to within a few feet of human beings. As it walks, flies and similar insects are seized from the air with a sudden snap of the bill. Carrion attracts flies and wagtails too; fly maggots are a special delicacy.

Butterflies form no small part of the diet, being seized by the body and shaken vigorously to remove the wings before swallowing. Numbers of wings will often be seen on the ground near a brook where the butterflies congregate to sip moisture and then fall an easy prey to the wagtails. At Avakubi we witnessed vast migratory flights of two kinds of butterflies, both of which were thus devoured. It is true that these insects are not often preyed on by most birds, wagtails offering one of the notable exceptions. This question has an important bearing on the development of mimicry in Lepidoptera, and T. A. Barnes[1] and G. D. H. Carpenter[2] both offer evidence that African wagtails do distinguish

[1] 1922, The wonderland of the Eastern Congo, pp. 254, 255.

[2] 1920, A naturalist on Lake Victoria, p. 238.

between palatable and distasteful forms. More recently a bibliography of the subject has been presented by Carpenter.[1] I agree with him that attacks by birds are of great importance.

When termites fly, the African pied wagtail pursues them in the air, as do so many other birds, with unexpected agility. Its ordinary flight is somewhat undulating. During the heat of the day it avoids direct sunlight, and from a sally after some insect quickly runs back into the shade of a bush or hut. The sweet, finch-like song is delivered frequently, either from the ground or from a perch, and often in abbreviated form. Toward dusk the birds often gather to roost in certain oil palms in villages, as many as 40 together, and I have heard the song as late as 9 o'clock from such a roost at Faradje.

Natives show an unusual tolerance or even affection for this village bird, and in Ruanda especially it is reported to be the subject of a sentimental legend.[2]

Near the Equator breeding takes place virtually throughout the year, as indicated by dissections and young birds. At Lukolela nesting was noted in August. Near Nzoro I watched a pair building in the thatch of a hut in April; at Faradje another pair nested in a similar situation in September. At Medje in August and September two nests were found in bunches of green bananas —a site sometimes used there by *Colius striatus* and *Lonchura cucullata*. The materials were dry grass and rootlets, the lining including two feathers. One set of two eggs, probably not complete, was greenish white, spotted thickly all over with greenish brown. Another nest contained three young. The natal down was brownish gray, darker on the crown than on the back. Jackson and Sclater gave the average dimensions of eggs as 22 by 15 mm. and stated that in Uganda *Cuculus solitarius* showed a marked preference for this wagtail as a fosterer.

Motacilla cinerea cinerea Tunstall

Motacilla cinerea TUNSTALL, 1771, Ornithologia Britannica, p. 2 (type locality: England).

Motacilla cinerea cinerea SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 337 (Ituri District). VAN SOMEREN, 1931, Jour. East Africa Uganda Nat. Hist. Soc., special suppl. no. 4, p. 26 (eastern Congo). GROTE, 1931, Mitt. Zool.

[1] 1938, Proc. 8th Internatl. Ornith. Congress, Oxford, (1934), pp. 265–276.

[2] Lestrade, 1932, Bull. Cercle Zool. Congolais, vol. 9, pp. 62, 63; also Loveridge, 1933, Bull. Mus. Comp. Zool., vol. 75, pp. 182, 183.

Mus. Berlin, vol. 17, p. 408. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 64. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 104 (Mahagi Port); 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 322. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., No. 153, pt. 2, p. 248. JACKSON, 1938, The birds of Kenya Colony and ... Uganda, vol. 2, p. 806.

SPECIMENS: Avakubi, male, February 13; female, February 13. Faradje, immature female, October 4.

ADULTS: Iris dark brown, bill dusky brown (base of mandible bluish gray in female), feet pale brown.

DISTRIBUTION OF THE SPECIES: Breeding range covers the greater part of Europe, north to southern Sweden, also the Azores, Canaries, Madeira, Atlas Mountains, and Asia east to Kamchatka. The nominate European form extends to the Canaries and the Atlas, while *M. c. schmitzi* Tschusi, with deeper coloration above, is resident on Madeira and the Azores. *M. c. caspica* Gmelin, from the Urals and Caucasus eastward, has a slightly shorter tail than *M. c. cinerea*, usually under 95 mm.

The Asiatic race migrates southward to India and even New Guinea, a few possibly reaching northeast Africa. *M. c. cinerea* visits tropical Africa in small numbers, and has been reported from the Gambia. In the Congo it was known from the vicinity of Avakubi, Faradje, and Mahagi Port, and Mr. J. M. Vrydagh tells me he collected it at Bambesa in the Uelle. In East Africa it has been found here and there, especially along mountain streams, south to Usambara. Our example from near Faradje was found along a brook in a strip of heavy forest; the pair at Avakubi were on a shady road near the river. In their winter quarters gray wagtails prefer the vicinity of water and are not likely to be found feeding in the open places favored by *Motacilla flava*. They are best distinguished from the various races of *flava* by their much longer tail, gray back, and yellowish rump.

Motacilla clara torrentium Ticehurst

Motacilla clara torrentium TICEHURST, 1940, Bull. Brit. Ornith. Club, vol. 60, p. 81 (type locality: Ngoye Forest, Zululand).

Motacilla clara NEAVE, 1910, Ibis, p. 237 (Lufupa R.). SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, no. 3, p. 331 (Ngombe in Kasai); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 90 (east of Rutshuru Plain); 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 322 (Epulu). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 62, fig. 18.

Motacilla longicauda O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p.

312 (Mpanga Forest). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 280 (Ngingwe).

Motacilla sulphurea clara KLEINSCHMIDT, 1931, Berajah, p. 9, pl. 3, fig. 3, pl. 4, fig. 3.

Motacilla cinerea clara HARTERT AND STEINBACHER, 1933, Die Vögel der paläarktischen Fauna, suppl. vol., p. 148.

SPECIMENS: Medje: male, female, June 28; two juveniles, March 18.

ADULTS OF BOTH SEXES: Iris rather dark brown, bill black, feet pinkish gray.

DISTRIBUTION OF THE SPECIES: Eastern Cape Province north to Abyssinia, the Cameroon, and the interior of Sierra Leone. *M. c. clara* Sharpe of Abyssinia has the wing approximately 82–90 mm., while in birds from all other regions the length is 73–84 mm. It is a pity, however, that Ticehurst chose a Zululand bird as the type of *torrentium*, since those of the Congo and Cameroon are not only smaller than those of Abyssinia, but markedly darker gray on crown and back. South African specimens differ little if at all from *M. c. clara* in color, and East African examples are intermediate in this respect.

Unless this western form is given a new name, *torrentium* is to be regarded as ranging from South Africa to Kenya Colony, Angola, the northern Congo, the Cameroon, and Sierra Leone. Nine specimens which I have measured from Toro, the vicinity of Rutshuru, Medje in the Ituri District, Kango in the Gaboon, and Nkongsamba, Cameroon, have wings only 73–81 mm., tails 80–87 mm.

The mountain wagtail is a bird of very local distribution, largely because of its liking for dashing brooks, but it is not entirely restricted to highlands. In Liberia it was collected on the Dukwia River, in the Cameroon at Victoria, near the Gaboon River; and near Medje we saw it twice along brooks in the heavy lowland forest at about 2000 feet. Two nestlings were brought to us there by natives. Brother Hutsebaut found it also on the Epulu River, and Schouteden collected this wagtail in the Kasai. It is, to be sure, more characteristic of streams like the Butahu on west Ruwenzori, where it was to be seen at 6500 feet, the Biakobe, northwest of Lake Edward, or the Bitukura and Ivui on the eastern margin of the Rutshuru Valley, near 4000 feet. Often in pairs, it feeds along the water's edge or on fallen trees, and twice was watched catching sitting butterflies.

In southern Africa nests are usually placed on mossy ledges of rock along streams, built of grass and lined with rootlets. Eggs are two to three, light gray freckled or clouded with brown, 20–20.5 mm. by 14–15.5 mm. Occasionally the nest is placed on a low tree, in a mass of debris, or even in a native hut close to water.

The juvenile plumage is remarkably similar to that of the adult, except that the gray of upperparts is less bluish. The natal down is brownish gray.

Motacilla capensis wellsi Ogilvie-Grant

Motacilla wellsi O.-GRANT, 1911, Bull. Brit. Ornith. Club, vol. 29, p. 30 (type locality: Kigezi, southwestern Uganda).

Motacilla capensis REICHENOW, 1911, Wiss. Erbeg. Deutschen Zentral-Afrika Exped., vol. 3, p. 339 (Kisenyi). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 279 (Moera; Tsisilongo).

Motacilla capensis wellsi NEUMANN, 1929, Ornith. Monatsber., p. 177 (Kivu; L. Edward; "Ruwenzori"). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 337. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 22, p. 123 (Ngoma; Lulenga); 1933, idem, vol. 22, p. 377; 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 90 (Kibumba); 1940, Bull. Cercle Zool. Congolais, vol. 16, p. 72 (Kibingo in Ruanda); 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 322 (Rutshuru); 1942, idem, vol. 36, p. 336. FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 295 (Ruanda). JACKSON, 1938, The birds of Kenya Colony and ... Uganda, vol. 2, p. 805. PETERS AND LOVERIDGE, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 260 (Mushongero on L. Mutanda).

Motacilla budytes wellsi KLEINSCHMIDT, 1933, Berajah, p. 5, pl. 5, fig. 2.

DISTRIBUTION OF THE SPECIES: Cape Province north to Angola, the eastern Congo, Uganda, and the base of Mt. Kenya. Three subspecies are easily distinguished: *M. c. capensis* Linnaeus, from the Cape to Portuguese East Africa and Damaraland; *M. c. wellsi* of eastern Africa, which resembles the nominate race in having a complete dark crescent on the chest, but is darker in color above; and *M. c. simplicissima* of the Rhodesian-Angolan plateau, with only a diffuse dusky spot on the middle of the chest.

Wells's wagtail ranges from the highlands of Kenya Colony to those of the eastern Congo, from the Lendu Plateau south to Ruanda and the shores of Lake Kivu. It approaches the eastern edge of the Congo forests very closely, but is usually found only above 3000 feet and does not enter the mountain forest. I have collected specimens at Masikini, 5500 feet, near Djugu, on the

Luhule River 35 km. southwest of Beni, and at Rutshuru and Burunga in the Kivu. Others were seen in the eastern Rutshuru Valley at 4300 feet and in the Kigezi District up to 8500 feet. Rudolf Grauer obtained specimens on the lower slopes of the western Kivu Volcanoes at around 7600 feet, on Idjwi Island in Lake Kivu, and between Mkingo and Mvulera.

In general behavior this wagtail is not unusual. It frequents the banks of streams, borders of papyrus swamps, and even at times open spaces near houses. It may be found together with *M. a. vidua*, but is frequently much shyer. A nest found by Jackson in Kenya Colony in April was well hidden under a tuft of drooping grass at the edge of a small marsh. Built of grasses, it contained three eggs, like those of the South African race, which are dull yellowish, rather finely speckled with brownish, about 20 by 14.5 mm.

Motacilla capensis simplicissima Neumann

Motacilla capensis simplicissima NEUMANN, 1929, Ornith. Monatsber., p. 176 (type locality: Chipepe, Bailundo, Angola; also from L. Bangweolo). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 74 (Ndola; Missão de Luz). SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 322 (Sakania; Kando)

Motacilla budytes simplicissima KLEINSCHMIDT, 1933, Berajah, p. 5, pl. 5, fig. 1.

DISTRIBUTION: Highlands of Angola, the Katanga, and Northern Rhodesia, from the Bailundo country and Mossamedes east to Lake Bangweolo, and south to the Chobe River. Within our limits it has been taken at only a few localities in the Upper Katanga by de Witte and Brédo, so it seems to be not at all common.

KEY TO THE RACES OF *Motacilla flava* LIKELY TO OCCUR IN THE CONGO (ADULT MALES ONLY)

1. Forehead, crown, and ear-coverts black ..... *feldegg*
   Crown grayish, greenish, or yellow 2
2. Whole throat white, crown gray ..... *cinereocapilla*
   Throat yellow, a little white at most on chin 3
3. Crown gray 4
   Crown green or yellow 7
4. Crown dark slate gray, ear-coverts blackish, superciliary stripe usually lacking ..... *thunbergi*
   Crown lighter gray, light superciliary stripe usually present 5
5. Crown very pale gray, white superciliary stripe broad ..... *beema*
   Crown and forehead not very pale gray 6

6. Crown ashy gray, ear-coverts not much darker, superciliary line usually present, white ..... *flava*
   Crown a little darker gray, ear-coverts blackish, a white superciliary line .. .. *dombrowskii*
7. Crown yellowish green, superciliary stripe much purer yellow, ear-coverts greenish ..... *flavissima*
   Forehead and crown bright yellow, ear-coverts also yellow, so superciliary stripe is like them ..... *lutea*

Motacilla flava flavissima Blyth

Motacilla flavissima BLYTH, 1834, Loudon's Mag., vol. 7, p. 342 (type locality: England).

? *Motacilla campestris* SHARPE, 1890, *in* Jameson, The story of the rear column, p. 415 (Yambuya). SHELLEY, 1890, Ibis, p. 164; 1900, The birds of Africa, vol. 2, p. 283.

? *Budytes campestris* REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 306.

Motacilla flava rayi HARTERT, 1905, Die Vögel der paläarktischen Fauna, vol. 1, p. 294 (Congo). GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 13.

Budytes flavus rayi SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 339 (Congo R.). VAN SOMEREN, 1931, Jour. East Africa Uganda Nat. Hist. Soc., special supplement no. 4, p. 27. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 68. JACKSON, 1938, The birds of Kenya Colony and ... Uganda, vol. 2, p. 811.

Motacilla (Budytes) flava flavissima SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 323 (Buta; Mawambi; Semliki).

SPECIMEN: Avakubi, male, January 4.

DISTRIBUTION OF THE SPECIES: British Isles, Europe, Morocco, and Egypt eastward across Asia to northeastern Siberia and western Alaska. Within that vast breeding area it is divisible into about 18 subspecies.[1] Eleven of them migrate more or less extensively into Africa, six having been recorded from Congo territory.

Most of the immature yellow wagtails that are found in equatorial Africa in numbers from October onward are so dull in color that their race cannot be determined. Such specimens we collected at Avakubi on October 4, October 11, and November 4, at Ngayu on December 14 and 16, and at Faradje on October 18. For the same reason I cannot give exact migration dates for the various subspecies. In 1912 I noted the first yellow wagtail at Faradje on September 22, in 1911 on September 27. The first

[1] See Hartert, 1905, Die Vögel der paläarktischen Fauna, vol. 1, pp. 287–295; 1921, idem, vol. 3, pp. 2096–2098; 1923, idem, Nachtrag 1, pp. 31, 32; Hartert and Steinbacher, 1933, Die Vögel der paläarktischen Fauna, suppl. vol., pp. 141–146.

arrival at Medje in 1910 was on September 28. In 1909 at Avakubi the first date was October 4. The date of their disappearance, in the region from Medje to Faradje, is about April 15, sometimes a few days later. Grote[1] has compiled all the available dates for 11 different races wintering in Africa.

In a large part of the Congo yellow wagtails are seen during the northern winter singly or in loose flocks on river banks, about villages, roads, cultivated land, and pastures. They have a weak "tseeping" call and seldom or never sing. After the prenuptial molt has begun, subspecific determination becomes much easier, and soon the males can be identified with a field glass. The races of most frequent occurrence are the gray-crowned *M. f. flava* and *thunbergi*, though the green-crowned *flavissima* is not rare. The black-crowned *feldegg* seems to stray less from muddy or marshy spots than the other forms. *M. f. lutea* reaches the Congo mainly in the southeast, while *beema*, *dombrowskii*, and *cinereocapilla* are either rare or of doubtful occurrence.

Motacilla flava flavissima breeds in England, the southern half of Scotland, Ireland, and western France. It winters in Africa from Senegal to the Benue River, the Ituri District, and in eastern Africa south to Nyasaland.[2] Our specimen from Avakubi was a male in the second year which had already assumed its first nuptial plumage on head and throat. The crown of this race is yellowish green, the superciliary stripe yellow.

Motacilla flava lutea (Gmelin)

Parus luteus S. G. GMELIN, 1774, Reise durch Russland, vol. 2, p. 110, pl. 20 (type locality: Astrakhan).

Motacilla flava campestris HARTERT, 1905, Die Vögel der paläarktischen Fauna, vol. 1, p. 295.

Motacilla campestris NEAVE, 1910, Ibis, p. 237 (Loangwa Valley).

Motacilla flava lutea GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 13 ("Katanga").

DISTRIBUTION: Breeds in the region north of the Caspian Sea, the northern Kirghiz Steppes, and Semipalatinsk. Migrates south through northeastern Africa to Tanganyika Territory, Zanzibar, Marungu, Barotseland, Transvaal, and Natal.

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[1] 1930, Mitt. Zool. Mus. Berlin, vol. 16, pp. 10–15; 1931, idem, vol. 17, p. 408; 1937, idem, vol. 22, p. 48.

[2] Benson, 1940, Ibis, p. 586.

Because its breeding range overlaps that of *M. f. beema*, Sushkin regarded the yellow-headed *lutea* as a distinct species, while Grote[1] preferred to treat it as a mutant form which interbreeds freely with its gray-headed associates. Grant and Mackworth-Praed,[2] however, separate *flava*, *lutea*, and *feldegg* as valid species. So much attention has been given by European workers to intermediates between them that this course is not justified.

In adult males of *M. f. lutea* the crown and ear-coverts are often so yellow that the superciliary stripe is scarcely apparent. This race does not reach West Africa, and the few Congo specimens come from its southeastern corner. The example reported from the lower Aruwimi River as *campestris* by Shelley[3] cannot have been *lutea*, for Jameson had noted its crown as "dark grey tinged with olive green. Line of lemon passing over eye to ear-coverts. Cheeks olive-green. Throat bright lemon yellow." It is best referred to *flavissima*.

We never saw *lutea* in the Uelle, Ituri, or Kivu districts, and, so far as I know, Neave did not actually secure it within the limits of the Katanga. But at Lake Suzi in southern Marungu on March 21, Rockefeller and Murphy took a male of *lutea* in full breeding plumage, and a female presumably of the same race.

Motacilla flava flava Linnaeus

Motacilla flava LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 185 (type locality: southern Sweden). NEAVE, 1910, Ibis, p. 237 (L. Bangweolo). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 312 (Mubuku Valley, 6000 ft.).

? *Motacilla cinereocapilla* DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, p. 148 (L. Tanganyika).

? *Budytes flavus* SCHALOW, 1886, Jour. Ornith., pp. 432, 436 (Dikulwe R.; Katapena). MATSCHIE, 1887, Jour. Ornith., p. 156. REICHENOW, 1887, Jour. Ornith., p. 307 (Stanleyville); 1904, Die Vögel Afrikas, vol. 3, p. 303; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 340 (L. Edward; Kisenyi). EMIN, 1894, Jour. Ornith., p. 163 (Ndussuma); 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 53 (Kajandsa on L. Albert). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 280 (Beni; Mai-na-Kwenda; Mokoto; Kibati; Irumu); 1932, idem, vol. 22, p. 122 (Ngoma; Usumbura); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 90 (Kibumba; Kimboho). SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 40 (Baraka; Beni–Mawambi).

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[1] 1937, Ornith. Monatsber., pp. 162–166, 1 map.

[2] 1942, Bull. Brit. Ornith. Club, vol. 62, pp. 58, 59.

[3] 1890, Ibis, p. 164.

Motacilla campestris OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127.

Motacilla cinereicapilla SHELLEY, 1900, The birds of Africa, vol. 2, p. 287.

? *Budytes cinereocapillus* DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (Bumba).

Budytes flavus flavus BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 323 (Congo R. mouth); 1936, The birds of tropical West Africa, vol. 4, p. 65. SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 196 (Banc d'Anvers near Boma); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 104 (Buta). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 338.

Motacilla flava flava GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 78 (Kabare). GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 11 (L. Bangweolo).

? *Budytes flava* EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, pp. 43, 60 (Mswa; Kassinje I. on L. Albert).

? *Budytes flava* v. *cinereocapilla* EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 82 (Tunguru).

Motacilla (Budytes) flava flava SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 322 (Tshela; Kunungu; Bambesa; Alipago; Buta; Kibumba; Beni; Mai-na-Kwenda; Kibati; Gabiro).

Motacilla flava flava SCHOUTEDEN, 1943, Rev. Zool. Bot. Africaines, vol. 37, p. 270.

Budytes flava flava BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 70 (Ouadda).

SPECIMEN: Medje, male adult, October 3.

DISTRIBUTION: Breeds over the greater part of continental Europe, from middle Scandinavia and Russia to the Pyrenees and northern Italy. Winters in Africa from Senegal to Southern Nigeria and the Congo south to the Mayombe, Bolobo, Kivu, and Katanga. Through eastern Africa it travels south to Natal, but is seems rare or wanting in the Kasai region, Angola, and Southwest Africa. While apparently it is the best represented race in the whole Congo area, a number of the older binomial references are not reliable as to the subspecies.

Adult males of the race *flava* have crown and ear-coverts ashy gray, a rather conspicuous white eyebrow, and yellow throat. I obtained one in spring plumage at Luofu, March 18, 1927, and the records given by Schouteden (1940) are from many different districts.

Motacilla flava dombrowskii (Tshusi)

Budytes flavus dombrowskii TSHUSI ZU SCHMIDHOFFEN, 1903, Ornith. Jahrb., vol. 14, p. 161 (type locality: Rumania).

Motacilla (Budytes) flava dombrovskii SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 323 (Buta).

DISTRIBUTION: Breeding from southern Poland and Rumania to the lower Volga River, it winters mainly in the eastern Sudan, and probably along the Persian Gulf. There are no records for Uganda and East Africa, but a single specimen taken at Buta in the Uelle District by Brother Joseph Hutsebaut has been identified with this race by Claude Grant. Its crown is slightly darker than that of *flava*, though it usually retains a white superciliary line.

[*Motacilla flava cinereocapilla* Savi]

Motacilla cinereocapilla SAVI, 1831, Nuovo Gior. Letterati, no. 57, p. 190 (type locality: Italy).

Motacilla flava cinereocapilla HARTERT, 1905, Die Vögel der paläarktischen Fauna, vol. 1, p. 292. GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 13 (Lado).

Found in summer from Sicily and Italy to west central Yugoslavia. Winter quarters are apparently from the upper Niger east to Lado, Entebbe on the north shore of Lake Victoria, and Abyssinia. There is no actual record for the Congo, but an occasional winter wanderer may be expected in the Upper Uelle or near Lake Albert.

Motacilla flava cinereocapilla has moderately dark gray crown and ear-coverts, but a white throat. A narrow white superciliary line, if present, does not extend in front of the eye.

[*Motacilla flava beema* (Sykes)]

Budytes beema SYKES, 1832, Proc. Zool. Soc. London, p. 90 (type locality: Deccan, India).

The breeding range is in western Siberia, and winter quarters are largely in India. But adult male specimens have been taken in Kenya Colony at Nairobi and Kisumu, and one from Kabare on Lake Edward was referred to this race. While Grant and Mackworth-Praed state that Glydenstolpe's specimen is really *thunbergi*, Gill[1] finds that a bird taken by Stoehr at Dambo, middle Zambesi River, March 3, 1905, is certainly *M. f. beema*, so it is still possible that an occasional individual may reach the eastern Congo.

The adult male of this race has a very pale gray crown and ear-coverts, with wide white superciliary line.

[1] 1941, Ibis, p. 176.

Motacilla flava thunbergi Billberg

Motacilla thunbergi BILLBERG, 1828, Synopsis faunae Scandinaviae, vol. 1, pt. 2, p. 50 (type locality: Lapland).

Motacilla borealis NEAVE, 1910, Ibis, p. 237 (Mazanguli in Lualaba Valley).

? *Budytes flavus* SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 183 (Mswa).

Budytes borealis SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 40 (Baraka; Irumu).

Motacilla flava beema GYLDENSTOLPE, 1924, K. Svenska Vetensk. Adad. Handl., ser. 3, vol. 1, no. 3, p. 78 (Kabare). GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 12 (L. Edward).

Budytes flavus borealis SCHOUTEDEN, 1925, Rev. Zool. Africaine, vol. 13, p. 13 (Bolobo).

Budytes flavus beema SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 339 ("L. Albert"). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 104.

Budytes flava thunbergi FRIEDMANN, 1930, The African Republic of Liberia and the Belgian Congo, vol. 2, p. 762 (Bumba; Ibambi; Luluabourg).

Motacilla flava thunbergi GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 12 (Bolobo; Irumu; north end of Tanganyika; Katanga). GRANT AND M.-PRAED, 1939, Bull. Brit. Ornith. Club, vol. 59, p. 160 (Kabare).

Budytes flavus thunbergi BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 68 (upper Lualaba Valley). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 104 (Buta; Adra; Mauda); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 336 (Astrida; Kibingo). PETERS AND LOVERIDGE, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 260 (Mushongero on L. Mutanda).

Motacilla (Budytes) flava thunbergi SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 322 (Boma; Banc d'Anvers; Bolobo; Bumba; Buta; Bambesa; Mauda; Adra; Irumu; Beni; Lubero; Mokoto; Kisenyi; Kibati; Rutshuru; Ngoma; Usumbura; Kibingo; Kando).

SPECIMEN: Ibambi, near Medje, male, April 12.

DISTRIBUTION: Breeds in northern Scandinavia, northern Russia, and Siberia, migrates to the Malay Peninsula, Ceylon, and Africa south to Nyasaland, eastern Congo south to the Katanga, Kasai District, the lower Congo River, Fernando Po, Southern Nigeria, and Sierra Leone.

This is perhaps as common a winter visitor to the Congo as *M. f. flava*, and its southern limits here are much the same. The two can be distinguished in adult plumage by the much darker head of *thunbergi*, often without a trace of a light temporal line.

Of 10 *M. flava* collected by Father Callewaert at Luluabourg between November 10 and February 1, only one is in fairly complete nuptial dress. It is a male of *M. f. thunbergi*.

Motacilla flava feldegg Michahelles

Motacilla feldegg MICHAHELLES, 1830, Isis, p. 812 (type locality: southern Dalmatia).

Budytes melanocephala EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 82 (Tunguru).

Budytes feldegg feldegg SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 104 (Uelle).

SPECIMENS: Avakubi, male, January 15. Faradje, two males, February 8, March 10. Aba, male, December 18.

ADULT MALE: Iris dark brown; bill brownish black with base of mandible light gray; feet brownish black.

DISTRIBUTION: Breeds from southern Dalmatia through Greece, Turkey, and Asia Minor to the Caucasus. Migrates to northeastern Africa, reaching the eastern Sudan, the Ituri River, Lakes Kivu and Victoria, and Nairobi. Occurrence as far south as the Transvaal is exceptional.

This black-crowned race has black ear-coverts and little if any trace of a light superciliary line. It is not uncommon in the northeastern Uelle District during the dry season, and occasionally reaches the forested Ituri River. Near Avakubi examples were seen on a bar of mud and gravel left bare by the ebbing river. About Faradje *M. f. feldegg* differed from other races of the species in that it was never found away from muddy marshy spots. The gray-headed forms visited such places, but were equally common on bare or cultivated land far from water. Rudolf Grauer collected three specimens of *feldegg* on January 18 and 19 at the south end of Lake Edward, where they rested on aquatic plants. Vrydagh reports seeing a couple at Kisenyi on Lake Kivu. The fondness of yellow wagtails for grazing cattle is well known in Europe. In Uganda Jackson noticed this as characteristic of *M. f. flava*, less so of *lutea*, and not exhibited at all by *thunbergi* or *feldegg*.

FAMILY **PYCNONOTIDAE**. BULBULS

KEY TO THE GENERA OCCURRING IN THE CONGO

1. Two or several small notches in cutting edge of maxilla just behind tip . . . 2
   Only one subterminal notch on each side of maxilla 3
2. Upperparts yellowish green, underparts wholly yellow; bill rather slender and light brown, with two notches . . . . . *Calyptocichla* (p. 122)
   Upperparts darker olive, crown sometimes grayish, underparts greenish, dull yellowish, or gray; maxilla of most species with several notches, and rather dark . . . . . *Andropadus* (p. 103)

3. Chest crossed by a wide glossy black band..... *Neolestes* (p. 154)
   Chest never with distinct black band.....4
4. Whole head, throat, and back dark brown, face shading to blackish; no green in plumage, but under tail-coverts usually yellow..... ..... *Pycnonotus* (p. 147)
   Throat never dark brown like crown, and the species without green do not have yellow under tail-coverts.....5
5. Wing-coverts and inner secondaries with conspicuous spots of white or yellow at tips.....6
   No distinct light spots on upper surface of wing.....7
6. Wing spots greenish white, rump similarly spotted; three outer pairs of rectrices wholly white; bill not hooked..... *Ixonotus* (p. 127)
   Wing spots light yellow, rump not spotted; tail green and yellow; bill hooked, shrike-like..... *Nicator* (p. 182)
7. At least three pairs of outer rectrices entirely white, or white with narrow black tips..... *Baeopogon* (p. 122)
   Outer rectrices not white at base, though sometimes tipped with white or yellow.....8

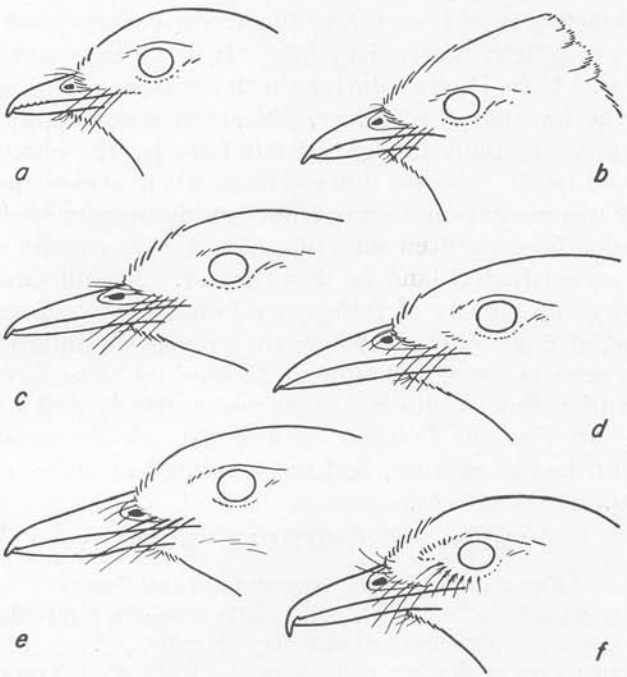

FIG. 6. Various forms of beak among the Pycnonotidae. A. *Andropadus virens*. B. *Pycnonotus barbatus*. C. *Phyllastrephus flavostriatus*. D. *Thescelocichla leucopleura*. E. *Bleda syndactyla*. F. *Nicator chloris*. All natural size.

8. Most of outer rectrices broadly tipped with white, their bases dark brown; wing more than 100 mm. long ..... *Thescelocichla* (p. 136)
   Outer rectrices not tipped with white 9
9. Throat feathers white, somewhat lengthened, forming a beard; crown with a low crest, hair-like filoplumes on nape or hind neck at least 25 mm. long ..... *Criniger* (p. 129)
   Throat feathers not lengthened, though sometimes white; head not crested, and nuchal filoplumes, if present, branched and less than 20 mm. long 10
10. Bill rather short, moderately broad, thrush-like 11
    Bill relatively longer and more compressed, occasionally hooked 13
11. Throat ashy or bluish gray, rest of head gray, somewhat darker; culmen to base scarcely exceeding 17 mm. ..... *Arizelocichla* (p. 118)
    Throat whitish, yellowish, or bright yellow, usually very different from crown; culmen often exceeding 17 mm. 12
12. Crown gray, throat whitish, tail reddish brown ..... *Pyrrhurus* (p. 156)
    Crown never clear gray, tail never rufous, upperparts olive or brown, throat whitish to yellow ..... *Chlorocichla* (p. 137)
13. Bill strong and much compressed, deeper than wide at nostril, often slightly hooked ..... *Bleda* (p. 175)
    Bill less compressed, about as wide as deep at nostril 14
14. Tail reddish brown, crown gray with no light stripe above eye; wing 95–116 mm. ..... *Pyrrhurus* (p. 156)
    Coloration not as described, or else wing less than 93 mm. long 15
15. Culmen somewhat decurved over its whole length, bill moderately stout ..... *Chlorocichla* (p. 137)
    Culmen nearly straight except near tip, bill markedly long and slender .... *Phyllastrephus* (p. 159)

KEY TO THE SPECIES OF *Andropadus* LIVING IN OR NEAR THE CONGO

1. Only two notches in maxilla; throat and whole breast gray with only a tinge of olive, under wing-coverts and lining of remiges buffy brown, "axillaries" more ochreous ..... *A. gracilirostris*
   More than two notches in maxillary tomium; under wing-coverts lighter and more yellowish or greenish, breast usually more olive or yellowish 2
2. A conspicuous yellow stripe on each side of throat ..... *A. latirostris*
   No distinct stripes on throat 3
3. Bill broad, its width at nostril greater than its depth; throat olive, little more grayish than breast, crown olive ..... *A. virens*
   Bill relatively narrower, its width at nostril about equal to depth 4
4. Bill relatively stout, more than 5 mm. deep at nostril; whole under surface dull yellowish, dark on chest; wing usually exceeding 82 mm. .... *A. importunus*
   Bill slender, less than 5 mm. deep at nostril; under surface more olive or grayish, throat distinctly grayish; wing not over 84 mm. 5
5. Larger: tail exceeding 65 mm., wings 74–84 mm.; no pale feathering on eyelids ..... *A. curvirostris*

Smaller: tail usually less than 65 mm., wings 65–74 mm.; pale gray feathering on upper and lower eyelids.....6

6. Lower breast, flanks, and abdomen with a distinct wash of yellowish green.....*A. gracilis*

Underparts not washed with green, but gray in mid-line, more brownish on flanks; under tail-coverts of a warm brown, slightly edged with yellowish.....*A. ansorgei*

Andropadus curvirostris curvirostris Cassin

Andropadus curvirostris CASSIN, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 46 (type locality: Camma R., Gaboon). SHARPE, 1890, *in* Jameson, Story of the rear column, p. 399 (between Matadi and Stanley Pool; Lower Congo). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127 (Ubangi). REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 413 (Kinyawanga); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 345. LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 17 (Mukimbungu); 1917, idem, vol. 10, no. 24, p. 28. SCHOUTEDEN, 1914, Rev. Zool. Africaine, vol. 3, p. 271 (Kilo); 1918, idem, vol. 5, p. 283 (Zambo; Lesse); 1923, idem, vol. 11, p. 331 (Basongo; Kamaiembi; Ngombe in Kasai; Luebo); 1925, idem, vol. 13, p. 13 (Kunungu; Mongende; Bolobo); 1926, idem, vol. 13, p. 196 (Makaia Ntete; Temvo); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 109 (Poko; Mauda; Abimva; Bondo Mabe; Rungu; Kotili; Panga; Nava R.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 272 (Beni; Moera; Mawambi; Ukaika). BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 25. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 394. CAVE, 1938, Sudan Notes and Records, vol. 21, p. 177 (source of Yubo R.). JACKSON, 1938, The birds of Kenya Colony and ... Uganda, vol. 2, p. 879.

Andropadus alexandri OUSTALET, 1892, Naturaliste, ser. 2, vol. 6, p. 231 (type locality: Bangui); 1893, idem, vol. 7, p. 127. BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 407 (Uelle R. ?).

Andropadus curvirostris alexandri REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 414.

Andropadus curvirostris curvirostris BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 406; 1936, The birds of tropical West Africa, vol. 4, p. 187. GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 181 (Kartushi; Kampi-na-Mambuti; Simbo). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 566 (Saidi in Ituri). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 72 (Bangui).

Pycnonotus curvirostris DELACOUR., 1943, Zoologica, vol. 28, p. 23.

SPECIMENS: Boma, immature female, January 24. Avakubi, male, November 23, two immature males, October 16. Ngayu, female, December 19. Bafwabaka, female, December 30. Niangara, male, female, November 29; immature male, November 26.

ADULTS OF BOTH SEXES: Iris dark brown to dark reddish brown; bill dusky gray or blackish; feet dark green to dark greenish gray.

DISTRIBUTION OF THE SPECIES: Heavy forests from Sierra Leone to the Cameroon, Congo, Uganda, Lotti Forest, and western Kenya Colony, south to the Kasai District, and northern Angola. *A. c. leoninus* Bates, of Sierra Leone and the Upper Guinea forest east to Ashanti, is darker, more brownish above than *A. c. curvirostris*, which ranges from the Gold Coast to the whole Lower Guinea forest and the island of Fernando Po. The latter race extends northward to the Congo-Sudan border, eastward to the base of Mt. Elgon and the North Kavirondo District, but is lacking in the highlands of the Kivu. On the south it occurs in the gallery forests of the Kasai and the Lower Congo, while specimens from Canhoca in northern Angola differ slightly in having longer tails.

In all the lowland forests of the Congo this dark olive bulbul with slender bill is a common bird. Care must be taken to distinguish it from the very similar, but smaller *A. g. gracilis*. The feathering of the eyelids in *A. curvirostris* is gray, but not conspicuously different from adjacent feathering of the head. In *gracilis* it is markedly paler. The wings of *A. c. curvirostris* usually measure 74–84 mm., tails 66–76 mm. *A. g. gracilis* has wings 65–74 mm., tails 58–65 mm. In both species the males are larger than females. The case is rather similar to that of the two long-billed bulbuls, *Phyllastrephus xavieri* and *P. icterinus*. But it is complicated by the fact that from Southern Nigeria to the Kavirondo District there is a third species, *Andropadus ansorgei*, small like *A. gracilis*, but more grayish on the under side.

From my experience in various parts of the Upper Congo forest it was clear that these three species of *Andropadus* lived together in both primary forest and second growth, frequenting the lower boughs of high trees as well as the undergrowth, and never forming parties. They are much more silent than *A. virens* or *A. latirostris*, and I do not know that *curvirostris* differs by its voice from *gracilis*.

The nest and eggs seem to be unknown, but dissections of *A. curvirostris* indicate irregular nesting throughout the whole year save for a few of the driest months.

Of six stomachs examined, five held small fruits of various kinds, and two some remains of insects.

Andropadus gracilis gracilis Cabanis

Andropadus gracilis CABANIS, 1880, Ornith. Centralbl., p. 174 (type locality:

Angola). REICHENOW, 1887, Jour. Ornith., p. 301 (Manyanga); 1904, Die Vögel Afrikas, vol. 3, p. 414 (Kinyawanga; Bundeko); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 345. HARTERT, 1900, Novitates Zool., vol. 7, p. 47 (Kitima in Ituri). DUBOIS, 1905, Ann. Mus. Congo, Zool., ser. 4, vol. 1, fasc. 1, p. 32 (Kisantu). O.-GRANT, 1908, Ibis, p. 303 (Ponthierville); 1910, Trans. Zool. Soc. London, vol. 19, p. 385 (Beni; Irumu; Mawambi). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 283; 1923, idem, vol. 11, p. 331 (Basongo; Makumbi; Luebo; Kabambaie; Ngombe in Kasai); 1924, idem, vol. 12, p. 416 (Eala; Tondu). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 566 (Saidi in Ituri).

Andropadus curvirostris OUSTALET, 1892, Naturaliste, ser. 2, vol. 6, p. 231 (Brazzaville).

Andropadus gracilis gracilis BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 406. FRIEDMANN, 1930, The African Republic of Liberia and the Belgian Congo, vol. 2, p. 758 (Kinshasa). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 190.

Andropadus gracilis extremus BANNERMAN, 1923, Ibis, p. 709 (probably northern Belgian Congo); 1924, Rev. Zool. Africaine, vol. 12, p. 26.

Charitillas gracilis gracilis GYLDENSTOLPE, 1924, K. Svenska Vetensk. Adad. Handl., ser. 3, vol. 1, no. 3, p. 184 (Kartushi; Lesse; Malisawa; Bopu; Kampi-na-Mambuti; Irumu). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 392. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 109 (Kotili; Panga; Rungu; Buta). JACKSON, 1938, The birds of Kenya Colony and ... Uganda, vol. 2, p. 876. VERHEYEN, 1939, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 15, no. 66, p. 5 (Bambesa). VAN SOMEREN, 1946, Bull. Brit. Ornith. Club, vol. 67, p. 35 (Bwamba district).

Charitillas gracilis LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 76 (Luluabourg). GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 180.

SPECIMENS: Leopoldville, male, December 22. Avakubi, female, October 26. Ngayu, two males, December 14, 25; immature male, December 22. Gamangui, male, February 2. Medje, male, August 21. Niangara, female, November 29.

ADULTS: Iris dark brown, bill blackish brown, feet brownish green.

DISTRIBUTION OF THE SPECIES: Southern French Guinea and Sierra Leone eastward to the Cameroon, Congo, Uganda, and Nyarondo in western Kenya Colony, south to Luluabourg in the Kasai and presumably to northern Angola.

Andropadus gracilis differs from *curvirostris* mainly by being of smaller size and having a more whitish eye ring. *A. g. extremus* Hartert, ranging from Sierra Leone to Southern Nigeria, is more yellowish green on its lower underparts and perhaps a little lighter gray on the throat than *A. g. gracilis* of the Cameroon-Congo

forest. The latter race is slightly washed with yellowish green below, and it extends from the vicinity of Mt. Cameroon to Uganda and Kavirondo, northward into the gallery forests of the Uelle and southward into those of the Kasai. I have seen no recent specimen from northern Angola. *A. g. ugandae* Van Someren seems not to be separable.

Within our limits *A. g. gracilis* is found in the same forest areas as *curvirostris*, and probably in about equal numbers. The habits are the same, and the weak voice of *gracilis*, which answers for a song, consists of three whistled syllables scarcely likely to attract attention. The season of reproduction extends throughout most of the year, with the possible exception of a couple of dry months. In the northern Ituri we took adults in full sexual activity in February, August, and November. Three stomachs examined held only small berries and seeds from fruit.

Andropadus ansorgei muniensis Grote

Andropadus ansorgei muniensis GROTE, 1924, Ornith. Monatsber., p. 70 (type locality: Akonangi, Spanish Guinea). RAND, 1951, Fieldiana: Zool., vol. 32, p. 616.

Andropadus gracilis subsp., BANNERMAN, 1923, Ibis, p. 709 (Congo Forest; Libokwa).

SPECIMENS: Avakubi, male, July 18, Ngayu, male, December 17. Medje, female, March 12.

ADULT MALE: Iris rather dark brown; bill dusky, with tip of mandible slightly lighter; feet brownish green.

DISTRIBUTION OF THE SPECIES: Southern Nigeria, forested Cameroon, Spanish Guinea, and probably the Gaboon, eastward to the Upper Congo forest and the North Kavirondo District. This small bulbul is amazingly similar to *A. gracilis* except for its nearly complete loss of greenish coloration on breast, flanks, and under tail-coverts. The upperparts are of much the same coloration in both species.

For many years I was skeptical of the specific nature of *Andropadus ansorgei* Hartert,[1] but specimens lent me by S. Marchant and W. Serle from Southern Nigeria and British Cameroons, those in the Rothschild Collection, and others I had myself collected in the northeastern Congo forest finally convinced me that it must be a fact. At Angumu as well, in 1937, I secured both

[1] 1907, Bull. Brit. Ornith. Club, vol. 21, p. 10 (Degama, Southern Nigeria).

ansorgei and *gracilis*. Some of the references to *A. gracilis* quoted above may very probably be based on specimens of the gray-breasted *ansorgei*. From the remarks by Sassi (1916, p. 272) under *A. curvirostris*, one may be fairly certain that Grauer did take some specimens of *A. ansorgei* near Beni, Moera, and Mawambi.

None of us has been able to find anything in the haunts, behavior, or voice that would distinguish *Andropadus ansorgei* from *A. gracilis*. Although I here accept the name *muniensis* for a Lower Guinea race, our Upper Congo specimens are really not larger than those of nominate *ansorgei* from Southern Nigeria, for two males have wings 70, 74 mm., tails 61, 61.5 mm., and two females have wings 69, 70 mm., tails 58, 59 mm. I find that five males from Southern Nigeria have wings 72–77 mm., and three females have wings 68–69 mm. Any difference in color is difficult to see.

Andropadus ansorgei kavirondensis (Van Someren) of the North Kavirondo District, on the other hand, is more readily distinguished, being lighter gray on the breast, less brownish on the flanks, and perhaps a little lighter in color above. Wings (of both sexes) measure 69 to 78 mm. It is strange that no form of *A. ansorgei* has yet been found in the forests of central Uganda. The Upper Congo race, here called *muniensis*, appears to reach the eastern edge of the forest near Beni. In the Ituri it probably breeds through the whole rainy season, for a female at Medje on March 12 had a soft egg in the oviduct, and a male at Avakubi on July 18 had enlarged gonads. A nest has not yet been found.

[*Andropadus importunus oleaginus* Peters]

Andropadus oleaginus PETERS, 1868, Jour. Ornith., p. 133 (type locality: Lourenço Marques, Portuguese East Africa). NEAVE, 1907, Mem. Proc. Manchester Lit. Phil. Soc., vol. 51, no. 10, p. 58 (Kafulafuta R. in Northern Rhodesia).

? *Andropadus flavescens* SCHALOW, 1886, Jour. Ornith., p. 414 (eastern Marungu); 1887, idem, p. 242. MATSCHIE, 1887, Jour. Ornith., p. 155 (Mpala).

? *Andropadus insularis* REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 408.

Andropadus insularis oleaginus WINTERBOTTOM, 1939, Revised check list of the birds of Northern Rhodesia, p. 49 (near Ndola).

This common green bulbul of the East Coast ranges from the Juba River in Southern Somaliland south to Cape Province, inland to the Endoto Mountains, the upper Tana River, Kiliman-

jaro district, the Zambesi Valley, and the Transvaal. It seems divisible into about eight races, those of South Africa being greenest.

Andropadus insularis oleaginus, the type of which is probably still in the Berlin Museum, ranges from southern Portuguese East Africa to the lower Zambesi Valley, and up the Zambesi to the mouth of the Kafue. It is reported also as common in the dense bush of the Loangwa Valley, and Neave collected it only a little south of Ndola in Northern Rhodesia. Possibly it crosses the border into the southeastern Katanga.

At Mpala on Lake Tanganyika Böhm was supposed to have collected "*Andropadus flavescens*," and to have found the species in Marungu. But the iris was noted as brown, instead of light yellow as it is in *A. importunus*, and I suspect that the bird seen by Böhm was *Chlorocichla flaviventris*.

Andropadus virens virens Cassin

Andropadus virens CASSIN, 1857, Proc. Acad. Nat. Sci. Philadelphia, vol. 9, p. 34 (type locality: Cape Lopez, Gaboon). REICHENOW, 1887, Jour. Ornith., p. 301 (Manyanga); 1904, Die Vögel Afrikas, vol. 3, p. 412 (Sassa; Beni); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 344; 1923, Mitt. Zool. Staatsinst. Zool. Mus. Hamburg, vol. 40, p. 65 (Lupungu). SHELLEY, 1888, Proc. Zool. Soc. London, p. 25 (Tingasi). HARTLAUB, 1891, Abhandl. Naturwiss. Ver. Bremen, vol. 12, p. 13. OUSTALET, 1892, Naturaliste, ser. 2, vol. 6, p. 231 (Brazzaville); 1893, idem, ser. 2, vol. 7, p. 127. HARTERT, 1900, Novitates Zool., vol. 7, p. 48 (Mohara–Beni; Kitima in Ituri). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Kisantu; Uelle). LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 16 (Mukimbungu). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 385. SALVADORI, 1911, Ann. Mus. Civ. Genova, ser. 3, vol. 5, p. 448 (zone of Gurba-Dungu). SCHOUTEDEN, 1914, Rev. Zool. Africaine, vol. 3, p. 271 (Kilo); 1918, idem, vol. 5, p. 283 (Lesse; Zambo). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 270 (Rutshuru Plain; forest east of Rutshuru Plain; Moera; Mawambi; Ukaika; Irumu). BERLIOZ, 1925, Bull. Mus. Hist. Nat. Paris, vol. 31, p. 350 (Luluabourg).

Andropadus virens virens BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 408; 1924, idem, vol. 12, p. 24; 1936, The birds of tropical West Africa, vol. 4, p. 195. FRIEDMANN, 1930, The African Republic of Liberia and the Belgian Congo, vol. 2, p. 758 (Kassa on Congo R.). WOODMAN, 1938, Sudan Notes and Records, vol. 21, p. 322 (southwest Bahr-el-Ghazal).

Eurillas virens virens SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 331 (Kasongo; Kamaiembi; Kabambaie; Tshikapa; Ngombe in Kasai; Tshisika); 1924, idem, vol. 12, pp. 269, 417 (Leopoldville; Kidada; Eala; Ikengo; Tondu; Bikoro); 1925, idem, vol. 13, p. 13 (Kunungu); 1926, idem, vol. 13, p. 196 (Temvo; Tshela; Kisala); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 110 (Poko; Medje; Panga; Buta; Kotili; Djamba; Mauda;

Bondo Mabe); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 91; 1940, Rev. Zool. Bot. Africaines, vol. 34, p. 60 (Kawa Forest). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 186 (Kartushi; Lesse; Kampi-na-Mambuti). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 395 (in part. Northeast and east Belgian Congo). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 566 (Saidi; Ekibondo). JACKSON, 1938, The birds of Kenya Colony and ... Uganda, vol. 2, p. 881. GRANT AND M.-PRAED, 1940, Bull. Brit. Ornith. Club, vol. 60, p. 64. WHITE, 1946, Ibis, p. 81 (Mwinilunga; Kasai).

Eurillas virens GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 181 (Luluabourg).

SPECIMENS: Banalia, female, September 21. Avakubi, male, November 24. Ngayu, immature male, December 12; immature female, December 17. Bafwabaka, male, December 29. Medje, immature female, September 9. Niangara, three males, June 8, November 28; female, December 21. Between Faradje and Aba, male, November 30.

ADULT MALE: Iris dark brownish gray; bill dusky brown, a little lighter below, corners of mouth yellow; feet dull light brownish.

DISTRIBUTION OF THE SPECIES: Forests of Upper and Lower Guinea, from the Gambia to northern Angola and the Kavirondo District, also suitable forest areas in the Katanga, Nyasaland, and adjacent districts, north through eastern Tanganyika Territory to Kilimanjaro and Rabai in Kenya Colony, Mafia Island, and Zanzibar.

Andropadus virens grisescens Reichenow[1] is a rather small dark race from Upper Guinea, east to Southern Nigeria. *A. v. virens*, with wings mostly 67–78 mm. long, ranges from Fernando Po and the Cameroon-Congo coast eastward to Lake Albert, the Semliki Valley, and the Manyema District, perhaps even to Kavirondo. Specimens from Uganda have wings 74–82 mm.; but I see no constant difference in color and hesitate to recognize *A. v. holochlorus* Van Someren.[2] Angola birds are likewise a little large.

Andropadus virens zombensis, on the other hand, is of lighter greenish color, with wings 80–87 mm. It ranges from the Upper Katanga to southern Nyasaland, the coastal region of Tangan-

[1] *Andropadus virens erythropterus* Hartlaub is an earlier name, says A. L. Rand (1951), and should replace *grisescens*.

[2] 1922, Novitates Zool., vol. 29, p. 189 (Sezibwa R., Uganda).

yika Territory, and possibly Kilimanjaro, unless the very similar *A. v. marwitzi* Reichenow, with wings 80–89 mm., is really separable. Specimens from Mwinilunga show a slight approach to *virens*. The coastal forests of Kenya Colony from Vanga to Rabai harbor *A. v. shimba* Van Someren, lighter and less green, with wings 76–81 mm., and Zanzibar Island has the endemic *A. v. zanzibaricus*, often still more grayish.

Andropadus virens virens is one of the commonest and noisiest of the green bulbuls throughout most of the Congo lowlands. In the forest districts it is a bird of second growth and thickets about the edges of clearings. Staying well under cover, it keeps up a protracted chattering, "chut-chut-chut. . ." with many variations, conversational in tone with a touch of melody, or sometimes more like scolding. No description of a forest village in the Upper Congo would be complete without the background of semi-musical babbling by these birds as they sing through the long day.

In the savanna districts they are restricted to the heaviest patches of woodland. Never seen near the post of Faradje, they were fairly numerous in a heavy gallery forest midway between there and Aba. To the south this bulbul extends far out in the gallery forests of the Kasai and Lomami; on the east it occupies all forest areas up to about 5300 feet, as at Bogoro and in the vicinity of Rutshuru. Along the west base of Ruwenzori it chatters incessantly from the thickets at 5000 feet, but is never noticed at 7000 feet. Likewise it is missed on the slopes of the Kivu Volcanoes.

Near the Equator breeding seems to be carried on in all months; at Niangara we took a female ready to lay on December 21. But in districts with a pronounced dry season nests are probably built mostly during the rains. They are so well hidden, low down in thickets, that they have rarely been found and properly identified. Dry leaves are said to be used for the base, then small twigs, with plant fibers as a lining. The set of eggs is believed to be two, grayish white with profuse freckling of brownish red.

Small berries and other similar fruits make up most of the food. We kept notes of the contents of only three stomachs, all with berries and otherwise only a single spider.

Andropadus virens zombensis Shelley

Andropadus zombensis SHELLEY, 1894, Ibis, p. 10 (type locality: Zomba,

Nyasaland). NEAVE, 1910, Ibis, p. 132 (junction of Lufupa and Lualaba rivers). BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 25 (southern Belgian Congo).

Andropadus virens zombensis BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 408.

Eurillas virens virens SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 395 (in part. Katanga). VINCENT, 1935, Ibis, p. 374. VERHEYEN, 1940, Mus. Roy. Hist. Nat. Belgique, vol. 16, no. 2, p. 5 (Kanzenze).

Eurillas virens zombensis GRANT AND M.-PRAED, 1940, Bull. Brit. Ornith. Club, vol. 60, p. 64 (southeastern Belgian Congo).

DISTRIBUTION: From the Upper Katanga and the southern tip of Lake Tanganyika to southern Nyasaland, adjacent districts of Mozambique, the Uluguru Mountains, and Mafia Island. If *marwitzi* is synonymous, it extends to Usambara and the base of Kilimanjaro. The range is somewhat discontinuous, depending on evergreen forest or scrub, and not at all restricted to highlands. In Nyasaland the birds ascend occasionally to 6000 feet.

Records are very few from the Katanga, and I have seen no specimens from the region between there and the Lomami District, where intergradation with the nominate race might be expected. In voice, behavior, and nesting there seems to be little if any difference. The breeding season of *zombensis* in Nyasaland is supposed to begin in September or October.

Andropadus latirostris latirostris Strickland

Andropadus latirostris STRICKLAND, 1844, Proc. Zool. Soc. London, p. 100 (type locality: Fernando Po). REICHENOW, 1887, Jour. Ornith., p. 308 (Riva-Riva); 1904, Die Vögel Afrikas, vol. 3, p. 414. FLOWER, 1894, Proc. Zool. Soc. London, p. 606 (Muyoméma). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 270 (in part. Moera; Mawambi; Ukaika; Mawambi–Irumu).

Andropadus eugenius HARTERT, 1900, Novitates Zool., vol. 7, p. 47 (Mohara–Beni).

Andropadus latirostris eugenius REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 415 (Beni); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 345 (in part. Lenda R.; near Beni). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 283 (Masidongo; Lesse; Mutiba; Malisawa).

Eurillas latirostris SALVADORI, 1909, Ann. Mus. Civ. Genova, ser. 3, vol. 4, p. 324 (Buta–Dungu).

Eurillas latirostris eugenius SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 331 (Kamaiembi; Makumbi).

Stelgidocichla latirostris latirostris GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 185 (Molemba; Kartushi; Abeli; Kampina-Mambuti). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 394. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 123.

Stelgidocichla latirostris eugenius SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 109 (Poko; Medje; Rungu; Bondo Mabe; Mauda; Panga; Kotili; Nava R.; Buta).

Andropadus latirostris latirostris BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 193.

SPECIMENS: Avakubi, three males, February 12, June 7, November 3; female, October 26; immature male, April 4. Ngayu, female, December 11. Gamangui, immature male, February 22. Medje, two males, March 2, 13; three females, March 2, August 2, September 26; juvenile male, August 16.

ADULTS OF BOTH SEXES: Iris grayish brown or dull dark brown; bill brownish black, usually paler along cutting edges and at tip, corners of mouth yellow; feet yellowish brown.

DISTRIBUTION OF THE SPECIES: Forested areas from Portuguese Guinea to the Congo, southeastern Sudan, and the highlands of Kenya Colony, south to the Shiloango River, the Kasai District, and Ufipa in western Tanganyika Territory. There may be five or six geographic races, but they are not readily distinguishable. *A. l. congener* Reichenow, of Upper Guinea east to Southern Nigeria, is small, with wings 75–86 mm., and dark brown on the tail. *A. l. latirostris* of Lower Guinea averages little if any larger, its wings 76–88 mm., but is more ruddy brown on the tail. Both have the crown dusky olive, more grayish than the back. The range of *latirostris* extends from Fernando Po and Mt. Cameroon to the lowland forests of the Congo, north to the Uelle, south to the Kasai and Manyema districts, eastward perhaps to the Semliki Valley.

It is difficult to determine the limits between *A. l. latirostris* and *A. l. eugenius*. The latter is slightly larger, its wings 80–91 mm., and slightly greener on the crown, less dusky between the anterior ends of the yellow throat stripes. It occupies the forests of Uganda, those to the west of Lake Victoria, and probably all those above 5000 feet in the eastern Congo. With *eugenius* is often united the greener-capped *A. l. saturatus* Mearns of mountain forests in the Kenya Colony highlands. The wings of *saturatus* measure 83–94 mm. *A. l. australis* (Moreau)[1] of the Ufipa highland would seem to resemble *saturatus*. *A. l. pallidus* Mearns of Mt. Gargues in East Africa is debatable.

This dark green bulbul with yellow whiskers is one of the com-

[1] 1941, Bull. Brit. Ornith. Club., vol. 62, p. 29 (Mbisi Forest).

mon birds in the whole Upper Congo forest. Though I have not yet seen a specimen from the Mayombe, there can be little doubt of its occurrence there too. It would seem not to extend quite so far out in the gallery forests of the Uelle and the Kasai as *A. virens* does. About Lukolela, Avakubi, Medje, and Angumu we found *A. l. latirostris* in the second growth of abandoned plantations as well as in primary forest. Its voice resembles that of *virens* in that it is a flow of broken, jerky notes, but it is always recognizable by its beginning very faintly, then growing louder and louder, until at the end of four to six seconds the song stops abruptly, only to be taken up again in the same way after 20 to 30 seconds. The bird may be sitting right over one's head, yet at first it seems some distance off. As it continues singing it seems to approach.

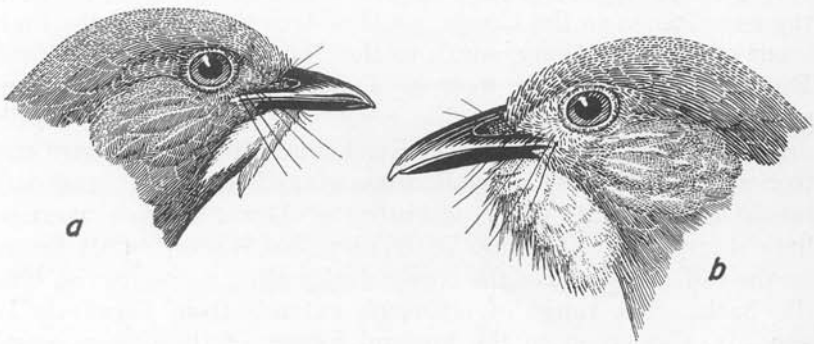

FIG. 7. Heads, to show the throat feathering. A. *Andropadus latirostris*. B. *Criniger calurus*.

Only when it reaches full volume can the nearness of the author be appreciated. One looks up, and there he sits.

Our dissections indicated that breeding is suspended during the drier part of the year, but birds with some enlargement of the gonads were taken in the northern Ituri from March to October, inclusive, suggesting a very long period for reproduction. On September 26 at Medje we found the cup-shaped nest of this species, rather lightly built of a few dry leaves and some small twigs, and lined with finer, thread-like plant material. It rested in a bush in the forest, some 5 feet from the ground, and contained two eggs, pinkish white with purplish brown spots, forming a heavy wreath around the larger end. The set was complete, for the eggs contained large embryos. The juvenal plumage of this

bulbul is rather rufous brown above, with middle of underparts whitish, and no sign of the yellow whiskers.

Examination of six stomachs revealed insect remains in only one individual. All the others had been eating fruit: some orange-colored berries, or the fruit of the parasol tree (*Musanga*), or even pieces of the small red pepper (*Capsicum*). To this fruit diet a spider was once added.

Andropadus latirostris eugenius Reichenow

Andropadus eugenius REICHENOW, 1892, Jour. Ornith., p. 53 (type locality: Bukoba on L. Victoria).

Eurillas eugenius JACKSON, 1906, Ibis, p. 540 (Ruwenzori).

Andropadus latirostris O.-GRANT, 1908, Ibis, p. 304 (northwest of L. Tanganyika); 1910, Trans. Zool. Soc. London, vol. 19, p. 386 (Mubuku Valley). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 270 (in part. Northwest of L. Tanganyika, 2000 m.).

Andropadus latirostris eugenius REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 345 (in part. Northwest of L. Tanganyika). BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 404. SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 79 (in part).

Stelgidocichla latirostris eugenius GYLDENSTOLPE, 1924, K. Svensk. Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 185 (Sake; Burunga). SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 317 (Lulenga; Ngoma); 1933, idem, vol. 22, p. 376 (Nyundo); 1935, idem, vol. 27, p. 402 (Tshibinda; Kansenze).

Stelgidocichla latirostris eugenia SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 394. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 123. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 880. PETERS AND LOVERIDGE, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 250 (Idjwi I.).

Eurillas latirostris eugenia SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 91 (Kamatembe, 2100 m.).

Eurillas latirostris eugenius SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines vol. 33, p. 284 (Mt. Wago); 1942, idem, vol. 36, p. 337 (forest west of Astrida).

DISTRIBUTION: From the forested highlands of the eastern Congo to Uganda, Kakamega in the North Kavirondo district, and the Didinga Mountains in the southeastern Sudan; on the south to the Kungwe-Mahare highland east of Lake Tanganyika.

It is still doubtful whether specimens from the eastern edge of the Ituri forest below 5000 feet are to be referred to this or to the nominate race. Those from the Lendu Plateau, Ruwenzori, and Kivu highlands above 5000 feet are certainly greener above, a little yellower on the belly, and slightly longer winged than *A. l. latirostris*, and thus agree with specimens from Bukoba and Uganda.

In any case the species is well represented in the Semliki Valley, on the slopes of Ruwenzori and the Kivu Volcanoes up to at least 8000 feet, and on the other highlands from those west of Lake Albert south to the vicinity of Baraka, wherever there is suitable forest. It is numerous on Idjwi Island. The chattering song, delivered in short spells, betrays its presence, even though the birds are not sociable and do not come out in the open. The mountain-dwelling birds appear to have a long breeding season, interrupted only during a few dry months.

Andropadus gracilirostris congensis Reichenow

Andropadus gracilirostris congensis REICHENOW, 1916, Ornith. Monatsber., p. 181 (type locality: Leopoldville, Congo R.). BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 403; 1936, The birds of tropical West Africa, vol. 4, p. 190.

Andropadus gracilirostris BOCAGE, 1881, Ornithologie d'Angola, pt. 2, p. 551 (Condé). REICHENOW, 1887, Jour. Ornith., pp. 301, 305 (Manyanga; Leopoldville); 1904, Die Vögel Afrikas, vol. 3, p. 411 (Kwango R.); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 344 (Beni). O.-GRANT, 1908, Ibis, p. 303 (Ponthierville). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 271 (Moera; Ukaika; east of Rutshuru Plain, 1600 m.); 1924, idem, vol. 38, p. 79. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 283 (Lesse; Malisawa). BERLIOZ, 1925, Bull. Mus. Hist. Nat. Paris, vol. 31, p. 350 (Luluabourg); 1936, idem, ser. 2, vol. 8, p. 330 (Mbwahi).

Chlorocichla gracilirostris REICHENOW, 1887, Jour. Ornith., p. 309 (Kasongo). SHELLEY, 1888, Proc. Zool. Soc. London, p. 24 (Tingasi).

Andropadus gracilirostris gracilirostris BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 403; 1924, idem, vol. 12, p. 26; 1936, The birds of tropical West Africa, vol. 4, p. 188, fig. 56. WOODMAN, 1938, Sudan Notes and Records, vol. 21, p. 321 (southwest Bahr-el-Ghazal). BOUET, 1945, Ois. Rev. Française Ornith , new ser., vol. 14, p. 72 (Liranga).

Andropadus gracilirostris chagwensis GRANVIK, 1923, Jour. Ornith., Sonderheft, p. 207 (eastern Congo border).

Stelgidillas gracilirostris SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 331 (Basongo; Kamaiembi; Makumbi; Ngombe in Kasai); 1924, idem, vol. 12, p. 417 (Eala); 1925, idem, vol. 13, p. 13 (Kunungu); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 92 (Kamatembe; Rutshuru).

Stelgidillas gracilirostris gracilirostris GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 183 (Kartushi; Kampi-na-Mambuti). SCHOUTEDEN, 1924, Rev. Zool. Africaine, vol. 12, p. 269 (Kidada); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 109 (Kotili; Mauda; Dika; Abimva). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 391. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 874. CAVE, 1938, Sudan Notes and Records, vol. 21, p. 177 (source of Yubo R.).

Stelgidillas gracilirostris congensis GYLDENSTOLPE, 1924, K. Svenska Vetensk.

Akad. Handl., ser. 3, vol. 1, no. 3, p. 183 (Mukimbungu). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 391. FRIEDMANN, 1930, The African Republic of Liberia and the Belgian Congo, vol. 2, p. 758 (Kinshasa). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 566 (Saidi; Ekibondo). MOREAU, 1943, Ibis, p. 398 (Kungwe-Mahare, 6900 ft.; "Katanga").

SPECIMENS: Avakubi, male, April 3; immature female, May 16. Ngayu, two immature females, December 13, 21. Medje, male, June 2; two females, January 20, June 2. Niangara, juvenile male, November 19. Dungu, male, June 23. Faradje, two males, October 4, November 30; two females, November 27.

ADULTS: Iris brick red to reddish brown, bill and feet blackish.

DISTRIBUTION OF THE SPECIES: Forested countries from Casamance to Kenya Colony and south to northern Angola, the Kasai District, and Mt. Kungwe in Tanganyika Territory. *A. g. gracilirostris* Strickland of Fernando Po is a rather light-colored race, and the birds of Upper Guinea, from Southern Nigeria westward, are best referred to it. Specimens from southern Cameroon, Gaboon, the Congo, and northern Angola are deeper gray below and darker green on the back, but of about the same size, wings 75–87 mm. These are *A. g. congensis*. It is very doubtful whether *chagwensis* Van Someren deserves recognition. At best it is merely the Uganda intermediate between *congensis* and *A. g. percivali* (Neumann) of the Kenya highlands, which has a lighter gray breast, brighter green crown, and wings 83–90 mm.

The range of *A. g. congensis* thus extends from the Cameroon-Gaboon coast across the Congo to the Lotti Forest in the southern Sudan, the base of Elgon, the Nandi district, Bukoba, the Kivu District, Kungwe-Mahare highland, the southern Kasai, and the Cuanza Valley in Angola. There are minor variations in the color of the crown and underparts, but I do not find that nominate *gracilirostris* extends across the northern Congo to Uganda.

In all forested parts of the Congo this green and gray bulbul is a rather common bird, save on high mountains. On the Lendu Plateau and just east of the Rutshuru Plain, however, it ascends to 5200 feet; De Witte secured it in Kamatembe near 6500 feet, and Moreau reports it from 6900 feet on Kungwe-Mahare, east of Lake Tanganyika. On Ruwenzori and the Kivu Volcanoes I never saw it.

In the Ituri forest it seemed most frequent near the borders of clearings, whereas in the savanna districts it was to be found only

in patches of dense woodland. To see as many as four together in a fruiting tree is unusual. Their quiet demeanor renders them inconspicuous amid the leafy boughs, where they feed at some height, and the song is not apt to attract attention. It seems to be a brief, high-pitched whistle.

Specimens in condition to breed were taken in the northeastern Congo in January, April, June, and October, also a nestling in November. In the Ituri forest I am convinced that breeding continues through the whole year. The nest and eggs are still unknown.

In six stomachs I found remains of insects in every case, among them one small caterpillar, a green grasshopper, a hemipter, and what seemed like two winged ants. One stomach contained also 10 small fruits.

KEY TO THE SPECIES OF *Arizelocichla* IN THE CONGO

Smaller, wings 76–82 mm.; lower breast and abdomen dull olive, often tinged with gray ..... *A. masukuensis kakamegae*

Larger, wings 84–95 mm.; lower breast and abdomen olive yellow ..... *A. tephrolaema kikuyuensis*

Arizelocichla masukuensis kakamegae (Sharpe)

Xenocichla kakamegae SHARPE, 1900, Bull. Brit. Ornith. Club, vol. 11, p. 29 (type locality: Kakamega Forest, western Kenya Colony).

Phyllastrephus thephrolaemus kakamegae SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 266 (Moera).

Arizelocichla kakamegae GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 182 (Kampi-na-Mambuti). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 91 (east of Rutshuru Plain).

Arizelocichla masukuensis kakamegae SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 389. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 108 (Bondo Mabe). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 864 ("Kivu district").

Arizelocichla kakamegae SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 284 (Mt. Wago).

DISTRIBUTION OF THE SPECIES: From the Masuku Mountains of northern Nyasaland to Usambara, the base of Mt. Elgon, and the eastern edge of the Ituri forest. Possibly *A. montana* (Reichenow) of the Cameroon highlands is a close ally.

Arizelocichla masukuensis masukuensis (Shelley) of the high mountains near the north end of Lake Nyasa is green virtually all over. *A. m. roehli* (Reichenow) of Uluguru and Usambara has

cheeks and breast tinged with grayish, throat clear gray, and a narrow ring of gray around the eye. *A. m. kakamegae* has gray throat, cheeks, and eye ring, with the whole crown also gray, darker than the face. Breast and abdomen are greenish, somewhat lighter than the back.

This gray-headed race is not a bird of high mountains, but rather of heavy forests at an elevation of 3000 to 5000 feet, though it may ascend a little higher at certain places. Its range extends from the base of Elgon and North Kavirondo to the northeastern corner of the Congo forest and the country west of Lake Edward. Rudolf Grauer collected two specimens in those highlands, doubtless in the general region of Lubero, and three more at Moera, near Beni. I have seen the bird at 4400 feet in the forest east of the Rutshuru Plain, but looked for it in vain on Ruwenzori and the Kivu Volcanoes. Others collected by Gyldenstolpe at Kampi-na-Mambuti and by Schouteden near Arebi show how far it extends west of the Congo-Nile divide.

The little we know about the Kakamega bulbul is that it is a shy and rather silent bird, never abundant, living in thick rain forests and doubtless feeding largely on fruits.

Arizelocichla tephrolaema kikuyuensis (Sharpe)

Xenocichla kikuyuensis SHARPE, 1891, Ibis, p. 118 (type locality: Kikuyu, Kenya Colony). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 382, pl. 19, fig. 20 (Mubuku Valley, 6500–10,000 ft.).

Bleda kikuyuensis JACKSON, 1906, Ibis, p. 539 (Ruwenzori).

Phyllastrephus schubotzi REICHENOW, 1908, Ornith. Monatsber., p. 47 (type locality: Rugege Forest).

Phyllastrephus kikuyensis schubotzi REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 342 (west Ruwenzori, 2000–2500 m.). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 282.

Phyllastrephus tephrolaemus schubotzi SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 266 (northwest of L. Tanganyika, 2000 m.).

Andropadus kikuyuensis BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 28.

Andropadus tephrolaema tephrolaema BANNERMAN AND BATES, 1924, Ibis, p. 246 (Buhamba near L. Kivu).

Arizelocichla tephrolaemus kikuyuensis GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 181 (Burunga; Lulenga; Mt. Karisimbi, 3600 m.).

Phyllastrephus tephrolaemus kikujenses SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 79 (Kisenyi–Rutshuru).

Arizelocichla tephrolaema kikuyuensis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 388. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p.

318 (Nya-Muzinga); 1935, idem, vol. 27, p. 402 (Kibumba; Kansenze near Mt. Nyamlagira; Tshibinda). GROTE, 1935, Anz. Ornith. Gesellsch. Bayern, vol. 2, p. 356. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 183. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 119. JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 863.

Arizelocichla tephrolaema schubotzi GRANVIK, 1934, Rev. Zool. Bot. Africaine, vol. 25, p. 68.

Phyllastrephus tephroloemus kikuyuensis BERLIOZ, 1936, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 8, p. 330 (Mbwahi).

Arizelocichla kikuyuensis SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 91 (Burunga in Mokoto; Kamatembe; Kikere in Kibumba; Nyarusambo; Burambi; Kundhuru-ya-Tshuve, 2600 m.; Kashwa; Kibga; Nyabitsindi; L. Ngando); 1942, Rev. Zool. Bot. Africaine, vol. 36, p. 337 (forest west of Astrida); 1942, Bull. Cercle Zool. Congolais, vol. 17, p. 61.

Arizelocichla tephrolaima kikuyuensis VERHEYEN, 1947, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 23, no. 9, p. 2 (Mt. Kabobo).

DISTRIBUTION OF THE SPECIES: Highlands of Fernando Po, Cameroon, eastern Congo, Uganda, Kenya Colony, and probably southward to southern Nyasaland.

Arizelocichla tephrolaema tephrolaema (Gray) of Fernando Po and Mt. Cameroon is a greenish bird with gray head, unstreaked on ear-coverts. In the Bamenda-Banso highlands it is replaced by the darker green, longer-tailed *A. t. bamendae* (Bannerman). From the eastern Congo to Mt. Kenya we find *A. t. kikuyuensis*, with more yellowish breast, whitish streaks on the ear-coverts, and a light eye ring. According to Grote[1] and Moreau,[2] the gray-breasted forms formerly separated under *nigriceps* are really races of *tephrolaema*. *A. t. kungwensis* Moreau of the Kungwe-Mahare highlands has a gray head, streaked ear-coverts, but no white on eyelid. Its gray underparts are lightly washed with green. Closely related races are *A. t. fusciceps* (Shelley) of Nyasaland, *A. t. neumanni* Hartert, of Uluguru, and *A. t. usambarae* (Grote) of Usambara. In the Kilimanjaro area lives the blackish crowned *A. t. nigriceps* (Shelley), and even *A. chlorigula* (Reichenow) of the area between Nguru and Matengo in Tanganyika Territory may be a representative of this group, despite its yellowish green throat.

These are always mountain dwellers, and *A. t. kikuyuensis* is not found below 6000 feet. Within our limits it is well known

[1] 1935, Anz. Ornith. Gesellsch. Bayern, vol. 2, pp. 355, 356.

[2] 1943, Ibis, p. 391.

from Ruwenzori, the Kivu Volcanoes, the mountain ridges west of lakes Edward and Kivu, south to the vicinity of Uvira and Usumbura, and the Rugege Forest southeast of Lake Kivu. Specimens from Rugege show no approach to *A. t. kungwensis*. In the forest and bamboo zones of Ruwenzori, especially between 6700 and 9300 feet, it is one of the birds most frequently seen, going in small parties of three or four, feeding rather high up in the trees. Fairly noisy, it sings a short phrase in nasal, jerky fashion which recalls the voice of *Chlorocichla flaviventris*. I used to remember it as "Don't, care if you do," and the brief pause after the first syllable is characteristic. Harsher scolding notes were also given occasionally.

Woosnam noted it sometimes in valleys up to 10,000 feet on east Ruwenzori, but I never saw it amid the heath trees on ridges at that elevation, or in the senecio zone. There is no record from the Lendu Plateau, although the species may occur on a few of the highest peaks near Lake Albert. The northernmost record on the Tshabirimu massif is from Mt. Nyemilima, and it is certainly found at levels above 7000 feet south to Mt. Kabobo. On the Kivu Volcanoes we saw it frequently in forest between 6500 and 9000 feet.

So close to the Equator I should not expect a short breeding season. We took a few breeding adults on Ruwenzori in November, and on March 4 Woosnam found a nest at 8000 feet placed in the undergrowth about 5 feet above the ground. It was composed of fine roots, grass, and moss. The female sat on a single egg, pinkish white, heavily blotched and clouded with dark brown and leaden gray, and with a few indistinct spots of deeper brown. Dimensions: 24.3 by 18 mm.

Four of the five stomachs of which we kept a record contained only fruits; only one held insect remains.

[*Arizelocichla tephrolaema kungwensis* Moreau]

Arizelocichla tephrolaema kungwensis MOREAU, 1941, Bull. Brit. Ornith. Club, vol. 61, p. 60 (type locality: Mt. Kungwe, 6900 ft., east of L. Tanganyika).

This gray-chested subspecies is known only from Mt. Kungwe on the eastern side of Lake Tanganyika and can scarcely reach our territory anywhere save possibly in southern Urundi. The species seems to be unrepresented in the highland of Marungu.

Calyptocichla serina (Verreaux)

Criniger serinus VERREAUX, 1855, Jour. Ornith., p. 105 (type locality: Gaboon). SHARPE AND BOUVIER, 1877, Bull. Soc. Zool. France, vol. 2, p. 478 (Condé). BOCAGE, 1881, Ornithologie d'Angola, 1881, pt. 2, p. 550.

Andropadus serinus REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 410. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 270 (Moera; Mawambi). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 283 (Zambo).

Trichites serina BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 23.

Calyptocichla serina SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 196 (Tshela); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 109 (Kotili); 1939, Bull. Cercle Zool. Congolais, vol. 16, p. 50 (Buta). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 391. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 181. DELACOUR, 1943, Zoologica, vol. 28, p. 23.

SPECIMENS: Batama, immature female, September 15. Panga, immature male, September 14. Medje, male, female, August 21.

ADULTS OF BOTH SEXES: Iris rather light grayish brown; bill light brown, darker at tip and becoming whitish at base of mandible; feet dark bluish gray.

DISTRIBUTION: Forested regions from Sierra Leone to the Cameroon, Fernando Po, the Lower Congo, and eastward to the Semliki Valley. In spite of this wide distribution there are but few Congo records, and the southern limit of distribution there remains to be fixed. It will be found dependent upon the limit of the forest, for in going northward from the Ituri we did not see this bulbul beyond Medje.

Not in the virgin forest, but in rather tall second growth was where we found the golden bulbul, silent, and never more than two together. During my long stay in Avakubi I did not observe the species anywhere in the vicinity, yet in a few days at Panga several were encountered, and others were seen along the River Lindi near its mouth. The food in the three stomachs we examined consisted entirely of small berries.

KEY TO THE SPECIES OF *Baeopogon*

Underparts, with exception of under tail-coverts, gray, usually washed with greenish except on throat; outer rectrices of adults tipped with blackish ..... *B. indicator*

Chin gray, but remaining underparts more ochraceous, though washed with olive on breast and flanks; white outer rectrices never tipped with black ..... *B. clamans*

Baeopogon indicator indicator (Verreaux)

Criniger indicator J. AND E. VERREAUX, 1855, Jour. Ornith., p. 105 (type locality: Gaboon).

Xenocichla indicator REICHENOW, 1887, Jour. Ornith., pp. 301, 305 (Manyanga; Leopoldville). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Kisantu).

Phyllastrephus indicator REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 390 (in part. Manyanga; Leopoldville).

Phyllastrephus indicator congensis REICHENOW, 1917, Jour. Ornith., p. 115 (type locality: Congo). BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 397.

Baeopogon indicator congensis SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 332 (Basongo); 1924, idem, vol. 12, pp. 269, 417 (Kidada; Tondu; Bikoro).

Baeopogon indicator indicator BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 22; 1936, The birds of tropical West Africa, vol. 4, p. 166. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 381.

Baeopogon indicator SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 196 (Butu Polo; Temvo). GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 179 (Luluabourg).

Boeopogon indicator indicator BERLIOZ, 1941, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 13, p. 403 (Brazzaville).

DISTRIBUTION OF THE SPECIES: From Sierra Leone through forested western Africa to the Nandi district of Kenya Colony, and on the south to northern Angola. *B. i. leucurus* (Cassin) of Liberia and neighboring districts is scarcely tinged with green on its gray breast; *B. i. togoensis* (Reichenow) of the Gold Coast and Togo is more washed with buffy yellow beneath. *B. i. indicator* of Lower Guinea is again deeper in color, with a decided green admixture on the breast, and with buffy under tail-coverts. Its wings usually measure 93–103 mm. Birds from the northeast Congo and Uganda are generally admitted to be still greener, and are called *B. i. chlorosaturatus*. The difference between them and Cameroon specimens is really slight; the dimensions are about the same. Specimens of nominate *indicator* from northern Angola have wings up to 108 mm. long.

It would seem that the range of *B. i. indicator* extends from northern Angola, the Gaboon coast, and perhaps southern Cameroon and Southern Nigeria, to the Kasai and the Upper Congo near Stanleyville. An exact eastern limit cannot yet be fixed.

This is a common bird in the region around Lukolela, near the southern edge of the forest belt; and it is surprising that it has so seldom been taken in the Kasai. The behavior is discussed under the following subspecies.

Baeopogon indicator chlorosaturatus (VAN SOMEREN)

Chlorocichla indicator chlorosaturata VAN SOMEREN, 1915, Bull. Brit. Ornith.

Club, vol. 35, p. 127 (type locality: Kyetume Forest, Uganda).

Xenocichla indicator SHARPE, 1884, Jour. Linnean Soc. London, Zool., vol. 17, p. 424 (Mangbanga in Uelle).

Phyllastrephus indicator REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 390 (in part. Mangbanga); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 342 (northwest of Beni). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 269 (Moera; Beni; Ukaika); 1924, idem, vol. 38, p. 79. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 282 (Kokoba; Naroubi; Makojoba; Lesse).

Andropadus indicator O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 384 (Mpanga Forest, 5000 ft.; 80 miles northwest of Beni).

Phyllastrephus indicator lacuum REICHENOW, 1917, Jour. Ornith., p. 115 (type locality: Beni, Semliki Valley). BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 399.

Baeopogon indicator lacuum BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 23.

? *Baeopogon indicator congensis* BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 23.

Baeopogon indicator chlorosaturata GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 180 (Kartushi; Bopu; Kampi-na-Mambuti). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 381. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 108 (Mauda; Rungu; Medje). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 860.

SPECIMENS: Stanleyville, male, November 14. Avakubi, two males, February 17, June 8; female, July 2. Ngayu, male, July 30. Medje, male, July 3; female, August 14. Niangara, two males, May 18, November 26. Rungu, male, June 28.

ADULT MALE: Iris creamy white or yellowish white (dull grayish buff in immature male), bill dark gray to blackish, feet dark bluish gray.

ADULT FEMALE: Iris grayish white to gray, often with a faint olive brown tinge; bill blackish gray, feet dark leaden gray.

DISTRIBUTION: Forests of Uganda, eastward to the Nandi district of Kenya Colony, northward to the Lotti Forest in the southern Sudan, westward to the eastern Congo forest in the vicinity of Stanleyville. On the south it may be expected to reach the Manyema, but it has never been taken in the highland forests of the Kivu, and usually stays below 5000 feet. It is common enough along the west base of Ruwenzori.

In the Ituri forest it is frequently heard and seen, not in primary growth, but rather about the edges of clearings or plantations, or in open second growth such as *Musanga* groves. As one goes out

into the Uelle District it becomes more and more restricted to the heavy woods near watercourses.

White-tailed bulbuls usually go in pairs, keeping well up in trees, the male singing at frequent intervals—a loud, melodious phrase that slides down the scale and has a little of the same quality as that of the American veery (*Hylocichla fuscescens*). This lasts two or three seconds, and directly after each outflow the female replies with a loud semi-musical call. The whole effect is most pleasing. If it were not for this singing and the bird's conspicuous white outer rectrices, one might not realize how common it is.

Dissections proved that nesting is certainly carried on during the rains and probably through almost the whole year, also that two eggs are the usual set. But the nest has not yet been found anywhere.

Fruits form the staple diet. They were present in seven out of eight stomachs examined, usually small berries. One bird had swallowed a large spider, and one stomach with insect remains held a few hard seeds as well, doubtless from fruit. Near Angumu I once watched this bulbul capturing winged termites in flight.

Baeopogon clamans (Sjöstedt)

Xenocichla clamans SJÖSTEDT, 1893, Ornith. Monatsber., p. 28 (type locality: Ekundu, Cameroon).

Baeopogon clamans CHAPIN, 1921, Amer. Mus. Novitates, no. 17, p. 16 (Avakubi; Ngayu). BEQUAERT, 1922, Rev. Zool. Africaine, vol. 10, p. 317. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 381 (Bima). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 168, fig. 49 (Libokwa). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 108 (Poko).

Phyllastrephus clamans STRESEMANN, 1924, Jour. Ornith., pp. 421–422 ("color phase"); 1926, Jour. Ornith., p. 378, footnote.

Boepogon indicator DELACOUR, 1943, Zoologica, vol. 28, p. 24 (in part. "Color phase").

SPECIMENS: Avakubi, three males, February 28, April 17, June 8; two females, February 28, April 17. Ngayu, male, July 29; immature male, July 24.

ADULTS OF BOTH SEXES: Iris rather dark red (no sexual difference); bill dark greenish gray to dusky; feet bluish gray. A well-grown but immature male had the iris reddish brown.

DISTRIBUTION: From Ekundu in British Cameroons eastward to the Ituri District and southward at least to the Gaboon. The

most northerly records in the Congo are from the southern Uelle District, and I have twice heard the voice of this bulbul in the forest north of the new post of Beni, so it may reach the Semliki Valley. I failed to find it at Lukolela, and there is no record from the Lake Leopold District or the Mayombe.

Any suspicion that this is a mere color phase of *B. indicator* is without foundation. The more ochreous breast, abdomen, and under tail-coverts of *clamans*, together with the completely white outer rectrices, render its identification easy. The bill is usually shorter and thicker than that of *B. indicator*, and the eye color is totally different. The few Cameroon and Gaboon specimens I have examined seemed more buffy on the upper throat than ours from the Ituri, and their bills often somewhat longer. Wings of Ituri males measure 104–107 mm., of females 95 and 99 mm.

Baeopogon clamans is more restricted to the heavy forest area than *B. indicator*, and this is explained by the fact that it tends to replace *indicator* in the primary forest, the latter species preferring the neighborhood of former clearings. In life it would be hard to distinguish the two species were it not for their very different voices. The red-eyed *clamans* likewise goes in pairs, feeding amid the boughs at shady, intermediate levels. It is seldom noticed except when the male utters its loud, harsh "cha!" or "chim!," repeating it again and again, and varying it from time to time with a short series of disconnected nasal notes, evidently serving as a song, but recalling the unpleasant voice of *Chlorocichla simplex*. This is quite unlike the sweet song of *B. indicator*.

Our seven specimens of *B. clamans* were secured only by keeping a continual lookout, so the species may be called rather uncommon even in the Ituri forest. Our immature specimen had already discarded the juvenal plumage. Only a single female, taken on February 28, was ready to breed, all the other adults exhibiting but slight development of the gonads. The nest is unknown.

It seems as though the nests of some of the small wasps offered a special attraction to this bulbul, a male of which was once observed perching close to such a nest, uttering his loud call. On another occasion the stomachs of a pair of the birds were found to contain the remains of small black wasps, *Polybioides melaina* (Meade Waldo), with a few of their pupae and several

dozen of their larvae. This is a very courageous and venomous wasp, which builds large paper nests in trees along watercourses, and it seems extraordinary that a bulbul should attack such a war-like insect colony. No other insects were found by us in stomachs of *Baeopogon clamans*. Five other individuals (including that sitting near the wasp nest) had eaten only small berries or other fruit.

Ixonotus guttatus Verreaux

Ixonotus guttatus J. AND E. VERREAUX, 1851, Rev. Mag. Zool., p. 306 (type locality: Gaboon). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127. O.-GRANT, 1908, Ibis, p. 302 (Ponthierville; Mawambi); 1910, Trans. Zool. Soc. London, vol. 19, p. 387. SALVADORI, 1911, Ann. Mus. Civ. Genova, ser. 3, vol. 5, p. 449 (zone of Gurba-Dungu). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 272 (Moera; Beni; Ukaika). LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 28. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 284 (Lesse; Kinzi); 1924, idem, vol. 12, p. 417 (Eala; Tondu); 1925, idem, vol. 13, p. 13 (Bolobo region); 1926, idem, vol. 13, p. 196 (Lukula; Ganda Sundi; Tshela; Kisala; Temvo; Makaia Ntete); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 108 (Poko; Buta; Bondo Mabe; Rungu; Kotili; Titule); 1938, Bull. Cercle Zool. Congolais, vol. 14, p. 104 (Kunungu). VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 184 ("Ruwenzori Range"). BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 401; 1924, idem, vol. 12, p. 34; 1936, The birds of tropical West Africa, vol. 4, p. 170, pl. 6 (Angu; Libokwa). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 176. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 381. BOUET, 1934, Ois. Rev. Française Ornith., new ser., vol. 4, p. 640; 1945, idem, new ser., vol. 14, p. 71 (Mayombe; Bangui). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 565 (Saidi in Ituri). JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 861.

Inoxotus guttatus SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 332 (Luebo; Basongo; Kabambaie; Makumbi).

Ixonotus notatus DELACOUR, 1943, Zoologica, vol. 28, p. 24 (Congo).

SPECIMENS: Bafwaboli, immature male, September 13. Panga, female, September 17. Avakubi, female, August 14. Ngayu, male, December 17; female, December 17. Bafwabaka, male, December 31. Gamangui, juvenile male, February 20; immature female, February 1. Medje, male, January 13; immature male, January 13.

ADULT MALE: Iris dark brown; bill dark gray above, pinkish gray beneath; feet bluish gray.

ADULT FEMALE: Iris grayish white; bill and feet as in male. An immature female had the iris light grayish brown.

DISTRIBUTION: Western Liberia to the Cameroon, Congo, and Budongo and Bugoma forests in Uganda. Avoiding mountain forests, it reaches the lowland forests near the base of Ruwenzori, and extends to the Manyema District. In the south it occupies the Mayombe and the wooded areas of the Kasai, but in the north it barely reaches the Uelle River.

When I first became acquainted with *Ixonotus* in life it did not seem very much like the other members of the Pycnonotidae. It now seems to me that its closest allies are *Brachypodius, Microtarsus,* and *Euptilosus,* all inhabitants of the Oriental region, from eastern Bengal to the Greater Sunda Islands and the Philippines. These all have similar thick patches of long feathers on the rump and through *Euptilosus* seem to be connected with the more normal bulbuls.

The spotted bulbul of Africa is sociable, usually seen in flocks of 10 to a dozen high in trees, not only of virgin forest but also in second growth and about the edges of clearings. The usual call is a double or triple chirp, uttered almost continually as the birds fly from tree to tree. The pose while perching is decidedly horizontal, and this bulbul has a peculiar habit of raising one wing at a time high over its back. The white tail feathers are conspicuous, and the thick rump patch is erected occasionally.

Nesting must take place almost throughout the year, to judge from our dissections. The nestling specimen came from a frail, shallow nest made of rootlets and placed in a crotch of a small thorn tree, 14 feet from the ground, in second growth close to a small village. When found in the middle of February—a dry period—it contained two young. The old birds coming to feed their offspring were always amid a party of four to six. One of these would come down to the nest with food, usually a single fruit, and cram it into a wide-open throat. Seizing a ball of excrement from the nest, it would fly off, its place being taken by a second bird which likewise fed the young. Next would come another member of the party, so that I could never be certain there were not more than two old birds doing the feeding. Then the party would leave again, one of its members sometimes remaining to brood. It is possible that the group includes immature birds of a previous brood.[1]

[1] Compare A. F. Skutch, 1935, Auk, pp. 257–273.

The juvenal plumage was similar to that of adults, except that the feathers were much softer, almost downy on the underparts, and those of the back were tinged with pale buff. One afternoon, when the youngsters' tails were only one-fourth grown, I tapped the tree and they both flew off with the brooding bird. This time only two old birds came back to look for their offspring. One of them struck a very comic attitude as it stood on a small branch with both wings spread sidewise to their fullest extent and head pointing groundwards.

Of the nine stomachs I have examined, only a single one contained insect remains alone. All the others held fruits, usually small berries or drupes, and once the fruit of the parasol tree (*Musanga*). But one adult bird was found to have eaten four small caterpillars as well as fruit, and two caterpillars were found with fruit in the stomach of the nestling.

KEY TO THE SPECIES OF *Criniger* IN THE CONGO

Larger, wing exceeding 98 mm.; breast gray, posterior flanks greenish, middle of abdomen yellowish ..... *C. barbatus*
Smaller, wing less than 98 mm.; middle of breast and abdomen yellow, sides of breast and flanks greenish ..... *C. calurus*

Criniger barbatus chloronotus (Cassin)

Trichophorus chloronotus CASSIN, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 43 (type locality: Camma R., Gaboon).

Criniger chloronotus chloronotus BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 19 (Libokwa).

Trichophorus chloronotus chloronotus SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 376 (Landana). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 142. BOUET, 1942, Ois. Rev. Française Ornith., new ser., vol. 12, p. 37 (Mayombe).

DISTRIBUTION OF THE SPECIES: Sierra Leone to the eastern edge of the Congo forest, south to the Lower Congo. *C. b. barbatus* Temminck of the Upper Guinea forests, east to Togoland, has a throat patch of long yellow feathers, the body and tail are mostly greenish, but splashed with gray on breast and upper back. *C. b. ansorgeanus* Hartert of the Niger Delta has the throat patch pale yellow, becoming white toward chin and lower neck. Its tail and upper tail-coverts are rufous washed with olive green. *C. b. chloronotus* carries the same changes somewhat farther; the throat feathers are all pure white, the chest is smoky gray, lower underparts are yellowish green. The back is green, much

as in *ansorgeanus*, tail and coverts are rufous. It ranges from the base of Mt. Cameroon to the Congo forest. *C. b. weileri* is only slightly different; its chest a trifle darker gray, and lower underparts deeper green. It seems to be restricted to the eastern Congo forest near the Ituri District and Semliki Valley and may extend south to the Manyema.

The distinction between *chloronotus* and *weileri* is so subtle that I scarcely know where to draw the line between them. Sclater and Bannerman both refer a specimen from the Lower Uelle to the former, so *C. b. chloronotus* may range from the Cameroon-Gaboon coast and Landana eastward to the region of Stanleyville. Very few specimens are known from the Congo, because this is a bird of deep primary forest. At Lukolela I never saw or heard it, although it may well be expected somewhere in that region. In the Frankfurt Museum there was a specimen secured by Schubotz at Ndekkere, near the Uelle River just east of Yakoma. The little that is known of its habits in the Cameroon is exactly like the behavior of the following race.

Criniger barbatus weileri Gyldenstolpe

Criniger chloronotus weileri GYLDENSTOLPE, 1922, Bull. Brit. Ornith. Club, vol. 43, p. 34 (type locality: Kampi-na-Mambuti, Ituri District); 1926, Arkiv Zool., vol. 19 A, no. 1, p. 57. BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 19.

Criniger chloronotus SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 262 (Moera; Mawambi; Ukaika; Mawambi-Irumu); 1924, idem, vol. 38, p. 79. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 281 (Beni).

Trichophorus chloronotus weileri GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 173 (Kartushi). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 376.

Trichophorus chloronotus chloronotus SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 107 (Nava R.).

SPECIMENS: Avakubi, two males, January 8, March 20. Penge, male, April 25. Ngayu, male, December 14. Babeyru, male, immature male, August 1. Medje, immature female, June 5. Nala, female, October 26.

ADULTS OF BOTH SEXES: Iris dark red; maxilla dusky gray with lower edge bluish gray, mandible blue gray; feet light bluish or blue gray.

IMMATURE: Iris dark brown, rim of eyelids greenish; maxilla blackish with lower edge yellowish, mandible dull greenish; feet light gray.

DISTRIBUTION: Eastern Congo forest, from the Semliki Valley westward at least to Medje and Avakubi in the Ituri District. From Angumu south of Makala we have two males, one like *weileri*, the other indistinguishable from *chloronotus*. But the range of *weileri* may perhaps extend southward to the Manyema forest.

We did not notice this large, bearded bulbul even as far north as the Bomokandi River, and in the Ituri and Semliki forests it is very particular as to haunts. Only in wide stretches of unspoiled forest may one hope to see or hear the bird. Sometimes a party of five or six will be found in the undergrowth, their white throat feathers sticking out conspicuously; on other occasions they are less sociable. Never did I see one amid a mixed feeding party of birds. At Avakubi they seemed scarce, for they shunned the second-growth woods near the station. In the forest near Babeyru they were numerous, as proved by the frequency of their call, a sibilant whistle, loud, prolonged, and divided in two syllables. Following that up, one may find the maker perched in the smaller forest trees or the taller underbrush, even as low as 6 feet above the ground. When alarmed, a bird may also utter a weak chattering call.

The nest of this species is still unknown. Our dissections showed that along the Ituri some individuals were breeding in March and April, and it seems likely that nesting would be carried on through the greater part of the year. Stomach contents were noted in only three cases; all included insects, hard-bodied as well as a caterpillar and some insect eggs, while one bird had also taken fruit.

Criniger calurus calurus (Cassin)

Trichophorus calurus CASSIN, 1856, Proc. Acad. Nat. Sci. Philadelphia, vol. 8, p. 158 (type locality: Moonda R., Gaboon).

Criniger calurus REICHENOW, 1887, Jour. Ornith., p. 301 (Manyanga); 1904, Die Vögel Afrikas, vol. 3, p. 382. OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127 (Ubangi).

Criniger calurus calurus BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 392 (northern Belgian Congo).

Hypotrichas calurus calurus BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 20.

Trichophorus calurus calurus SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 196 (Butu Polo; Makaia Ntete). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 376. BANNERMAN, 1936, The birds of tropical West Africa,

vol. 4, p. 144. BOUET, 1945, Ois. Rev. Française Ornith., new. ser., vol. 14, p. 73 (Bangui).

DISTRIBUTION OF THE SPECIES: Sierra Leone and southern French Guinea through all the West African forests to Uganda and south to Congo mouth and the central Kasai, also on Fernando Po. *C. c. verreauxi* Sharpe is the Upper Guinea race and extends eastward to Lagos. It has a rather stout bill, and the tail and its upper coverts are almost as green as the back. *C. c. calurus* differs most noticeably in its more rufous tail and occurs from Benin in Southern Nigeria and the island of Fernando Po through forested Cameroon and Gaboon to the Mayombe. It is difficult to say how far inland it goes in the Congo, for *C. c. emini* of the Upper Congo forest and Uganda differs mainly in having the tail less rufous, more washed with olive. *C. c. ndussumensis* of the Semliki Valley has a much slenderer bill than *emini*, and a rather rufous tail like that of nominate *calurus*.

The range of *C. c. calurus* certainly includes the Lower Congo, for I have seen rufous-tailed specimens from the Mayombe Forest and Manyanga. It may reach the Ubangi River, but the birds of Lukolela are *emini*.

In the Mayombe Forest this smaller bearded bulbul is common, and two or three seemed to be always present in any mixed feeding party of forest birds. The nest of this race, as described by Bates[1] from the Cameroon, was placed among close-growing leaf stems on the branch of a forest shrub. It was composed of small dry twigs, with a quantity of damp moss laid on them and a cup of fine blackish fibers inside. The interior was almost black, and the two eggs, likewise, were unusually dark for a bulbul's. The ground color appeared to be pinkish, but was almost entirely obscured by the dense, chocolate brown markings. Dimensions were approximately 23 by 16 mm.

Criniger calurus emini Chapin

Criniger calurus emini CHAPIN, 1948, Auk, p. 444 (type locality: Lukolela on middle Congo R.).

Criniger verreauxi SHELLEY, 1888, Proc. Zool. Soc. London, p. 24 (Bellima). EMIN, 1894, Jour. Ornith., p. 164 (Bumanja).

Criniger verreauxi ndussumensis REICHENOW, 1904, Die Vögel Afrikas. vol. 3, p. 383 (in part. Bellima in Upper Uelle District). SCHOUTEDEN, 1914, Rev.

[1] 1911, Ibis, p. 597, pl. 11, fig. 3.

Zool. Africaine, vol. 3, p. 271 (Kilo); 1918, idem, vol. 5, p. 281 (in part. Munié-Mboka).

Criniger calurus O.-GRANT, 1908, Ibis, p. 304 (near Kasongo); 1910, Trans. Zool. Soc., London, vol. 19, p. 382 (in part. Irumu). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 342 (in part). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 262 (in part. Beni–Mawambi; Mawambi; Mawambi–Irumu).

Criniger calurus ndussumensis BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 392 (Ndussuma).

Trichophorus calurus calurus SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 332 (Luebo); 1924, idem, vol. 12, p. 417 (Ikengo); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 107 (Poko; Kotili; Panga; Nava R.; Rungu; Bondo Mabe).

Hypotrichas calurus ndussumensis BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 20 (northeastern Belgian Congo).

Trichophorus calurus SCHOUTEDEN, 1925, Rev. Zool. Africaine, vol. 13, p. 13 (Mongende; Kunungu). CHAPIN, 1931, Nat. Hist., vol. 31, p. 602 (Lukolela).

Trichophorus calurus bannermani SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 376 (in part. Middle Uelle Valley).

Trichophorus calurus ndussumensis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 376. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 565 (Saidi in Ituri). JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 855.

SPECIMENS: Avakubi, three males, February 18, April 2, December 7; two females, June 6, September 27. Ngayu, immature female, December 20. Gamangui, male, February 4; immature male, February 12. Medje, two males, May 11, August 16; immature male, January 20; immature female, June 9; juvenile female, May 9.

ADULTS OF BOTH SEXES: Iris brick red to dark crimson; bill blue gray, becoming blackish on culmen; feet bluish.

IMMATURE: Iris dark brown, bill blackish, feet blue gray.

DISTRIBUTION: From the middle Congo River and supposedly the lower Ubangi eastward through most of the Upper Congo forest to Uganda and the foot of Mt. Elgon. In the northern Congo it reaches the Uelle River, and on the south the Manyema District and Luebo in the Kasai. I have not examined Kasai specimens carefully, but doubt if they differ from those of Lukolela, which have the upper tail-coverts washed with greenish and rectrices much less rufous than nominate *calurus*. A few skins from the vicinity of Kasongo and the Elila River in the northern Manyema are very close to *emini*. This greenish-tailed race was long called *ndussumensis*, but that name belongs correctly to the slender-billed form which inhabits the Semliki Forest.

This white-bearded bulbul is one of the common species of all the Upper Congo forest, though almost never seen in a clearing. It keeps to the shady undergrowth, mostly in virgin forest, where it is always a constituent of the mixed parties of insectivorous birds roaming about during the day. When looking for birds, one will always find it worth while to follow up the loud "peep" or "pee-ip!" of this *Criniger*, for as my hunter Nekuma used to say, it is the "caporali" or corporal of the bird parties.[1]

There seemed always to be a couple, at least, with each party; and in addition to their loud cheep, frequently repeated, they give another note, somewhat hoarser and lower, which I tried to write "cr-r-mmm." It was almost as though the bird was calling to its companions, "come!," with an *r*-like roll through it. Far less often I heard what seemed to serve as a song, a phrase with little music that was readily remembered with the words "nep-chowng-churrika." The other most noisy member of the party was apt to be *Dicrurus atripennis*. All about would be flitting small green bulbuls of the genus *Phyllastrephus*, as well as *Diaphorophyia castanea*, *Terpsiphone r. ignea*, *Malacocincla rufipennis*, *Anthreptes f. axillaris*, *Malimbus malimbicus*, and various other associates, while a few greenish woodpeckers sought ants on the tree trunks.

Easily recognized by their white beards, projecting beneath the beak, these bulbuls usually perched on thin branches, but at times were watched climbing with unexpected persistence on the bark of trees. Not only in solid forest but also in the border regions where gallery forests are extensive enough to harbor the proper birds, one will find this same association including *Criniger calurus*. More rarely I have seen one at some spot where driver ants, swarming up into the bushes, had attracted *Alethe castanea* and *Malacocincla*.

In the Ituri we took breeding individuals in February, April, and August, so it is likely that nesting may occur at any season. Enlargement of the gonads is not permanent—as it seems to be in *Terpsiphone rufocinerea batesi* and a few other forest birds—for we also dissected non-breeding adults in May, June, September, and December. Breeding cycles of different individuals are simply not coördinated, and this seemed to be characteristic of many birds in the equatorial forest.

[1] See especially Chapin, 1932, Bull. Amer. Mus. Nat. Hist., vol. 65, pp. 220–224.

Insects form by far the main bulk of the food. In 12 stomachs investigated, fruits and small seeds from fruit were noted but twice, whereas insect remains were present in 11 cases and included bits of small beetles, a grasshopper, a leaf hopper, and a small naked caterpillar.

Criniger calurus ndussumensis Reichenow

Criniger verreauxi ndussumensis REICHENOW, 1904, Die Vögel Afrikas, vol. 3 p. 383 (type locality: Kinyawanga near Beni); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 342 (west slope of Ruwenzori, 1500 m.). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 281 (in part. Malisawa; Kokoba; Assumba; Lesse).

Criniger calurus O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 382 (in part. Beni). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 342 (in part. Northwest of Beni). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 262 (in part. East of Rutshuru Plain, 1600 m.; Moera; Ukaika). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 281.

Criniger verreauxi udussumensis LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 28.

Trichophorus swainsoni bannermani GYLDENSTOLPE, 1923, Bull. Brit. Ornith. Club, vol. 43, p. 131 (type locality: Lesse, Semliki Valley, eastern Congo); 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 173, fig. 15a (Kartushi).

Trichophorus calurus ndussumensis GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 174, fig. 15b (Semliki Valley).

Hypotrichas swainsoni bannermani BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 20. GYLDENSTOLPE, 1926, Arkiv Zool., vol. 19A, no. 1, p. 57.

Trichophorus calurus bannermani SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 376 (in part. Semliki Valley).

Trichophorus calurus ndussumensis ? SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 93 (east of Rutshuru Plain).

DISTRIBUTION: Forested Semliki Valley and south to the vicinity of Rutshuru, as well as a little way west into the Congo forest.

This race differs markedly from *emini* and *calurus* by its much slenderer bill. Its tail is like that of *calurus*, with rectrices and upper coverts plainly more rufous than in *emini*. The wings of *C. c. ndussumensis* measure 82–94 mm. A male and a female that I collected in 1927 in the Semliki Forest not many miles from Lesse agree perfectly with Gyldenstolpe's description. His assumption that two distinct species lived side by side in the Semliki Valley has not been borne out by my studies in the field. Kinyawanga, the type locality of *ndussumensis*, is close to Beni, and not in Ndussuma, nearer Irumu and Bogoro. So *bannermani* is surely

a synonym, for Hermann Grote assured me that the type of *ndussumensis* is thin billed.

At Irumu I had secured three specimens with tails much greener and bills fairly stout, evidently *emini*. Only 46 kilometers south of Irumu on the road to Beni, and well to the west of the Semliki Valley, I took my first thin-billed example of *emini*. Thus it is clear that the race is not entirely restricted to that valley. At Angumu, some 190 kilometers west of Lake Edward, 13 specimens of *C. calurus* were obtained in 1937, of which nine agree well with *emini*, but four have bills virtually as slender as those of *ndussumensis*. Even these have tails and tail-coverts less rufous, with one possible exception.

In the forest patches on the eastern side of the Rutshuru Valley I noted *Criniger calurus* with the usual bird parties, but failed to collect it. Grauer had previously taken two there, and we can readily understand the perplexity of Sassi (1916) who had specimens of two different races from the region of Beni and Mawambi. I could find no difference in habits or voice between the two forms, and they cannot represent two distinct species. Sassi in 1947 reëxamined Grauer's specimens from east of the Rutshuru Valley and found them small billed and rufous tailed like the birds of the Semliki Valley.

Thescelocichla leucopleura (Cassin)

Phyllostrophus leucopleurus CASSIN, 1855, Proc. Acad. Nat. Sci. Philadelphia, vol. 7, p. 328 (type locality: Moonda R., Gaboon).

Phyllastrephus leucopleurus REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 398 (Ivindo). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 269 (Moera; Beni). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 282 (Lesse; Alimasi); 1920, idem, vol. 7, p. 192 (Malela).

Thescelocichla leucopleura SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 332 (Basongo; Tshikapa); 1925, idem, vol. 13, p. 13 (Kunungu). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 379. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 153, fig. 46. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 566 (Ekibondo).

Pyrrhurus leucopleurus BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 30 (Congo R. mouth).

Thescelocichla leucopleurus SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 196 (Ganda Sundi; Kisala); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 107 (Buta; Mauda; Abimva; Bondo Mabe; Rungu).

SPECIMENS: Medje, adult, January 14. Nala, male, October 25. Niangara, three males, November 14, 28; female, November

21; immature male, May 9; immature female, November 22.

ADULTS OF BOTH SEXES: Iris brown, bill blackish, feet dark gray.

DISTRIBUTION: From the Casamance River eastward through Upper Guinea to the Cameroon, the Mayombe, and the Congo to the Uelle, Semliki Valley, and the southern Kasai. In the Congo it is mainly an inhabitant of the borders of the great forest and adjacent gallery forests. Uncommon or absent in the central Ituri, in the Lowa District, and along the Congo River above Yumbi, it is nevertheless common in districts such as the Mayombe, the Semliki Valley, and the better wooded parts of the Uelle.

There it lives in pairs or family parties, especially in wooded swamps with numerous *Raphia* palms of a species with little or no trunk but fronds attaining 30 feet in length. In the Nepoko area it was often seen and heard among the abundant oil palms (*Elaeis*). Palms of all kinds are less numerous in the central area of the forest, and sometimes a swampy patch of *Pandanus* will harbor a pair of these birds. The harsh, jarring notes recall the scolding voices of certain bulbuls like *Chlorocichla simplex*, but are very much louder. One could not long overlook the presence of the palm bulbul, for it talks back excitedly at a human intruder, even though it seldom comes out into the open.

Bates[1] mentioned a nest found in the Cameroon, near the Ja River, in October, placed in a swamp palm of the genus *Raphia* and containing two young. Two of our specimens seemed ready to breed in late November, toward the end of the rains, at Niangara. I doubt whether the nesting season is as short as these dates might suggest.

Sjöstedt and Bates have both described this bulbul as a fruit eater; W. P. Lowe found berries to be eaten, and I have watched it in the Mayombe coming to take green fruits in the same tree with a party of *Gymnobucco calvus*. Nevertheless, the stomach of one of our specimens contained only insect remains.

KEY TO THE SPECIES OF *Chlorocichla* IN THE CONGO

1. Underparts mainly yellow or ochreous.....2
   Underparts mainly grayish or gray brown, sometimes whitish in middle, or washed with olive; throat white or yellow.....3

[1] 1909, Ibis, p. 58.

2. Upperparts brownish olive, crown slightly browner; yellow of throat light and rather dull..... *C. flaviventris*
   Upperparts bright yellowish green; yellow of throat very bright, middle of breast yellow, shading to greenish on flanks..... *C. laetissima*
3. Upperparts bright green, throat yellow, chest and flanks gray; wings not exceeding 94 mm..... *C. falkensteini*
   Upperparts dark brown or brownish olive; wings usually exceeding 94 mm. 4
4. Whitish feathers on eyelids above and below eye, under wing-coverts rufous buff, throat white..... *C. simplex*
   No light feathers on eyelids, under wing-coverts paler buff, throat whitish or light yellow..... *C. flavicollis*

Chlorocichla falkensteini falkensteini (Reichenow)

Criniger falkensteini REICHENOW, 1874, Correspondenzbl. Afrikanischen Gesellsch., no. 10, p. 179 (type locality: Chinchoxo, Loango Coast). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32.

Pycnonotus falkensteini SHARPE, 1881, Catalogue of the birds in the British Museum, vol. 6, p. 146 (Landana). REICHENOW, 1887, Jour. Ornith., pp. 301, 305 (Manyanga; Leopoldville).

Phyllastrephus falkensteini REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 391.

Arizelocichla falkensteini SCHOUTEDEN, 1924, Rev. Zool. Africaine, vol. 12, p. 269 (Kisantu); 1926, idem, vol. 13, p. 196 (Makaia Ntete).

Arizelocichla falkensteini falkensteini SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 389 (northern Angola and Portuguese Congo). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 185.

DISTRIBUTION OF THE SPECIES: From Sakbayeme and the River Ja in the Cameroon south to the Lower Congo, Stanley Pool, and the forested areas of northern Angola south to Quibula. In the Gaboon it seems very rare. The nominate race is usually stated to range from Angola north to the Loango Coast and Mayombe, while *C. f. viridescentior* Sharpe, with deeper green upperparts and more gray on chest and flanks, has been recognized in the forested region of southern Cameroon. But the difference in color is almost negligible.

Falkenstein's bulbul seems to be a bird of second growth and isolated forest patches, keeping near clearings when in a real rain forest. It is unobtrusive and skulking, with a voice of the same general tone as *C. simplex*. The nest, as described by Bates[1] from the Cameroon, is a shallow cup set in the fork of a bush, even in a manioc garden, and made of shreds of the bark of weeds

[1] 1909, Ibis, p. 56.

and leaf stems, with fine grasses inside. The eggs are two, greenish white or pale stone color, with clouded olive and gray markings, thickest in a zone about the large end, and over these some irregular lines and scrolls of umber brown. They measure 22–25.5 by 16–17 mm.

According to Bates the food consists of berries of many kinds, especially small peppers.

Chlorocichla flaviventris occidentalis Sharpe

Chlorocichla occidentalis SHARPE, 1881, Catalogue of the birds in the British Museum, vol. 6, p. 113, pl. 7 (type locality: Angola). DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, p. 148.

Chlorocichla flaviventris DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32.

Phyllostrophus occidentalis NEAVE, 1910, Ibis, p. 134 (Kaluli R.).

Chlorocichla flaviventris occidentalis LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 76 (Kasenga on Luapula R.). M.-PRAED AND GRANT, 1940, Ibis, p. 325. A. W. VINCENT, 1947, Ibis, p. 168 (Elisabethville).

DISTRIBUTION OF THE SPECIES: Natal north to Southern Somaliland, Kenya Colony, Lake Tanganyika, and central Angola. *C. f. flaviventris* (Smith) of Natal and Zululand is olive brown above, the tail even a little more reddish brown than the back. *C. f. occidentalis*, with crown, back, and especially the tail much more greenish, ranges across the continent from Portuguese East Africa to Ovamboland and Angola. *C. f. centralis* Reichenow of Kenya Colony and Tanganyika Territory, from the coast to Kilimanjaro and Mt. Kenya, is again more brownish above, especially on the crown, but its tail retains a somewhat greenish coloration.

Chlorocichla flaviventris occidentalis extends northward from Mashonaland into the southeastern Congo, where it occurs in the Upper Katanga, on the southwestern shore of Lake Tanganyika, and even in the Manyema District. Rockefeller and Murphy obtained a specimen at Moba, but none in the Marungu, and Grauer had previously collected one about 50 miles west or southwest of Baraka.

This yellow-breasted bulbul skulks in the densest thickets it can find, and gives a reiterated nasal call. Its nest has been found in Nyasaland by Benson[1] in December, a loose shallow cup of

[1] 1942, Ibis, p. 306.

dry grass and rootlets, in a fork of a small tree at 6 feet from the ground. The two eggs were cream colored, with blotches of brown and sepia, thickest near the large end; dimensions 24.5–24.75 by 17.5 mm.

Chlorocichla laetissima (Sharpe)

Andropadus aurissimus SHARPE, 1899, Bull. Brit. Ornith. Club, vol. 10, no. 67, *reprinted in* Ibis, 1900, p. 363 (type locality: Nandi, Kenya Colony). SCHOUTEDEN, 1914, Rev. Zool. Africaine, vol. 3, p. 271 (Kilo); 1918, idem, vol. 5, p. 283. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 270 (Beni–Mawambi).

Xenocichla laetissima O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 383 (Mpanga Forest, 5000 ft.).

Chlorocichla laetissimus BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 29.

Chlorocichla laetissima SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 390 ("Ituri forest"). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 109 (Bondo Mabe); 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 7 (Mt. Wago); 1940, idem, vol. 16, p. 71 (region of Mongbwalu). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 873.

Chlorochila laetissima SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 284.

Chloroccichla loetissima DELACOUR, 1943, Zoologica, vol. 28, p. 24.

DISTRIBUTION: From the vicinity of Arebi to the Lendu Plateau, south to the region of Beni, and east across Uganda to the base of Mt. Elgon, the Nandi Forest and the Kericho district in Kenya Colony. It is seldom seen below 4000 feet and has not been reported from the Budongo, Bugoma, or Mabira forests in Uganda. Neither is it to be seen in the mountain forests of Ruwenzori or the Kivu District, although it is abundant in the Mpanga Forest.

At Djugu on the Lendu Plateau we found this large yellowish bulbul common in the dense undergrowth of forest at 5500 feet, as well as along its edges where native farmers had already destroyed some of the trees. It was sociable, forming parties of six to eight, or joining with the more numerous mixed bird parties that roamed the woods there. Usually rather silent, they could on occasion produce loud explosive or chattering calls, but I never heard any sweet song such as Woosnam described from the Mpanga Forest.

In the vicinity of Irumu I never came across this species, but at the new post of Beni, where the elevation is around 3900 feet, it was collected again. I noted it at Karasawangwa in forest

at 3800 feet along the west base of Ruwenzori, as well as between Karebumba and Kabiabo at 4400 feet on the highland northwest of Lake Edward. Why it should not frequent the higher mountain forests is a mystery.

Nothing is known of its nesting. The food is largely of small fruits, though we may expect some insects to be taken as well.

Chlorocichla flavicollis soror (Neumann)

Xenocichla flavicollis soror NEUMANN, 1914, Ornith. Monatsber., p. 9 (type locality: Kamadekke, Ogowé R., Gaboon).

? *Criniger barbatus* JOHNSTON, 1884, The River Congo, p. 364 (lower and middle Congo R.).

Xenocichla flavigula REICHENOW, 1887, Jour. Ornith., p. 301 (Manyanga).

Trichophorus flavigularis HARTLAUB, 1891, Abhandl. Naturwiss. Ver. Bremen, vol. 12, p. 13 (Mswa). EMIN, 1891, Jour. Ornith., p. 343 (Mangbetu country); 1922, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 3, p. 377.

Phyllastrephus flavigula REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 395 (Congo). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 265 (in part. Beni).

Phyllastrephus flavigula pallidigula REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 395 (in part. Nyangabo; Mswa).

Xenocichla flavicollis var. *flavigula* DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (in part. Lower Congo; Stanley Falls).

Trichophorus flangularis EMIN, 1919, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 2, p. 492 (Tomaya).

Atimastillas flavicollis flavigula SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, pp. 332, 396 (Basongo; Kwamouth); 1924, idem, vol. 12, pp. 269, 417 (Leopoldville; Ikengo); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 107 (Poko; Dika; Faradje; Rungu; Mahagi Port; Buta). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 379 (in part. Ubangi-Uelle).

Phyllastrephus flavicollis flavigula BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 31 (in part).

Phyllastrephus flavicollis soror BANNERMAN AND BATES, 1926, Ibis, p. 797.

Trichophorus flavigula EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 24.

Atimastillas flavicollis pallidigula SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 379 (in part. Uelle).

Pyrrhurus flavicollis soror BANNERMAN, 1934, Bull. Brit. Ornith. Club, vol. 54, p. 147 (Luma I. and Kwango on Ubangi R.; Kibali R.; Poko); 1936, The birds of tropical West Africa, vol. 4, p. 162.

Atismatillas flavicollis soror SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 34, p. 60 (Kawa Forest).

SPECIMENS: Leopoldville, male, July 6. Avakubi, two males, February 18, July 13; immature male, July 14. Medje, male, July 23. Niangara, two immature females, November 18, 24.

Faradje, two males, February 11, October 14; two females, April 28, October 16.

ADULTS: Iris grayish buff (males) to grayish white (female); bill grayish black, feet dark gray, faintly tinged with bluish or olive.

DISTRIBUTION OF THE SPECIES: From the Gambia to the Shari River district, the southern edge of the Sudan, Mt. Elgon, and the eastern shore of Tanganyika; south to the Benguella Plateau in Angola, northeastern Rhodesia, and Luchinde near the northern end of Lake Nyasa.

Chlorocichla flavicollis flavicollis (Swainson) is a very large race, wings 105–121 mm., with bright yellow throat, and remaining underparts heavily washed with brown. It occupies Upper Guinea, east to Nigeria. *C. f. adamauae* (Reichenow) is another large race, bright yellow on throat, but more grayish on breast, restricted to eastern Nigeria and the Genderu Mountains of the Cameroon.

In the lowlands of southern Cameroon and Gaboon lives *C. f. soror*, with throat nearly white, and breast and flanks olive gray. Over most of its range the wings measure only 94–110 mm., but birds of similar coloration from Djang and Nkongsamba in Cameroon have wings 98–115 mm. The whole area inhabited by *soror* extends from the base of Mt. Cameroon and Tibati east to the southern Bahr-el-Ghazal, the vicinity of Lake Albert and the Semliki River, and south to the Lower Congo, northern Kasai District, and forested Manyema.

Chlorocichla flavicollis simplicicolor Grote,[1] described from Bozum in the Uam district of French Equatorial Africa, is pale-throated but supposedly browner, less olive, on the body than *soror*.

South and east of the Congo forest the throat again becomes more yellow. *C. f. flavigula* of Angola and the whole southeastern Congo is somewhat larger than *soror*, for its wings measure 100–115 mm., the males as usual larger than females. The throat is rather light yellow, breast and flanks slightly washed with brownish. The range extends eastward to the shores of Lake Tanganyika and almost to the north end of Lake Nyasa.

From the northern end of Lake Tanganyika through the Kivu

[1] 1924, Ornith. Monatsber., p. 45.

highlands to the shores of Lake Victoria the throat is still yellower, the underparts more heavily tinged with brownish. The best name for this form seems to be *C. f. pallidigula*, although Sharpe's type came from Entebbe, where the characters of the race are not so well developed as they are in North Kavirondo. Specimens from the latter district are very yellow on the throat, and their wings measure 106–117 mm. Some from the region of Bukoba and the Kivu highlands resemble them, and I scarcely think it necessary to recognize *C. f. shelleyi* Neumann.

The Congo-Cameroon race, *soror*, is by no means a bird of heavy forest and is most numerous in the regions of gallery forest, like the Uelle District. It lives in pairs or small parties in thick scrubby woods, making its presence known by a loud, nasal "kyow!" or similar harsh notes that are repeated excitedly as though in protest at human intrusion. While these resemble the voice of *C. simplex*, they are a little louder and apt to be given from perches higher up in the trees. Not infrequently the birds come to guava or mango trees in villages or posts.

From the more central parts of the forest belt there are very few records. Along the Ituri near Avakubi the birds were found in only a few places with clearings and extensive second growth. Since the European occupation of Stanleyville conditions have become more suitable. At Lukolela these bulbuls were rarely noticed far back from the river bank.

While this bulbul is distinctly a lowland species, it goes up to about 4500 feet in the highlands near Lake Albert wherever the country is not forested, and I have seen one family party at 6200 feet in the grassy highland west of the upper Semliki.

Our dissections indicated breeding in the northern Congo between July and October, during the rainy months. In the Cameroon Bates[1] found nests placed in palms and small trees, at a somewhat higher level than those of *C. simplex*. They were built of coarse leaf stems, with a few dry leaves in the base, and an outer wrapping of what seemed to be cobweb. Two eggs formed the set. They were creamy white or pale buff, heavily spotted or blotched with umber or Vandyke brown, and had other paler markings of gray or brownish. Dimensions: 24 by 16.5 mm.

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[1] 1909, Ibis, p. 57; 1911, idem, p. 600.

This bulbul must feed almost exclusively on fruit, for nothing else was found in the nine stomachs I examined, except a single small beetle. In two cases the seeds or other fragments of small red peppers were recognizable, and another bird had swallowed pulp of the cultivated guava.

Chlorocichla flavicollis flavigula (Cabanis)

Trichophorus flavigula CABANIS, 1880, Ornith. Centralbl., p. 174 (type locality: Angola).

Xenocichla flavigula DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, p. 148 (L. Tanganyika). REICHENOW, 1887, Jour. Ornith., p. 309 (Kibondo).

Phyllastrephus flavigula pallidigula REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 395 (in part. Kibondo); 1923, Mitt. Zool. Staatsinst. Zool. Mus. Hamburg, vol. 40, p. 65 (Lupungu in Lomami).

Xenocichla flavicollis var. *flavigula* DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (in part. L. Tanganyika).

Phyllostrophus pallidigula NEAVE, 1910, Ibis, p. 135 (Lufira R.; Kambove; upper Lualaba R.; Lufupa R.; Lubudi R.).

Phyllastrephus flavicollis shelleyi BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 31 (southern Congo). BANNERMAN AND BATES, 1926, Ibis, p. 797.

Atimastillas flavicollis flavigula SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 379 (in part).

Pyrrhurus flavicollis flavigula BANNERMAN, 1934, Bull. Brit. Ornith. Club, vol. 54, p. 146 (Kambove; Lufupa R.). VERHEYEN, 1940, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 16, no. 2, p. 4 (Kanzenze). WHITE, 1944, Ibis, p. 147 (Luapula R. near Kasenga).

DISTRIBUTION: Angola, south to the Benguella Plateau, central and southern Kasai District, eastward to the Katanga, the northern part of Northern Rhodesia, and apparently the North Nyasa District. It reaches the western shore of Lake Tanganyika and the grasslands of the Manyema, but the form reported from the eastern side of Tanganyika is *pallidigula*.

This southern race, with pale yellow throat, is a rather common bird in suitable spots in the savanna districts. A lowland bird, it ascends little above 4000 feet, and its behavior is like that of *soror*. It may be expected to nest between November and April.

Chlorocichla flavicollis pallidigula (Sharpe)

Xenocichla pallidigula SHARPE, 1897, Bull. Brit. Ornith. Club, vol. 7, p. 7 (type locality: Entebbe, Uganda).

Phyllastrephus flavigula pallidigula REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 342 (Kwidjwi I.). LÖNNBERG. 1917, Arkiv Zool., vol. 10, no. 24, p. 28 (Rutshuru).

Phyllastrephus flavigula SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 265 (in part. Usumbura; Uvira; Rutshuru Plain).

Antimastillas flavicollis pallidigula GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 4, vol. 1, no. 3, p. 175 (Ngoma).

Atimastillas flavicollis shelleyi SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 379 (L. Kivu).

Astimatillas flavicollis shelleyi SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 318; 1933, idem, vol. 22, p. 376 (Kisenyi–Ruhengere; Byihayi).

Atimastillas flavicollis flavigula JACKSON, 1938, The birds of Kenya Colony and ... Uganda, vol. 2, p. 858. SCHOUTEDEN, 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 337 (Kirinda).

Atismatillas flavicollis pallidigula SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 93.

Atimastillas flavicollis pallidigula PETERS AND LOVERIDGE, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 248 (Idjwi I.).

DISTRIBUTION: From the Kivu highlands and Lake Tanganyika to the shores of Lake Victoria and the North Kavirondo District. If the name *pallidigula* seems not very appropriate, we must remember that Sharpe made his comparison with nominate *flavicollis* of Upper Guinea. Specimens from the Kivu can certainly be distinguished from *flavigula* by their deeper yellow throats and more brownish underparts and agree fairly well in color with birds from Entebbe.

Intergradation with *flavigula* is to be expected near Uvira, and with *soror* in the region of Lake Edward and of Masindi in western Uganda. Examples from the Bugoma and Budongo forests have throats almost as whitish as *soror*. On the other hand, birds from the Uganda-Kenya border in North Kavirondo are of maximum size, with throats rather bright yellow, and one might be inclined to separate them as *C. f. shelleyi* Neumann.[1] The range of the species seems to encircle Lake Victoria, and skins from the southern shore are not unlike those of Bukoba. So I prefer to regard *shelleyi* as a synonym of *pallidigula*.

This distinctly yellow-throated race is a common bird in the Kivu District and Ruanda. While it never invades mountain forests, it has been reported from 5900 feet near Ruhengere, and it is frequently seen around the shores of Lake Kivu and on Idjwi Island, at about 5000 feet. Its voice and behavior are like those of *soror*, and its food consists almost entirely of fruits.

Nests are found in Uganda, according to Jackson, between

[1] 1900, Jour. Ornith., p. 292 (Mwanza).

April and June. They are placed from 15 to 30 feet up, in a forking branch of some thickly foliaged tree. The male drives all other birds from the vicinity, while his mate seems to bring the nest materials. These include dry midribs of leaves and rootlets; some thick spider webs are bound around the outside. The eggs are two, pale pink heavily blotched with reddish brown and with gray shell markings. The dimensions given by Jackson are 25 by 17 mm.

Chlorocichla simplex (Hartlaub)

Trichophorus simplex HARTLAUB, 1855, Jour. Ornith., pp. 356, 360 (type locality: Rio Boutry, Gold Coast).

Xenocichla simplex REICHENOW, 1887, Jour. Ornith., pp. 301, 305 (Manyanga; Leopoldville). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Stanley Falls; Lower Congo). SALVADORI, 1911, Ann. Mus. Civ. Genova, ser. 3, vol. 5, p. 448 (Zone of Gurba-Dungu).

Phyllastrephus simplex REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 394 (Stanley Pool). LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 16. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 266 (Beni). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 282 (Lesse); 1920, idem, vol. 7, p. 191 (Malela). BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 394 (northern Belgian Congo); 1923, Ibis, p. 710; 1924, Rev. Zool. Africaine, vol. 12, p. 34.

Atimastillas simplex SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, pp. 332, 396 (Macaco; Tshikapa; Kwamouth); 1924, idem, vol. 12, pp. 269, 417 (Kidada; Tondu; Eala; Ikengo); 1925, idem, vol. 13, p. 13 (Kunungu; Bolobo; Mongende); 1926, idem, vol. 13, p. 196 (Temvo). FRIEDMANN, 1930, The African Republic of Liberia and the Belgian Congo, vol. 2, p. 758 (Lusengo on upper Congo R.). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 566 (Ekibondo).

Chlorocichla simplex SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 390. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 109 (Buta; Kotili; Poko). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 76 (Tshikapa). DELACOUR, 1943, Zoologica, vol. 28, p. 24.

Pyrrhurus simplex BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 163.

SPECIMENS: Avakubi, four males, January 12, 24, February 16, 18; female, October 29. Medje, male, March 26; female, August 20. Niangara, three males, November 18, 21, December 6.

ADULTS: Iris dark brown (male) or deep reddish brown (female); bill dusky greenish to blackish; feet dark gray to light blue.

DISTRIBUTION: From Portuguese Guinea through forested West Africa and the Congo to the Upper Uelle, the Semliki Valley, southern Kasai, and Pungo Andongo in northern Angola.

It is restricted to the lowlands and is common throughout the forested area below 4000 feet, living mainly in the scrubby second growth of old clearings. Gallery forests likewise harbor it on the northern and southern margins of the equatorial belt, but it extends little to the eastward, probably because of the higher land.

Its range is much more circumscribed than that of *C. flavicollis*, and its behavior is more secretive. The birds go in pairs and make their presence known to the practiced ear by nasal scolding notes not unlike those of *flavicollis*. The narrow white feathering above and below the eye of *simplex* and its fawn-colored under wing-coverts serve to distinguish it.

Many nests were found in the Cameroon by Bates[1] and by Holman in Ashanti. They were cup-shaped, not bulky, and placed in forks of bushes such as manioc or *Triumfetta*, not more than 5 feet above the ground. Among the materials of the base or the exterior there were usually some dry tendrils from climbing plants such as gourds. Eggs were always two, with ground color varying from white to pale stone color, and marked with long twisted lines, scrolls, blotches, and spots of rich Vandyke brown and faint lilac gray. They measured 22–26 by 16–19 mm.

Bates found most of these nests in March, August, and September. In the Ituri and Uelle districts nesting must go on during the rains, for we took breeding birds at Medje in March and August, yet six adults secured in December, January, and February were plainly non-breeding.

Six stomachs revealed fruit in every case, including various wild berries and a few pieces of small red pepper. One spider had also been eaten.

Pycnonotus barbatus tricolor (Hartlaub)

Ixos tricolor HARTLAUB, 1862, Ibis, p. 341 (type locality: Congo).

Pycnonotus tricolor SHARPE, 1873, Proc.. Zool. Soc. London, p. 717 (Congo R.). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127. REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 421 (Kwango R.). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (in part. Mpala; Kisantu; Umangi; Lower Congo). LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 17 (Mukimbungu). SALVADORI, 1915, Ann. Mus. Civ. Genova, ser. 3, vol. 6, p. 280 (Kasai). SCHOUTEDEN, 1920, Rev. Zool. Africaine, vol. 7, p. 192 (Malela). DE RIEMAECKER, 1927, Rev. Zool. Africaine, vol. 14, p. 280 (Elisabethville). CHAPIN, 1931, Nat. Hist., vol. 31, p. 600 (Lukolela).

[1] 1911, Ibis, p. 599.

Pycnonotus capensis JOHNSTON, 1884, The River Congo, p. 364. DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, p. 148 (L. Tanganyika).

Pycnonotus gabonensis REICHENOW, 1887, Jour. Ornith., p. 301 (Manyanga).

Pycnonotus nigricans SCHALOW, 1887, Jour. Ornith., p. 242 (west shore of L. Tanganyika).

Pycnonotus barbatus gabonensis REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 419 (in part. Manyanga). BERLIOZ, 1925, Bull. Mus. Hist. Nat. Paris, vol. 31, p. 350 (Luluabourg).

Pycnonotus layardi SALVADORI, 1907, Boll. Mus. Zool. Anat. Comp. Torino, vol. 22, no. 570, p. 7 (Lukonzolwa). NEAVE, 1910, Ibis, p. 135 (Kambove; Dikulwe R.; Lufupa R.). SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 284 (Elisabethville).

Pycnonotus tricolor tanganjicae REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 346 (type locality: Usumbura; also L. Mohasi; Mpororo; Kisenyi). SASSI, 1916, Ann. Naturhist Mus. Wien, vol. 30, p. 273 (in part. Kisaka; Baraka; northwest of L. Tanganyika). LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 28 (Rutshuru).

Pycnonotus barbatus tricolor MOURITZ, 1914, Ibis, p. 29 (southeastern Katanga). VERHEYEN, 1941, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 17, nos. 16, 23, pp. 4, 11 (Kiambi; Pweto; Musosa).

Pycnonotus tricolor tanganyicae SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 284 (Uvira).

Pycnonotus tricolor tricolor SCLATER AND M.-PRAED, 1918, Ibis, p. 697. SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, pp. 332, 396 (Basongo; Kamaiembi; Tshikapa; Ngombe in Kasai; Tshisika; Kwamouth); 1924, idem, vol. 12, pp. 269, 417 (Leopoldville; Kidada; Ikengo; Tondu); 1925, idem, vol. 13, p. 13 (Bolobo region); 1926, idem, vol. 13, p. 197 (Vista; Banana; Kifuku on Banana Bay; Temvo; Makaia Ntete; Tshela; Lundu). BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 35. STONEHAM, 1929, Ibis, p. 287 (in part. Congo). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 371. FRIEDMANN, 1930, The African Republic of Liberia and the Belgian Congo, vol. 2, p. 758 (Mobeka; Bumba). JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 850. WINTERBOTTOM, 1939, Revised check list of the birds of Northern Rhodesia, p. 48 (L. Bangweolo). GRANT AND M.-PRAED, 1940, Bull. Brit. Ornith. Club, vol. 60, p. 42; 1946, idem, vol. 66, p. 45. VERHEYEN, 1940, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 16, no. 2, p. 4 (Kanzenze). WHITE, 1944, Ibis, p. 147 (Luapula R.; Luluabourg).

Pycnonotus tricolor layardi BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 36 (in part).

Pycnonotus tricolor minor GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 187 (in part. Mt. Muhavura, 2200 m.; Ngoma; Sake; Burunga). SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 318 (Ngoma; Lulenga); 1933, idem, vol. 22, p. 376 (Nyundo; Kisenyi); 1935, idem, vol. 27, p. 402 (Gatsibu; Rutshuru; Ruindi camp; Lulenga). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 111 (in part. Ruanda; Urundi). FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 228 (Usumbura and Nyanza on L. Tanganyika). PETERS AND LOVERIDGE, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 247 (Idjwi I.).

Pycnonotus barbatus minor SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 93 (Mugunga; Nzulu; Tshumba; Runyoni; Kundhuru ya Tshuve, 2600 m.; Katanda; Bweza; Kibumba); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 337 (Astrida; Kibingo); 1943, idem, vol. 37, p. 270 (Gabiro).

Loidurusa tricolor HENDRICKX, 1944, Ostrich, vol. 15, p. 201 (southwest of L. Kivu).

SPECIMENS: Leopoldville, two males, July 2. Near Lisha, two males, July 13. Nouvelle Anvers, immature male, July 24. Ukaturaka, immature male, juvenile female, July 25.

ADULTS: Iris dark brown, bill and feet black.

DISTRIBUTION OF THE SPECIES: North of the Sahara from Morocco to Tunisia and the Fayoum, in tropical Africa from Senegal to Eritrea and Somaliland, and south to the eastern Cape Province. About 15 races are currently recognized, those in the south and east having yellow under tail-coverts, while the more northerly and westerly representatives lack this color. Three other species of this genus in the Ethiopian region, *P. capensis* and *P. nigricans* of southern Africa and *P. xanthopygos* of Arabia and Palestine, also have yellow under tail-coverts, but narrow naked wattles around their eyes. They are almost geographic representatives of one specific group, but the ranges of the two South African forms are believed to overlap in a few places.

Pycnonotus barbatus has five races with whitish under tail-coverts and perhaps 10 with those feathers distinctly yellow. The latter range northward to British Somaliland, Kodok on the Nile, the Ubangi-Shari District, and the Loango Coast. *P. b. gabonensis* of the Gaboon and Cameroon is a perfect intermediate, the under coverts white margined with pale yellow, so that it is impossible to regard *tricolor* as a species. There is occasional intergradation in the same respect in British Somaliland between the subspecies *dodsoni* and *somaliensis*. In other characters the *dodsoni* group intergrades with the *tricolor* group in Kenya Colony.

Space will not allow me to deal with all the subspecies. The widespread race of Angola and the Congo is *P. b. tricolor*, with bright yellow under tail-coverts, whole crown dark brown, only the area around eyes and chin blackish. The wings of adults measure 90–101 mm., tails 81–92, the larger birds being males. *P. b. minor* of the upper White Nile is very little different. Its chest is not quite so dark brown or so sharply separated from the whitish lower breast, and back and rump may be a shade lighter

and more grayish brown than those of *tricolor*. The wings of nine specimens of both sexes from the upper Nile measure 87–100 mm., tails 75–85 mm. Just how far south and southwest *minor* extends is hard to determine; in fact the intergradation with *tricolor* is so gradual that no sharp division exists. From Stanleyville and Lake Edward northward I shall consider all the birds as *minor*.

Pycnonotus barbatus tricolor, then, ranges from the Loango Coast, Angola, and Ovamboland eastward to the central Congo basin, the Kivu District, Ruanda-Urundi, the eastern shore of Lake Tanganyika, and the northern districts of Northern Rhodesia to the Muchinga Escarpment and Abercorn. Specimens from the Kivu highlands and the northern end of Lake Tanganyika have the dimensions and the dark brown chest of *tricolor*, so there seems to be no basis for the race *tanganjicae*.

To the east and south *tricolor* intergrades with black-capped races like *P. b. micrus* Oberholser and *P. b. layardi* Gurney. Near Tabora the intermediates resemble *P. b. fayi* Mearns of Kenya Colony. *P. b. layardi* approaches the Katanga in the Loangwa Valley, and from the upper Zambesi Valley the intermediate forms *annectans* and *vaughanjonesi* have been described.

The meeting of *tricolor* with *gabonensis* must take place a little to the north of the boundary of the Belgian Mayombe. We have specimens from Manyanga and Ganda Sundi which show little if any dilution of the yellow in the under tail-coverts, and at the latter locality, in the northern Mayombe, I examined scores of birds with the field glass and found not one example of *gabonensis*.

Throughout the whole Congo, save in the depths of the lowland forest and on the highest mountains, the "toppie," as this brown bulbul has been called in English, is one of the commonest and most familiar birds. The present race is found everywhere except in the northeast, and its voice and behavior are identical with those of *minor*. It colonizes every inhabited clearing in the forest, every opening along the forested river banks, and in the southern savannas it favors the villages and the margins of gallery forests. In the Kivu District it is ubiquitous, up to the lower edges of mountain forests, even though the altitude may be 7500 or 8000 feet. Nesting is probably carried on at almost every season. We took one breeding male at Leopoldville even in July.

Pycnonotus barbatus minor Heuglin

Pycnonotus nigricans var. *minor* HEUGLIN, 1869, Ornithologie Nordost-Afrika's, vol. 1, p. 398 (type locality: Upper White Nile).

Pycnonotus layardi EMIN, 1894, Jour. Ornith., p. 164 (Bumanja). FLOWER, 1894, Proc. Zool. Soc. London, pp. 603, 605 (Valiasnge on Lindi R.; Muyoméma).

Pycnonotus nigricans minor HARTERT, 1900, Novitates Zool., vol. 7, p. 47 (Bafwazabangi).

Pycnonotus tricolor DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (in part. Ituri). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 388 (Beni). SALVADORI, 1911, Ann. Mus. Civ. Genova, ser. 3, vol. 5, p. 449 (Zone of Gurba-Dungu). BERLIOZ, 1922, Bull. Mus. Hist. Nat. Paris, vol. 28, p. 342 (Aba). SCHOUTEDEN, 1937, Bull. Cercle Zool. Congolais, vol. 14, p. 6.

Pycnonotus tricolor minor REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 421 (Ruwenzori); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 346. SCHOUTEDEN, 1914, Rev. Zool. Africaine, vol. 3, p. 271 (Kilo); 1918, idem, vol. 5, p. 284 (Biogo; west Ruwenzori; Kaniki; Bulaimu; Buwissa; Boga; Assumba); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 106 (Niangara; Buta; Medje; Poko; Mauda; Rungu; Djamba; Mahagi Port; Faradje; Abimva; Panga). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 186 (Mangbetu country). BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 36. GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 187 (in part. Masidongo; Beni; Kartushi; Tabaro; Irumu; Kampi-na-Mambuti). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 371 (Uelle District). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 853 (Bahr-el-Ghazal; Butiaba).

Pycnonotus tricolor tanganjicae SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 273 (in part. Beni; Moera; Mawambi; Ukaika).

? *Pycnonotus nigricans* SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 3, p. 244 (Dongu).

Pycnonotus barbatus minor STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 565 (Kasenyi; Bunia; Saidi; Ekibondo). SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 285 (Mt. Wago); 1940, idem, vol. 34, p. 60 (Kawa Forest); 1941, idem, vol. 34, pp. 266, 365 (Kasenyi).

Pycnonotus tricolor tricolor BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 134 (in part. Ruwenzori).

SPECIMENS: Bafwasende, immature female, September 23. Avakubi, male, October 15; immature male, October 15. Ngayu, immature male, December 22. Medje, male, June 8; juvenile male, August 27; two females, May 22, July 25; two juvenile females, March 15; juvenile, March 29. Niangara, two females, November 25, December 1. Faradje, male, August 24; female, May 6.

DISTRIBUTION: From southern Darfur, the Bahr-el-Ghazal and Kodok on the White Nile south to Uganda, the vicinity of

Lake Edward, the Ituri forest and the Uelle-Ubangi savannas, westward to the eastern Cameroon. Specimens from Masindi in Uganda are certainly *minor*, and even those of Kakamega in North Kavirondo are more like *minor* than like *tricolor* or *fayi*. In Congo territory *minor* may extend south to Rutshuru and through the Ituri forest perhaps to Stanleyville. But no exact limit can be drawn there.

In the savannas of the Uelle, as in those around Lake Albert and Lake Edward, this brown bulbul is exceedingly common, particularly fond of villages and gardens, but also of the edges of woodland. It never forms flocks, but may assemble in numbers to feed in some fruit tree. At daybreak its broken musical twitterings always attract attention, and these pleasant notes, given from time to time all through the day, are the basis of many of its native names, such as "Natshókoro" among the Mangbetu, or "Kwótolo" with the Azande. They have no more elaborate song, but occasionally are seen calling excitedly from a perch with both wings raised aloft. The irregular rhythm and the familiarity of the birds tempt Europeans to put words to their notes. In Uganda Jackson thought they suggested "Quick, doctor, quick!," and other versions from other countries are "Get up, get up, lazy boy!," "Tsweet-tsweet William," and "Back to Calcutta."

On the Lendu Plateau the birds are common about Djugu, at 5500 feet, and on west Ruwenzori they ascend to 7100 feet in the Butahu Valley at Kalongi, where they could even be seen about the lowest patches of mountain bamboos. At the rest house of Mulu, northwest of Lake Edward, I found them at an altitude of 8000 feet.

While not a true forest bird, the brown bulbul is likewise a most familiar neighbor in all the clearings of the Ituri. Guavas, ripe papayas, and many other fruits attract them, so that fruit may be said to form a large part of their diet. Although I kept no extensive notes on stomach contents, a half dozen small black wasps were found in the esophagus of one bird, and ants and other insects in the stomach of a second.

There seemed to be no particular season of reproduction. Specimens with enlarged gonads, nests with eggs, or very young birds, were found throughout the year. It is possible that in the drier part of the Upper Uelle there is a slight suspension of nesting in the middle of the dry season, but I cannot state this with certainty.

Nests are neat cups of dry leaves, small twigs, rootlets, and perhaps a little grass, often lined with vegetable fibers of almost hair-like thinness. I have found them in a growing bunch of plantains, in the small *Ficus* trees the Medje plant in their villages for the bark, on the slanting frond of a young oil palm, and in the middle of some forking branchlets of a large thorn tree standing in a cultivated field. The height from the ground varied from 2 to 8 meters.

The eggs were always two in number, with the ground color pinkish or pinkish white, spotted rather thickly with rufous, and sometimes also with gray, the markings forming a wreath about the larger end. Dimensions are 18.9–22 by 14.1–16.3 mm. The first plumage of nestlings, though loose and fluffy, shows a close general agreement with that of the adult, even to the yellow color of the under tail-coverts.

[*Pycnonotus barbatus gabonensis* Sharpe]

Pycnonotus gabonensis SHARPE, 1871, Proc. Zool. Soc. London, p. 132, pl. 7, fig. 1 (type locality: Gaboon).

Pycnonotus barbatus gabonensis LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 17 (Lower Congo). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 372. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 140. BERLIOZ, 1941, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 13, p. 403 (Brazzaville). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 71 (Loango; Bakouli country).

Although sometimes stated to occur in the Lower Congo or some other western part of the colony, this race appears not yet to be known there. I have seen a specimen collected by Malbrant at Dolisie in the French Congo, perhaps 40 miles north of the Shiloango River, yet at Ganda Sundi in the Belgian Mayombe all the birds I saw had distinctly yellow under tail-coverts. One that I collected there had these feathers a trifle lighter yellow than is usual for *tricolor*, as have two specimens taken at Manyanga by Bohndorff. But these are not *gabonensis*.

It is possible, of course, that occasional specimens of *gabonensis* may occur in Congo territory, but I doubt if that race reaches the Ubangi River. It does, however, extend from the base of Mt. Cameroon and the Bamenda highland south almost to the Shiloango River and inland at least to Yukaduma and Molundu in the southeast Cameroon.

[*Pycnonotus barbatus vaughanjonesi* White]

Pycnonotus tricolor vaughanjonesi WHITE, 1944, Ibis, p. 146 (type locality: Mwinilunga, Northern Rhodesia; also from Musonoi in Katanga); 1946, Ibis, p. 79 (northern Mwinilunga district).

At first this race was believed by White to range from Barotseland northward to Musonoi in the Katanga, but later he decided it must be confined to the high ground along the Congo border and in the northern Mwinilunga district. With wings 88–104 mm. and fore crown very dark brown, *P. b. vaughanjonesi* must at best be very like *P. b. harterti* Zedlitz.[1] The slightly longer wings are the main point of distinction from *tricolor*, and I am not yet inclined to apply the name to all the birds of the Upper Katanga.

[*Pycnonotus barbatus layardi* Gurney]

Pycnonotus layardi GURNEY, 1879, Ibis, p. 390 (type locality: Rustenburg, Transvaal). NEAVE, 1907, Mem. Proc. Manchester Lit. Phil. Soc., vol. 51, no. 10, p. 59 (Lusenfwa R. and Msofu R. in Northern Rhodesia).

This black-capped race extends from Natal northward to Nyasaland and apparently to Lusaka in Northern Rhodesia. I have seen an example from Ndola, close to the Katanga border, with crown much too blackish for *tricolor*. Similar birds may perhaps be expected in the very southeastern corner of the Katanga.

Neolestes torquatus Cabanis

Neolestes torquatus CABANIS, 1875, Jour. Ornith., p. 237, pl. 1, fig. 1 (type locality: Chinchoxo, Portuguese Congo). GADOW, 1883, Catalogue of the birds in the British Museum, vol. 8, p. 171 (Landana). REICHENOW, 1887, Jour. Ornith., p. 305 (Leopoldville); 1903, Die Vögel Afrikas, vol. 2, p. 556 (L. Kivu); 1923, Mitt. Zool. Staatsinst. Zool. Mus. Hamburg, vol. 40, p. 63 (Lupungu in Lomami District). LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 12 (Mukimbungu). SCLATER, 1912, *in* Shelley, The birds of Africa, vol. 5, pt. 2, p. 405; 1930, Systema avium Aethiopicarum, pt. 2, p. 639. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 262 (Munié-Mboka); 1923, idem, vol. 11, p. 332, 396 (Tshikapa; Tshisika; Macaco; Kwamouth); 1924, idem, vol. 12, p. 269 (Kidada). CHAPIN, 1921, Amer. Mus. Novitates, no. 17, p. 6 (Kunzulu; Boma). BERLIOZ, 1925, Bull. Mus. Hist. Nat. Paris, vol. 31, p. 349 (Luluabourg). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 448, fig. 96.

Urolestes torquatus VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 114 ("Albert Edward district" = Idjwi I.).

[1] 1916, Jour. Ornith., p. 71 (Huilla, Angola).

SPECIMENS: Kwamouth, male, immature male, immature female, December 19.

ADULT MALE: Iris very dark brown, bill and feet black.

DISTRIBUTION: Savannas south of the Congo forest, from the Loango Coast to the northern edge of the Benguella Plateau and the region of Lake Dilolo, eastward to Marungu and the Manyema District and then northward to Lake Kivu. Although mainly a bird of the lowlands, not invading the edge of the forest, it does ascend in places to 5000 feet or more. Boulton obtained one example at Mombolo, on the highland northwest of Luimbale, Angola. Rockefeller and Murphy also collected one at Mkuli, 5225 feet, in Marungu. Besides the Lake Kivu record of Kandt, at least two were secured on Idjwi Island in that lake by Grauer. None has been found farther north in the Kivu District.

This small, stocky bulbul has no real resemblance to a shrike and was long assigned to the family Laniidae merely because of its broad, blue-black chest band, which extends upward to join a temporal stripe of the same color. The bill is not unlike that of *Pycnonotus* but wider and more arched. The wing is rounded, the metatarsus rather short, and in life it reminded me of nothing but a bulbul.

My acquaintance with *Neolestes* was first made at Kwamouth, where I found it perching in the bushes and small trees of the savanna, feeding on fruit, and giving twittering notes that were not without resemblance to the voice of *Pycnonotus barbatus tricolor*. Pairs or family parties are the rule, although about Boma I found the birds singly, sitting on rather open perches, and shy. Father Callewaert has collected many specimens at Luluabourg in the Kasai, where the species must be especially common. I find no geographic variation among birds from Angola, the southern Congo, and Lake Kivu.

The breeding season appears to begin with the early rains, probably around November 1. Two of my specimens from Kwamouth in December are still in juvenal plumage, as are a half dozen from Luluabourg in January and early February. The color pattern at this stage is much the same as in the adult, but the crown and nape are greenish, almost like the upper back. Scapulars and wing-coverts have light ochraceous tips, and the chest band and lines on sides of head are dull black. There is none of the fine barring so frequent in the first plumage of true shrikes.

A nest which I found near Kunzulu in December, in dense scrubby savanna, was placed in a bush at 4 feet from the ground, a frail cup of slender grass and plant stems containing two eggs. These were pinkish white, indistinctly speckled with darker pinkish and with a faint rufous zone around the larger end, the measurements 20 by 14.4 mm. and 20.8 by 14.2 mm.

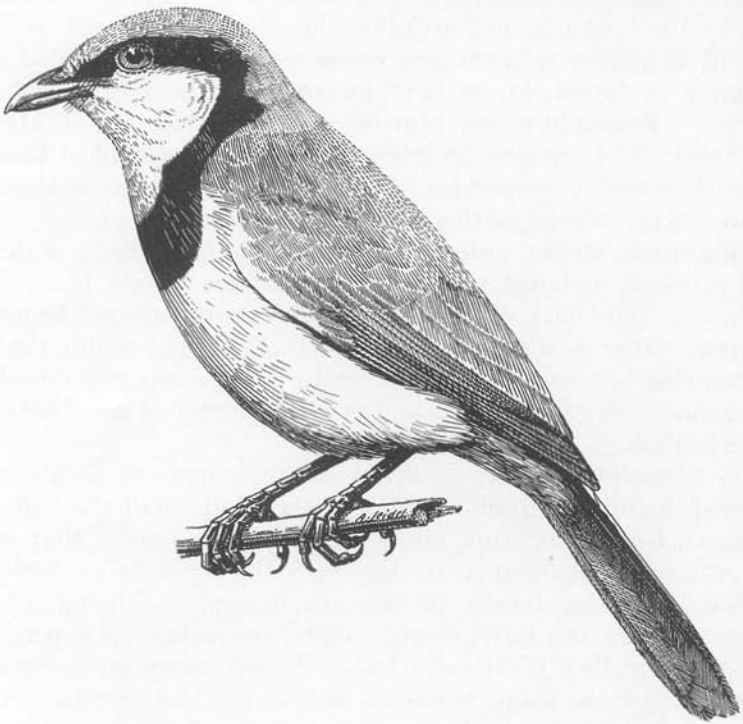

FIG. 8. *Neolestes torquatus*, the black-collared bulbul.

Stomachs of three birds contained only small wild fruits, and the appearance of the intestines was much like that of the fruit-eating bulbuls.

Pyrrhurus scandens orientalis (Hartlaub)

Xenocichla orientalis HARTLAUB, 1883, Jour. Ornith., p. 429 (type locality: Tomaya, southern Bahr-el-Ghazal Province).

? *Trichophorus* EMIN, 1888, Emin Pasha in Central Africa, p. 200 (Monbuttu). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 3, pp. 244, 257 (Dongu; Tomaya).

Phyllastrephus scandens orientalis REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 398. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 282 (Beni).

Pyrhurrus orientalis ALEXANDER, 1908, Bull. Brit. Ornith. Club, vol. 23, p. 16 (Uelle R.).

Xenocichla scandens orientalis O.-GRANT, 1917, Ibis, p. 82 (Tingasi; Ubangi R. district).

Prosphorocichla scandens orientalis SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 332 (Tshisika); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 108; 1940, Rev. Zool. Bot. Africaines, vol. 34, p. 60 (Kawa Forest).

Pyrrhurus scandens orientalis BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 30; 1936, The birds of tropical West Africa, vol. 4, p. 159 (Kembi on Ubangi R.; Angu; Guruba R.). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 380.

Pyrrhurus scandens scandens BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 73 (Bangui).

SPECIMENS: Niangara, two females, June 15, November 10. Faradje, male, October 6; three females, July 10, October 6, November 29; immature female, October 4.

ADULTS: Iris rather light brown, rim of eyelids light greenish; maxilla dusky, with light gray lower edge, mandible light gray; feet light pinkish gray.

DISTRIBUTION OF THE SPECIES: From Senegal and the Gambia eastward to Nigeria, Tibati in northern Cameroon, and the southern edge of the Bahr-el-Ghazal Province. Southward it extends through the Semliki Valley and reaches the shore of Lake Tanganyika, also through the Cameroon to the Gaboon and the Kasai District.

Pyrrhurus scandens scandens (Swainson) of Upper Guinea and the region of Tibati is large and light colored, with wings 99–116 mm. *P. s. acedis* of the forest of southern Cameroon, the Gaboon, and the western Congo is distinctly darker above and deeper rufous on the tail, with wings 95–104 mm. *P. s. orientalis* is rather light in color, with wings of adults 95–107 mm. It ranges from the Ubangi-Shari District and the upper Ubangi River eastward to the Upper Uelle, the southern Sudan border, the west shore of Lake Albert, and the forested Semliki Valley. Although there are no records from the vicinity of Lake Kivu, I have seen an immature male collected for R. E. Moreau some 15 miles north of Ujiji on the east side of Lake Tanganyika. In size and coloration it agrees best with *orientalis*. Schouteden (1923) referred his three specimens from Tshisika, southern Kasai, to that race.

This bulbul is restricted to the fringes of the Upper Congo forest, on the north and east, and especially to the gallery forests in savanna country. Such a noisy bird could not escape observation. About Niangara it is common in the small areas of woodland along watercourses. Skulking in the undergrowth, it goes usually in small parties, uttering a short, hoarse call note, like "chut," and from time to time a series of louder and harsher notes with a nasal intonation. About Faradje we found these birds only in a strip of forest near Madrapili's village, on the road to Aba. In the same damp woods lived *Ptyrticus turdinus*, likewise noisy and even more difficult to approach, but the latter bird can be distinguished by its much more melodious voice.

Along the eastern Congo border the species is known only from the Kawa Forest, on the shore of Lake Albert, and the vicinity of Beni. We shot one right on the bank of the Semliki River and noticed none anywhere else. The combined ranges of *scandens* and *orientalis* appear to follow the northern edge of the forest belt in a band about 3500 miles long, yet in many places scarcely 150 miles wide.

In the Uelle District the breeding season seemed to be the latter part of the rains. Two females with ovaries more or less enlarged were taken in early October and mid-November, while others in June and July were non-breeding. The nest of *orientalis* remains to be discovered, but one of *scandens* in the Plateau Province of Nigeria was described by Hutson as slung in a leafy bush overhanging a stream. Built mainly of fine grass, it had a leaf or two in the outer side, and the two or three eggs were buffy with fine brownish speckling and mottled at the large end with purple brown.

The species must be mainly insectivorous. Four stomachs of *orientalis* disclosed hard fragments of insects in every case, four small hairless caterpillars as well, and only once were there a few small seeds, apparently from fruit.

Pyrrhurus scandens acedis (Oberholser)

Prosphorocichla scandens acedis OBERHOLSER, 1905, Smithsonian Misc. Coll., vol. 48, p. 157 (type locality: Ogobai, or Ogowé R., Gaboon).

Prospericichla scandens SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 396 (Kwamouth).

Prosphorocichla scandens SCHOUTEDEN, 1924, Rev. Zool. Africaine, vol. 12, p. 417 (Tondu).

DISTRIBUTION: Lowland forest of the southern Cameroon, the Gaboon, and Middle Congo region. Schouteden's specimens from Kwamouth and Lake Tumba should belong to this race, but I regret that I have not examined them carefully. *P. s. acedis* seems to cross the western part of the Lower Guinea forest, whereas *orientalis* follows its outer fringe. The species must be rare or local in the western Congo, for I never noticed it at Lukolela or in the Mayombe. It may well be restricted to the neighborhood of forested streams.

There is a certain resemblance in color between *Pyrrhurus s. acedis* and *Phyllastrephus fulviventris* of the Lower Congo, but the latter bird is smaller, longer billed, with browner crown and a noticeable light line above the eye.

Just north of the Equator in the Cameroon Bates[1] found the breeding season was in December and January. In the Congo, south of the Equator, it may be expected toward May or June. The nest he described as "hung, rather than set, between the forks of a twig, attached by means of woolly-looking cobweb and black hair-like fibres, forming a net around the outside, which was of dry leaves and palm-leaf strips." It was located in a tree over a stream. The two eggs were dull creamy white or pale stone color, with clouded markings of grayish and overlying spots and scrawls of umber brown.

KEY TO THE SPECIES OF *Phyllastrephus* IN OR NEAR THE CONGO

1. No yellow or green in any part of plumage; upperparts brown, sometimes faintly tinged with olive 2
   With more or less green or yellow in plumage 5
2. Tail scarcely more rufous than back, and back brown, often rather rufous. 3
   Tail and its upper coverts rufous, contrasting with back, which is brown with a faint olive tinge 4
3. Darker brown, less rufous, on crown and back; larger, wing of males 83–93 mm., of females 75–83, and with bill relatively larger ..... *P. terrestris*
   More rufous and lighter on crown and back; smaller, wing of males 75–86 mm., of females 68–75, and with relatively smaller bill .... *P. strepitans*
4. Larger, wing of males 84–95 mm., of females 77–84, culmen to base 21 mm. or more; a whitish line above eye and whitish feathers on eyelids; underparts mostly soiled cream color ..... *P. fulviventris*
   Smaller, wing of males 80–85 mm., of females 76–80, culmen to base not over 21 mm.; no whitish feathering near eye; underparts grayish buff ..... *P. cerviniventris*

[1] 1909, Ibis, p. 58; 1911, idem, p. 600.

5. Coloration mainly dull olive, lighter below, and grayish olive on throat; tail dark rufous ..... *P. hypochloris*
   Coloration more varied, throat whitish, pale yellowish olive, or yellow 6
6. Throat yellow or pale olive 7
   Throat white or grayish white 10
7. Crown with broad median stripe of blackish ..... *P. lorenzi*
   Crown entirely greenish 8
8. Throat pale yellowish olive ..... *P. fischeri*
   Throat bright yellow 9
9. Larger, wing of males more than 82 mm. long, of females more than 72 .. .. *P. xavieri*
   Smaller, wing of males less than 81 mm. long, of females less than 71 .... *P. icterinus*
10. Larger, wing of males more than 92 mm. long, of females more than 78; tail greenish ..... *P. flavostriatus*
    Smaller, wing of males less than 91 mm. long, of females less than 76; tail rufous brown ..... *P. albigularis*

[*Phyllastrephus strepitans* (Reichenow)]

Criniger strepitans REICHENOW, 1879, Ornith. Centralbl., p. 139 (type locality: Malindi, Kenya Colony).

Phyllastrephus strepitans REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 405 (Lado; Wadelai). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, pp. 115, 116 ("northeastern Belgian Congo"). FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 231.

Phyllastrephus strepitans strepitans BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 32 ("northeast Belgian Congo").

Although sometimes stated to occur in the northeastern Congo, this species does not extend much to the southwest of Lado and Wadelai on the Bahr-el-Jebel and has not been found on the shores of Lake Albert. Its habitat is in arid scrub country from Somaliland, southern Abyssinia, and the Bahr-el-Jebel to the coastal districts of Tanganyika Territory.

There can be no doubt of the occurrence of both *P. strepitans* and *P. terrestris* in the coastal region of East Africa between Dar-es-Salaam and the lower Tana River, so they are not conspecific. The bill of *terrestris* seems consistently larger than that of *strepitans*, its wings a little longer when birds of the same sex are compared, and its upperparts are not quite so rufous.

[*Phyllastrephus terrestris suahelicus* Reichenow]

Phyllastrephus terrestris suahelicus REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 405 (type locality: Msua, near Bagamoyo, Tanganyika Territory).

Phyllostrephus strepitans SHELLEY, 1901, Ibis, p. 166 (Kalungwisi R.).

Phyllastrephus strepitans REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 405 (in part).

This brown-backed bulbul was collected by Alfred Sharpe along the Kalungwisi River, which flows into Lake Moero from the southeast. It may therefore be looked for in adjacent Belgian territory. *P. t. suahelicus* is a rather rufescent race of the wide-ranging South African *P. terrestris* and is believed to extend from the Limpopo River to Tanganyika Territory, the lower Tana River, and the eastern part of Northern Rhodesia, where it reaches Mazabuka and the Loangwa Valley. *P. t. rhodesiae* Roberts seems to be another valid race, ranging from Bechuanaland and western Rhodesia to Gambos in southern Angola.

Phyllastrephus fulviventris Cabanis

Phyllostrephus fulviventris CABANIS, 1876, Jour. Ornith., p. 92 (type locality: Chinchoxo, Portuguese Congo). REICHENOW, 1887, Jour. Ornith., p. 301 (Manyanga). SHARPE, 1881, Catalogue of the birds in the British Museum, vol. 6, p. 117 (Landana).

Phyllastrephus fulviventris REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 404. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 384. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 172.

? *Criniger cabanisi* DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Lower Congo).

DISTRIBUTION: Loango Coast and lower Congo River south through western Angola to Mossamedes Province. It is evident from the area inhabited that this is a bird of gallery forests rather than of the main forest, and there is no record from the Mayombe Forest or from any locality east of the Cataracts district.

We have two of Bohndorff's specimens from Manyanga and one from Ngombe (now known as Gombe Lutete), and Ansorge gathered a series of more than 18 in Angola. According to Ansorge's labels the iris is reddish brown (burnt sienna to mahogany red) in both sexes; upper mandible gray tinged with greenish, lower mandible grayish white, with a streak of gray along each side; feet flesh color faintly tinged with bluish, or sometimes mostly grayish. It is regrettable that no one has so far furnished any information as to behavior or nesting.

Phyllastrephus cerviniventris Shelley

Phyllostrophus cerviniventris SHELLEY, 1894, Ibis, p. 10, pl. 2 (type locality: Zomba, Nyasaland). NEAVE, 1910, Ibis, p. 134 (Bunkeya R.).

Phyllastrephus cerviniventris BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 31 (southeastern Belgian Congo). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 385 (Katanga). JACKSON, 1938, The birds of Kenya Colony

and...Uganda, vol. 2, p. 867. DELACOUR, 1943, Zoologica, vol. 28, p. 25. WHITE, 1946, Ibis, p. 80 (Mwinilunga in Northern Rhodesia).

Phyllastrephus cerviniventris cerviniventris FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 118. FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 233.

DISTRIBUTION: Southern Nyasaland and adjacent part of Mozambique north to the Upper Katanga, the district southeast of Lake Moero, the base of Kilimanjaro, and the Tharaka district of Kenya Colony.

The only Congo record is that of two females collected by Neave near the Bunkeya River at 3400 feet, but the occurrence in the Katanga should not be exceptional. He noted the iris as golden brown, bill brownish horn color with lower mandible paler toward base, feet flesh color.

This dull-colored species is a bird of rather low levels, usually below 5000 feet in Nyasaland, found in pairs or small family parties in savanna woodland, where it keeps very much to thickets in gullies or near streams. Its voice is a slightly rasping chatter which Vincent[1] tried to write as "jhiddie-jweck-jweck." A nest found on November 25 by Belcher[2] was a fairly deep cup, in a fork of a green shrub above a stream bed, made of "grey-beard moss" with one or two dead leaves at its base, and with an inner cup of rootlets. The two eggs were gray with a tinge of cream, well covered with markings of dull blue gray; dimensions 23.5 by 16 mm.

Phyllastrephus hypochloris (Jackson)

Stelgidillas hypochloris JACKSON, 1906, Bull. Brit. Ornith. Club, vol. 19, p. 20 (type locality: Kibirau, Toro, Uganda).

Andropadus kagerensis REICHENOW, 1908, Ornith. Monatsber., p. 47 (type locality: Buddu Forest, west of L. Victoria).

Phyllastrephus kagerensis SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 265 (Beni; Beni-Mawambi).

Phyllastrephus hypochloris GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 176. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 385. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 870 (Semliki). DELACOUR, 1943, Zoologica, vol. 28, p. 25.

DISTRIBUTION: Forests of Uganda, north to the Lotti Forest in the southern Sudan, east to North Kavirondo, south to Buddu,

[1] 1935, Ibis, pp. 367, 368.

[2] 1930, The birds of Nyasaland, p. 189.

and west to the Semliki Forest near Beni. It does not seem to inhabit the Budongo Forest, though known from the Bugoma Forest of Uganda and rather common in wooded regions in Toro. Records are few from the vicinity of Beni, and there are none from farther north in the Ituri or near Lake Kivu.

This bulbul bears considerable resemblance to *Andropadus* in the texture of its plumage and its dull olive coloration, with slightly grayer throat and more rufous brown tail. The bill is somewhat lengthened and hooked as in *Phyllastrephus*, though not so compressed as in most species, and the rictal bristles are well developed.

My only experience with it was in the Mpanga Forest near Fort Portal, where one was collected as it sought food amid the lower boughs of forest trees. It was a member of a bird party which included *Phyllastrephus fischeri sucosus* and *Symplectes bicolor mentalis*, and its behavior seemed to be normal for the genus to which it is assigned.

Phyllastrephus fischeri sucosus Reichenow

Phyllastrephus cabanisi sucosus REICHENOW, 1903, Jour. Ornith., p. 544 (type locality: Bukoba, west shore of L. Victoria); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 344. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 265 (northwest of L. Tanganyika, 2000 m.; forest east of Rutshuru Plain, 1600 m.). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 282 (Yamba-Yamba); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 94; 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 285 (Mt. Wago).

Andropadus modestus REICHENOW, 1908, Ornith. Monatsber., p. 160 (type locality: Kirk Falls on Semliki R.); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 345 (forest north of Beni).

Phyllastrephus sucosus O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 386 (Mpanga Forest, 5000 ft.; Mubuku Valley).

Phyllastrephus sucosus sucosus SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 383 (Ruwenzori; Semliki; Kivu). FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 232 (Ruanda; Urundi ?). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 869.

Phyllastrephus cabanisi cabanisi SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 285 (in part. Yamba-Yamba).

DISTRIBUTION OF THE SPECIES: Coastal region of East Africa, from the Juba River to southern Tanganyika Territory, then across the continent to the highlands west of the Albertine Rift, the southern Congo, and Angola; south also to southern Nyasaland and Mt. Namuli in Mozambique.

The three East African races have the crown brownish olive to dark brown, underparts pale olive gray, becoming whitish on the throat. *P. f. fischeri* Reichenow is a lowland bird, from the coast between the Juba and the Pangani, replaced to the southward by *P. f. münzneri* Reichenow, a little larger. *P. f. placidus* (Shelley) is the highland representative east of the Great Rift Valley from Marsabit to Nyasaland. But in the region of Lake Nyasa the crown tends to be more olive and the middle of underparts more yellowish, and this yellow begins to appear in specimens from the Mbulu district in Tanganyika Territory.

West of the Rift Valley in Kenya Colony, *P. f. sucosus* has the crown almost as green as the back, throat and underparts much more washed with greenish yellow, and wings 70–85 mm. It extends to the highlands of the southern Sudan, Uganda, and those along the Albertine Rift in the eastern Congo. On the south it reaches Loliondo in Tanganyika Territory and the highlands near Baraka in the eastern Congo. Usually keeping above 4500 feet, it has nevertheless been found at Bukoba on Lake Victoria.

The highlands from Ufipa at the south end of Lake Tanganyika, Marungu, Katanga, and Northern Rhodesia to Angola are occupied by a slightly larger race, *P. f. cabanisi*, which likewise has a greenish crown and differs little in color beneath, but its wing measures 82–97 mm. Specimens from the Benguella Plateau may be a little greener on the breast.

In many of the mountain forests of the eastern Congo, mostly above 5000 feet, but down to 4000 feet near Baraka, *P. f. sucosus* is a fairly common bird. At Djugu on the Lendu Plateau we found that it joined in mixed parties with *P. flavostriatus graueri, Chlorocichla laetissima, Coracina graueri, Campephaga p. petiti, Malacocincla pyrrhoptera, Trochocercus albiventris*, and *Symplectes bicolor mentalis*. Its behavior was thus very similar to that of *Phyllastrephus xavieri* and *icterinus* in the lowland forests, and it gave similar nasal scolding notes. I found it also at 8000 feet on the mountains west of Lake Edward, in small parties, and in forest at 4700 feet in the mountains east of the Rutshuru Plain. But on the slopes of Ruwenzori it seemed rare, and I secured only a single example, at 6800 feet. On the Kivu Volcanoes I failed to see it, nor has anyone else collected it there. It doubtless follows along the mountains west of Lake Kivu, for both Grauer and Pilette secured specimens west of Baraka.

The iris of this race is dull gray brown or light gray with a faint tinge of olive; maxilla blackish brown, mandible light gray but dusky toward tip, gape yellow; feet light gray with a slight tinge of bluish, claws grayish brown. Records were kept from only two stomachs, both containing only insects. A nest with two eggs was found by Loveridge in the vicinity of Bukoba on January 12, but the eggs were not described.

Phyllastrephus fischeri cabanisi (Sharpe)

Criniger cabanisi SHARPE, 1881, Catalogue of the birds in the British Museum, vol. 6, p. 83 (type locality: Angola).

Phyllastrephus cabanisi REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 401 (in part. Mpala); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika, Exped., vol. 3, p. 343; 1923, Mitt. Zool. Staatsinst. Zool. Mus. Hamburg, vol. 40, p. 65 (Lupungu in Lomami District).

Criniger sylvicultor NEAVE, 1909, Ann. Mag. Nat. Hist., ser. 8, vol. 4, p. 130 (type locality: Dikulwe R., Katanga); 1910, Ibis, p. 133 (Kambove, 4500 ft.; Dikulwe R., 4000 ft.; Bunkeya R., 3000 ft.)

Phyllastrephus sylvicultur BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 33.

Phyllastrephus sucosus sylvicultor SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 384. LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 76 (Kamina).

Phyllastrephus fischeri sylvicultor MOREAU, 1937, Bull. Brit. Ornith. Club, vol. 57, p. 127. WHITE, 1946, Ibis, p. 509 (Luakera Forest near Congo border).

Phyllastrephus cabanisi cabanisi SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 285 (in part. Dilolo; L. Musolo; Kamina).

Phyllastrephus fischeri cabanisi GRANT AND M.-PRAED, 1946, Bull. Brit. Ornith. Club, vol. 67, p. 12.

DISTRIBUTION: Western highlands of Angola to the Katanga, the southwest shore of Lake Tanganyika, northern part of Northern Rhodesia, and Ufipa in Tanganyika Territory. The name *cabanisi* was proposed as a substitute name for *Trichophorus flaveolus* Cabanis,[1] described from specimens collected by Schütt in Angola. I have examined the type of *flaveolus* in Berlin and have made sure that it has the breast only pale olive, not yellow as in *P. xavieri* of the Cameroon-Congo forest.

Neave described *P. sylvicultor* of the Katanga as new because he believed *cabanisi* to be a bright yellow-breasted bird. In my opinion *sylvicultor* cannot be separated from *cabanisi* of Angola, and the confusion over the name *cabanisi* was mainly due to

[1] 1880, Ornith. Centralbl., p. 174.

the fact that skins of the yellow-breasted *xavieri* from Rio Benito and Cameroon were labeled as *cabanisi* long ago in the British Museum.

Phyllastrephus fischeri cabanisi is not found in the equatorial forest, but in patches of woodland in the southern savanna from Lupungu in the Lomami District to Moba on Lake Tanganyika, up to 4500 feet in the Katanga, and to 6800 feet in Ufipa. Rockefeller and Murphy obtained two specimens at Lake Suzi in southern Marungu. Neave reported it as not uncommon in thick woods and mentioned its harsh croaking note. He noted the iris as pale olive brown; bill grayish horn color, base of lower mandible paler; gape yellow; feet slate colored.

Phyllastrephus xavieri xavieri (Oustalet)

Xenocichla xavieri OUSTALET, 1892, Naturaliste, ser. 2, vol. 6, p. 218 (type locality: Bangui on Ubangi R.); 1893, idem, vol. 7, p. 127.

Bleda xavieri REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 386.

Phyllastrephus cabinisi REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 401 (in part. Kasongo). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 180 (southern Cameroon). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 72 (Bangui).

Phyllastrephus icterinus SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 264 (in part).

Phyllastrephus icterinus sethsmithi SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 282 (Beni; Moera; Bolovet; Makojoba; Lesse-Boga).

Argaleocichla icterinus sethsmithi GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 178 (Kartushi; Lesse; Kampi-na-Mambuti).

Argaleocichla icterina sethsmithi SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 387. JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 865 (Ituri; Semliki).

Phyllastrephus xavieri STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 566 (Saidi in Ituri). DELACOUR, 1943, Zoologica, vol. 28, p. 25. CHAPIN, 1944, Ibis, pp. 544, 545 (Cameroon; Congo; Uganda).

Argalocichla xavieri xavieri VAN SOMEREN, 1946, Bull. Brit. Ornith. Club., vol. 67, p. 35 (Bwamba district).

SPECIMENS: Avakubi, three males, January 8, October 12, 22; immature male, October 17; female, February 10; female, September 27. Ngayu, male, December 10; immature male, December 16.

ADULT MALE: Iris brownish gray; maxilla dusky brown, mandible light gray streaked with dusky, corners of mouth yellow, this color continued out along both tomia; feet light blue-gray.

DISTRIBUTION OF THE SPECIES: Heavy forests, from the vicinity of Kumba in British Cameroons, Nkongsamba and Efulen in French Cameroon, and Rio Benito eastward across the Upper Congo to the Ituri, the Semliki, and Budongo and Bugoma forests in Uganda.

The greater part of the range is occupied by nominate *xavieri*, but *P. x. serlei* Chapin,[1] less yellow on the underparts, occupies the area north and west of Mt. Cameroon, at levels between 600 and 3000 feet.

Over most of its range *P. xavieri* lives side by side with a smaller species, *P. icterinus*, which is extraordinarily like it in color. There has been much confusion between them, and *P. xavieri* has often been called *cabanisi*. In the Paris Museum I examined Oustalet's type, which he had compared with *Bleda eximia notata*, and found it virtually identical with *Phyllastrephus sethsmithi* Hartert and Neumann. The latter has been erroneously regarded as a large eastern race of *P. icterinus*.

In this whole group the males are regularly much larger than females, so there is some difficulty in distinguishing females of *xavieri* from males of *icterinus*. In my own series adult males of *xavieri* have wings 83–90, tails 75–82 mm. Adult males of *icterinus* have wings 73–80, tails 64–73 mm. Here there is no overlapping. But adult females of *xavieri* have wings 73–77, tails 65–69 mm., and adult females of *icterinus* from the Congo have wings 67–70, tails 56–63 mm. Unless the sex is correctly determined, birds of intermediate dimensions may be hard to name. Immature birds, too, have wings slightly shorter than adults.

Both Sassi (1916) and Gyldenstolpe (1924) have plainly included examples of both species under one name. I have examined Sassi's series in Vienna and judged that at least 13 out of 36 were really *icterinus*. Grauer's sexing was not reliable, so that made matters very perplexing. The 15 with wings over 79 mm. were probably *xavieri*.

While *xavieri* is common in much of the region inhabited by *icterinus*, and both occur at Bangui, in the Ituri, and perhaps south to Kasongo in the Manyema, I could find only the smaller *icterinus* at Lukolela and in the Mayombe. On the other hand, only *xavieri* occurs in the forests of western Uganda, where the

[1] 1949, Bull. Brit. Ornith. Club, vol. 69, p. 70 (Kumba, British Cameroons).

wings of adult males measure 83–91 mm., those of adult females 72–77 mm. Cameroon males have wings 86–89 mm. long, so, unless the western birds should prove to be a little darker olive on crown and back, *sethsmithi* must remain a synonym.

Nowhere does *P. x. xavieri* venture up into mountain forests, its place being taken there by *P. fischeri sucosus*, with breast only slightly yellowish. It is often one of the common birds inside the lowland forest but need never be expected in a clearing or garden. One may be walking along a forest path, looking hard for small birds and seeing few, when suddenly the voices of birds are heard, and a varied party of them is seen working its way through the lower boughs. Besides the white-bearded *Criniger calurus* with its loud "cheep!," there will probably be a number of small birds of no distinctive color, giving disagreeable nasal or scolding calls and flitting swiftly from branch to branch, or stopping to explore tangles of dead leaves that hang amid them. These are more than likely to be *Phyllastrephus xavieri* or *icterinus* —one nevers knows which till it is held in the hand. Just what the relations are between them we can only guess, but if we can distinguish them as species, they probably behave so.

None of our specimens of *P. xavieri* was in breeding condition, and I can only guess that they nest irregularly at almost any time of year. Six stomachs were noted as containing insects in every case: remains of small beetles as a rule, with single green caterpillars in two instances, also some flat, dark-colored eggs of an orthopter, and one spider.

Phyllastrephus icterinus tricolor (Cassin)

Trichophorus tricolor CASSIN, 1857, Proc. Acad. Nat. Sci. Philadelphia, vol. 9, p. 33 (type locality: Muni R., West Africa).

Criniger tricolor REICHENOW, 1887, Jour. Ornith., p. 309 (Kasongo). HARTERT, 1900, Novitates Zool., vol. 7, p. 48 (Ibina R. in Ituri). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32.

Phyllastrephus icterinus REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 402. O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 387 (Mawambi). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 264 (Beni; Moera; Ukaika). SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 333 (Kamaiembi). BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 33; 1936, The birds of tropical West Africa, vol. 4, p. 178, fig. 52 (Libokwa; Tungeddi). CHAPIN, 1931, Nat. Hist., vol. 31, p. 602 (Lukolela); 1944, Ibis, vol. 86, pp. 543–545 (Congo; Cameroon; Gaboon).

Criniger icterina O.-GRANT, 1908, Ibis, p. 304 (below Kasongo).

Phyllastrephus icterinus sethsmithi REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 344.

Argaleocichla icterina icterina SCLATER, 1928, Bull. Brit. Ornith. Club, vol. 48, p. 67; 1930, Systema avium Aethiopicarum, pt. 2, p. 386. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 108 (Poko; Bondo Mabe; Kotili; Nava R.).

Phyllastrephus icterinus icterinus STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 566 (Saidi in Ituri).

Argaleocichla icterina GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 180 (Luluabourg).

SPECIMENS: Avakubi, male, January 15. Ngayu, male, December 17; immature male, December 15. Bafwabaka, male, July 26.

ADULT MALE AND FEMALE: Iris grayish brown; bill dusky above, gray below, and grayish yellow along tomia, corners of mouth pale yellow; feet pale bluish or bluish gray.

DISTRIBUTION OF THE SPECIES: Sierra Leone to Southern Nigeria, Fernando Po, forested Cameroon, Gaboon, Mayombe, and Upper Congo forest east to the Semliki. To the south it doubtless reaches the Manyema, and we have one specimen from Luluabourg in the Kasai.

The nominate race of Upper Guinea is a little brighter yellow on throat and middle of breast than *P. i. tricolor* of the British Cameroons and the Lower Guinea forest, but I find no difference in size. Eight males of *tricolor* from Fernando Po have wings 75–81 mm., two females both 70 mm. These dimensions are not unlike those of Congo specimens, as given under *P. xavieri*.

The behavior of the small icterine bulbul does not differ from that of the larger *xavieri*, and in many places I believe they are found in the same foraging bird parties. The varied composition of these gatherings has been discussed in my first volume (Bull. Amer. Mus. Nat. Hist., vol. 65, 1932, pp. 220–224). The nasal calls of *P. icterinus* help one in following the party, indeed the natives at Lukolela know it as the "party bird" (or "moléké mu moté" in the Mobangi language, "moté" being their word for a mixed bird party, as "mutunga" is in the Lingala trade language).

At Lukolela and in the Mayombe Forest I collected a number of *P. icterinus* but not one *P. xavieri*. In some bird parties there might be 15 or 20 of the small, yellow-breasted bulbuls, and not infrequently they outnumbered all the other birds present, though

there might be from eight to a dozen species represented. It was unusual to find *icterinus* alone, except perhaps toward nightfall. That made me wonder how the bird parties assemble each morning, for I have no doubt the birds go to roost by themselves. May it not be that the calls of *Criniger calurus*, *Phyllastrephus icterinus*, and *Dicrurus atripennis* serve to rally the birds that enjoy this association?

Males of *P. icterinus* taken at Lukolela in the rather dry months of August and September were non-breeding. Most of those collected during October and November had gonads fully enlarged, even though they were in the bird parties. Why they seemed so foot-loose I cannot say, but the same may be true of other birds associated with them. The breeding season south of the Equator may last until February. Just north of it, in the Ituri, birds taken in December, January, and February were non-breeding, and a male in full sexual activity was secured in July.

Not much is known of the nesting habits. In the Cameroon Bates[1] recorded a nest slung hammock-wise in the fork of a horizontal branch of an undershrub, attached by black, hair-like fibers which also were used as a lining. Dried leaves formed the other material. The female was incubating two eggs, very glossy, "mauve-green," speckled with dark gray and dark brown, these colors also forming a dark zone around the middle. Measurements were 20–21 by 14.5 mm. At Lukolela on October 31, 1930, I was shown a nest hung at 3 feet from the ground in primary forest, of exactly the same construction and materials. The black fibers are no doubt those of the fungus *Marasmius*, which bind together dead leaves clinging naturally amid the lower boughs. Many birds use them. I thought at the time the nest must belong to this bulbul, but my hunter was never able to collect the bird. The two eggs were pale brownish pink, brown speckled, with an extraordinary dark brown zone, situated toward the larger end, and even more striking than in Bates's figure.

The 11 stomachs I have now examined showed no sign that fruits had been eaten. All contained bits of insects, some rather soft bodied, and several of them were noted as very small cicadas. Four birds had eaten small naked caterpillars, and one a small moth.

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[1] 1927, Ibis, p. 47, pl. 2, fig. 16.

Phyllastrephus lorenzi Sassi

Phyllastrephus lorenzi SASSI, 1914, Anz. K. Akad. Wiss. Wien, vol. 51, p. 309 (type locality: Moera, near Beni, eastern Congo); 1915, Jour. Ornith., p. 112 (Moera; Ukaika); 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 269, pl. 7. GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 177 (Simbo). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 385. DELACOUR, 1943, Zoologica, vol. 28, p. 25.

DISTRIBUTION: Eastern Congo forest, where it is known only from Moera and Ukaika, in the vicinity of Beni, and Simbo, west of Irumu. The dull blackish area in the middle of the crown is well marked in both sexes, and the specimen from Ukaika with poorly developed blackish area is undoubtedly an immature male. *P. lorenzi* is somewhat like *P. icterinus* in general form, but more greenish below and more washed with brownish above. The male type has wing 78 mm., tail 68, culmen to base 19.7. A female taken at Simbo by Count Gyldenstolpe is smaller, wing 71, tail 67, "culmen" 15.

Nothing is on record as to the behavior of this bulbul, although it should not depart widely from *P. icterinus* and *hypochloris*. It cannot be a common bird, even in the rather small area where the three known examples have been collected.

Phyllastrephus albigularis (Sharpe)

Xenocichla albigularis SHARPE, 1881, Catalogue of the birds in the British Museum, vol. 6, p. 103, pl. 7 (type locality: Fantee, Gold Coast). REICHENOW, 1887, Jour. Ornith., p. 308 (Riva-Riva). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32.

Phyllastrephus albigularis REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 400. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 268 (Beni; Beni-Mawambi). BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 396 (Uelle R.); 1924, idem, vol. 12, p. 32. SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 333 (Macaco); 1925, idem, vol. 13, p. 13 (Kunungu).

Xenocichla leucolaema O.-GRANT, 1908, Ibis, p. 302 (below Kasongo); 1910, Trans. Zool. Soc. London, vol. 19, p. 383 (Beni).

Phyllastrephus albigularis leucolaema REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 343. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 282 (Assumba).

Phyllastrephus leucolaema camerunensis REICHENOW, 1915, Jour. Ornith., p. 128 (type locality: Duma, probably on Ubangi R.).

Phyllastrephus albigularis albigularis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 386. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 108 (Mauda; Djalasinda; Panga). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 176. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 870.

SPECIMENS: Panga, immature male, September 15. Avakubi, two males, September 27, November 25.

MALE: Iris rather light brownish gray, rim of eyelids greenish gray; bill dusky, with base of mandible blue gray, corners of mouth yellow; feet rather light gray, somewhat yellowish on toes.

DISTRIBUTION: Lowland forests from Sierra Leone eastward to the southern Cameroon, Upper Congo, and Uganda. On the south it reaches the vicinity of Luebo in the Kasai and Kasongo on the Lualaba, but seems not to be known from the Gaboon or the Mayombe. At Lukolela I failed to find it. Yet one specimen was reported from Roça Congulu, Angola, by H. Sick,[1] who believed it might represent an unnamed race. To the northeast the range extends to the Lotti and Laboni forests in the southern Sudan and to the base of Mt. Elgon. Yet it is rare in the gallery forests of the Upper Uelle and not at all common near Avakubi in the Ituri. Many specimens have been taken near Beni, and even more in Uganda.

Several attempts have been made to divide this species into races, often in the belief that size was diagnostic. *P. adametzi* Reichenow, described from the Cameroon highlands, is really synonymous with *P. poliocephalus* (Reichenow). As a rule it is clear that the larger birds with long bills are simply males, with wings 76–90 mm., while the wings of females measure 69–75 mm. The difference between a small female and a normal male is striking, and the color of the crown varies between dark green and a more grayish tone.

The little I have seen of this bulbul in life convinces me that it is a bird of the lower levels in heavy forest, behaving very like *P. icterinus*. The immature male from Panga was sitting in a small tree in the undergrowth, raising its wings excitedly and giving a scolding note. The stomachs of our three specimens all contained insects: beetles, a hemipter, and a caterpillar.

Phyllastrephus flavostriatus graueri Neumann

Phyllastrephus graueri NEUMANN, 1908, Bull. Brit. Ornith. Club, vol. 23, p. 13 (type locality: 90 km. west of L. Edward). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 343. HARTERT, 1922, Novitates Zool., vol. 29, p. 369.

Phyllastrephus albigularis graueri SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 386.

[1] 1934, Ornith. Monatsber., p. 169.

Phyllastrephus flavostriatus babaulti BERLIOZ, 1936, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 8, p. 330 (type locality: Mbwahi, southwest of L. Kivu, about 2000 m.).

Phyllastrephus flavostriatus graueri SCHOUTEDEN, 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 7 (Mt. Wago); 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 285. MOREAU, 1945, Ibis, p. 101.

DISTRIBUTION OF THE SPECIES: Pondoland, Natal, and eastern Transvaal north to southern Nyasaland, Usambara, mountains near Lake Tanganyika, and to those west of Lake Albert. *P. f. Sflvostriatus* (Sharpe), living in evergreen forests from Natal to *a*outhern Rhodesia, is rather dull colored, only slightly streaked with yellow beneath, and has a very long bill, the culmen somewhat decurved. *P. f. vincenti* Grant and Mackworth-Praed[1] of southern Nyasaland and adjacent highlands in Mozambique is a little greener above. *P. f. tenuirostris* (Fischer and Reichenow), of the coastal regions from Mozambique to Usambara, differs by its paler underparts, more distinctly streaked with yellow, and more yellowish generally toward abdomen and under tail-coverts.

Phyllastrephus flavostriatus kungwensis Moreau[2] of the Kungwe-Mahare highland on the eastern side of Lake Tanganyika is still whiter on the chest than *tenuirostris*, purer yellow beneath the wings. *P. f. olivaceogriseus*, of the highlands northwest of Lake Tanganyika and those east of Lake Kivu, is again more ashy gray below, though narrowly streaked with yellow on middle of underparts, and the green back is distinctly washed with gray. Its whole crown is slate gray. *P. f. graueri* occupies the highlands west of Lakes Kivu, Edward, and Albert. It is very much yellower beneath than *olivaceogriseus*, becoming pure light yellow on abdomen and under tail-coverts, and more olive brownish on secondaries and greater wing-coverts.

Phyllastrephus alfredi (Shelley) of northern Nyasaland and Ufipa was regarded as a distinct species, because it has the crown brownish olive like the back, instead of gray. Yet in northern Nyasaland *alfredi* replaces the *flavostriatus* group completely. *Phyllastrephus poliocephalus* (Reichenow) of the Cameroon highlands may also be conspecific.

In the three northern races of *P. flavostriatus* the bill is

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[1] 1940, Bull. Brit. Ornith. Club, vol. 60, p. 62 (Namuli Mts., Portuguese East Africa).

[2] 1941, Bull. Brit. Ornith. Club, vol. 62, p. 29 (Mt. Kungwe, 6800 ft.).

straighter, its culmen less decurved, than in the other forms. Although *kungwensis*, rather similar in color to *graueri*, is separated from that race by *olivaceogriseus*, I feel justified in treating them all as races of one species. Geographic variation in size is not great. *P. f. vincenti* is similar to *P. f. flavostriatus*, which has wings of males 95–100 mm., of females 81–88 mm., and culmen, in both sexes, 22–26.5.

Four males of *P. f. kungwensis*, according to Moreau, showed wing lengths of 97–105 mm., the tail of type specimen 105, culmen to base 25. The wing of a female measured 88 mm. Dimensions of 16 skins of *P. f. olivaceogriseus* are: wing, male, 96–103, female, 80–91 mm.; tail, male, 83–96, female, 79–90; culmen to base, male, 21.5–23, female, 18–20. Those of 10 *P. f. graueri:* wing, male, 93–104, female, 87–92; tail, male, 92–100, female, 83–91; culmen to base, male, 23–25, female, 19–21.

The range of *P. f. graueri* lies entirely within the limits of the eastern Congo, for it is known only from the mountains west of Lakes Albert, Edward, and Kivu, at levels above 5000 feet. It requires dense mountain forest and has been met with in very few places. At Djugu on the Lendu Plateau it was one of the conspicuous elements in the bird parties described under *Phyllastrephus fischeri sucosus*, and very noisy. A loud, hoarse "chow!" was repeated persistently, and perhaps other more petulant notes.

The only other place I saw it was a patch of forest at 7200 feet, near the abandoned post of Lubango, west of Lake Edward. There a party of five or six was foraging by itself at middle level in the trees. One of these birds was found to have eaten insects and a small snail. Fruit seems not to interest them. I noted that adults of both sexes have the iris rather dull gray, with a tinge of olive or even of lavender; bill blackish brown, yellowish just along the tomia, and often grayish at base of mandible, gape lemon yellow; feet bluish gray.

It may seem strange that the species does not inhabit the extensive highland forests of Ruwenzori or the Kivu Volcanoes, although it is present in suitable spots west of the Albertine Rift, south to the mountains near Tshibinda. Beyond that it is replaced by *P. f. olivaceogriseus*, which is known from both sides of the Rift. There seems to be a break in the mountain forests near Nya-Ngezi which marks the separation. A cotype of *babaulti* has been compared with skins of *graueri*, and no appreciable difference was found.

At Djugu I should expect nesting to take place very early in the rains, perhaps toward April. Farther south the seasons would be very different, and birds taken near Lubango in March were in their off season. The nest is unknown but those of the southern races, as described by Swynnerton, Belcher, Moreau, and Roberts, are cups of dead leaves, rootlets, tendrils, or plant fibers, slung in a forking twig or placed in a bunch of twigs. Two eggs form a set and are pinkish brown, pale purplish, or whitish, with some speckling, and a zone of heavier dark red brown or purplish markings around the larger end. Dimensions about 23 by 16 mm.

Phyllastrephus flavostriatus olivaceogriseus Reichenow

Phyllastrephus olivaceogriseus REICHENOW, 1908, Ornith. Monatsber., p. 47 (type locality: Rugege Forest, southeast of L. Kivu); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 343 (northwest of L. Tanganyika). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 266 (Urundi; northwest of L. Tanganyika, 2000 m.). VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 185 (Kigezi).

Phyllastrephus olivaceo-griseus SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 385 (Kivu). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 871. DELACOUR, 1943, Zoologica, vol. 28, p. 25.

Phyllastrephus flavostriatus olivaceogriseus SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 285.

Phyllastrephus flavostriatus olivaceo-griseus MOREAU, 1945, Ibis, p. 101.

DISTRIBUTION: Mountain forests near Baraka and Uvira, west of the Ruzizi Valley, northern Urundi, and Ruanda north to the district near Kigezi. It must be a common bird on the mountains northwest of Baraka at 6200–6800 feet, for Rudolf Grauer collected at least 46 specimens there. He noted the iris as gray in both sexes, bill dark brown, and feet light gray.

Rockefeller and Murphy collected it at 7650 feet on Mt. Kandashomwa, where it was found in thick forest. East of the Albertine Rift there are relatively few suitable forests, but here it extends much farther north, for both Jackson and Van Someren obtained specimens from near Kigezi. Yet it seems not to reach the adjacent volcanoes. There is little likelihood that *P. f. kungwensis* reaches southern Urundi.

KEY TO THE CONGO SPECIES OF *Bleda*

Tail entirely rufous.....*B. syndactyla*
Tail greenish, outer feathers tipped with yellow.....*B. eximia*

Bleda eximia notata (Cassin)

Trichophorus notatus CASSIN, 1856, Proc. Acad. Nat. Sci. Philadelphia, vol. 8, p. 159 (type locality: Moonda R., Gaboon).

Xenocichla notata REICHENOW, 1887, Jour. Ornith., p. 301 (Manyanga). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127 (Bangui).

Bleda notata REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 385 (in part. Manyanga).

Bleda notata pallidior REICHENOW, 1916, Ornith. Monatsber., p. 180 (type locality: Chinchoxo on Loango Coast).

Bleda notata notata BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 21.

Bleda eximia notata SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 197 (Makaia Ntete; Mbuma). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 378. BOUET, 1934, Ois. Rev. Française Ornith., new ser., vol. 4, p. 640 ("northern Belgian Congo"); 1942, idem, new ser., vol. 12, p. 36 (Bangui); 1945, idem, new ser., vol. 14, p. 72. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 151.

DISTRIBUTION OF THE SPECIES: Sierra Leone to Uganda, the forested Manyema, and lower Congo River. *B. e. eximia* (Hartlaub) occupies forests from Sierra Leone to the Gold Coast. *B. e. notata*, with a brighter yellow spot before the eye and wider yellow tips on outer rectices, ranges from Southern Nigeria to the Cameroon, Fernando Po, and Lower Congo, eastward perhaps to the Sanga River and Bangui. *B. e. ugandae* of the Upper Congo forest and Uganda has a duller yellowish loral spot than *notata*, and somewhat wider yellow tips on outer tail-feathers. The wings of *notata* measure 93–101 mm. in males, 86–94 in females. Those of *ugandae* are longer, 101–107 mm. in males, 94–103 in females. Bills of males in this genus are noticeably longer than those of females.

In the Mayombe Forest the race *notata* seems to be fairly common, with the same retiring habits and much the same voice as *ugandae*. It has also been taken at Manyanga and may be expected in other forested areas of the Lower Congo. In the Cameroon both Sjöstedt and Bates found it attracted by moving columns of driver ants.

Bleda eximia ugandae Van Someren

Bleda exima ugandae VAN SOMEREN, 1915, Bull. Brit. Ornith. Club, vol. 35, p. 116 (type locality: Mabira Forest, Uganda).

Xenocichla notata REICHENOW, 1887, Jour. Ornith., p. 308 (Riva-Riva) DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32.

Bleda notata REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 385 (in part. Riva-Riva). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 263 (Moera; Beni; Mawambi; Ukaika). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 281. BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 394 (Uelle R. district).

Bleda eximia ugandae BEQUAERT, 1922, Bull. Amer. Mus. Nat. Hist., vol. 45, p. 313 (Ituri forest). SCHOUTEDEN, 1924, Rev. Zool. Africaine, vol. 12, p. 417 (Tondu; Bikoro); 1925, idem, vol. 13, p. 13 (Kunungu); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 107 (Poko; Kotili; Panga; Nava R.; Mauda); 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 86 (Lisala); 1939, idem, vol. 16, p. 15; 1940, Rev. Zool. Bot. Africaines, vol. 34, p. 60 (Kawa Forest). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 378. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, pp. 151, 416 (Avakubi). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 857.

Bleda eximia notata SCHOUTEDEN, 1936, Ann. Mus. Congo., zool., ser. 4, vol. 1, fasc. 2, p. 107 (Buta).

SPECIMENS: Avakubi, female, August 20; two immature males, April 11, August 26; immature female, May 27. Penge, male, April 20. Ngayu, male, December 13. Gamangui, three males, February 4, 5; immature male, February 4. Niangara, male, April 29; two females, November 16, 18.

ADULTS OF BOTH SEXES: Iris chrome yellow, maxilla dark gray, mandible blue-gray to light blue; feet light bluish gray.

IMMATURE MALE: Iris dull gray, rim of eyelids and corners of mouth buffy; bill brownish black; metatarsi light gray, toes pale buff.

DISTRIBUTION: Lowland forests of Uganda and the eastern Congo, north to the gallery forests of the Uelle, south to the forested Manyema, but apparently not to the Kasai. Rudolf Grauer obtained specimens at Kindu. Its western limits are not accurately known, but a series of seven specimens from Lukolela on the middle Congo River belongs with *ugandae*, and I cannot but doubt the occurrence of *notata* at Bangui.

In the Ituri forest and near Niangara the green-tailed "bristlebill" is common, fond of the densest undergrowth in untouched areas, and also more frequent in second growth than *B. syndactyla*. At Lukolela I found its behavior and voice the same as in the northeast. One expects it in small parties, maybe three to six, and it might not be noticed if it did not so often give a loud "chew-chew-chew." The syllables may next be doubled to "pî-tu, pî-tu. . ." and then varied sometimes with a series of softer notes like "cheer!" suggesting the usual calls of *B. syndactyla*.

At other times it is heard to utter more erratic churring or chirruping notes that resemble the singing of *Andropadus virens*.

At times a few of these "bristle-bills" will join in a mixed bird party; at other times they are attracted, with *Alethe* and *Neocossyphus*, by a column of driver ants. Darting through the bushes, they flit their yellow-spotted tails, and this aids greatly in identification. Sjöstedt reported that the ants themselves formed an important part of the diet. In my own examinations of 10 stomachs I noted no ants, but always pieces of other insects, including Orthoptera, beetles, and one small green cicada. Fruit was never present.

In southern Cameroon Bates[1] reported that *Bleda eximia* and *syndactyla* "breed at all seasons alike." In the Congo my dissections indicate that individual adults of *B. e. ugandae* do not remain long in breeding condition and are most likely to nest very early in the rains. In the northern part of the forest belt they were non-breeding from November to February, while a male with enlarged gonads was taken in April, and a young bird just out of the nest was taken in late May. Near the southern margin of the forest breeding adults were collected in late August and September.

The nest has never been described. A fledgling with tail only half grown had already molted a large part of its juvenal dress, but this had evidently been mainly dark rufous brown above, with greener remiges and rectrices, the downy breast feathers whitish, washed at their tips with brown. It was noted that the iris was dark brown, rim of eyelids greenish yellow; bill dusky brown, yellowish along tomia; feet mostly pale yellowish.

Bleda syndactyla ogowensis Neumann

Bleda syndactyla ogowensis NEUMANN, 1914, Ornith. Monatsber., p. 9 (type locality: Umpokosa, Lake Ogemwe, Gaboon). BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 21 ("northern Belgian Congo"); 1936, The birds of tropical West Africa, vol. 4, p. 149 (Lukolela; "Stanley Falls"). BATES, 1930, Handbook of the birds of West Africa, p. 417. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 377. BOUET, 1942, Ois. Rev. Française Ornith., new ser., vol. 12, p. 36 (Bangui); 1945, idem, new ser., vol. 14, p. 72.

Xenocichla syndactyla OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127 (Bangui). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Kisantu).

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[1] 1908, Ibis, p. 567.

Bleda syndactyla REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 386 (in part. Ubangi).

DISTRIBUTION OF THE SPECIES: Casamance to Southern Nigeria, Cameroon south to the Lower Congo and Quicolungo in northwestern Angola; eastward to Uganda and the neighboring border of the Sudan.

Bleda syndactyla syndactyla (Swainson) occupies the forests of Upper Guinea, east to Nigeria. *B. s. ogowensis* is slightly greener above, and extends from the base of Mt. Cameroon, the Gaboon, and northwest Angola eastward to the Upper Congo forest. *B. s. woosnami* replaces it in the eastern Congo forest and Uganda, and differs mainly in its brighter yellow underparts. It seems almost certain that the name *ogowensis* is antedated by *Criniger multicolor* Bocage,[1] based apparently on a young bird which had retained parts of its rufous juvenal plumage.

Although there are no records from the Belgian Mayombe, we may be sure it occurs there, and the race *ogowensis* is the one I found to be common in the forest at Lukolela. I cannot say to which race Dybowski's specimen from Bangui belonged, unless its very long bill (28 mm. to base) indicates it was the western one, since bills of *woosnami* from the Ituri scarcely exceed 26 mm. Bannerman mentions *ogowensis* as reaching Stanley Falls, but I have seen no example from that region.

At Lukolela this large bulbul was frequently heard calling in the undergrowth and recognized by its rufous tail. Its voice is like that of *woosnami*, discussed below.

It was also observed to join in mixed bird parties, which might include *B. eximia* as well. Breeding took place very early in the rains, for on September 30 my hunter Kambulu found a nest in virgin forest, at 5 1/2 feet from the ground. Placed on a bunch of large dead leaves hanging in a small tree entwined by a creeper, it was a rather shallow cup of old leaves, tendrils, and twigs, with a thin lining of black fungus fibers. The dead leaves were held together by this same fungus growing among them, as it so often does. Kambulu collected the birds, and their two eggs disappeared before I could visit the nest. Eggs secured by Bates in the Cameroon were so heavily blotched with rich Vandyke brown and pale brown that the pale buff ground color was almost ob-

[1] 1880, Jor. Sci. Nat. Lisboa, vol. 8, no. 29, p. 55 (Loango Coast).

scured. One measured 26.5 by 18 mm. Kambulu brought me another egg in early October which agreed with Bates's, and my measurements are 24.5 by 17.7 mm.

The five stomachs I examined contained no fruit but always remains of insects, as well as a centipede about 50 mm. long, and bits of a small round millipede. Among the insects there were twice fragments of large ants, apparently not driver ants, and one hairless black caterpillar.

Bleda syndactyla woosnami Ogilvie-Grant

Bleda woosnami O.-GRANT, 1907, Bull. Brit. Ornith. Club., vol. 19, p. 87 (type locality: Mpanga Forest, western Uganda); 1910, Trans. Zool. Soc. London, vol. 19, p. 384, pl. 17, fig. 2. BANNERMAN, 1924, Rev. Zool. Africaine, vol. 12, p. 21 (northern Belgian Congo).

Xenocichla syndactyla REICHENOW, 1887, Jour. Ornith., p. 307 (Stanley Falls).

Bleda syndactyla REICHENOW, 1904, Die Vögel Afrikas, vol. 3, p. 386 (in part. Stanley Falls). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 263 (east of Rutshuru Plain, 1600 m.; Beni; Moera; Mawambi; Ukaika; Mawambi–Irumu).

Bleda syndactyla woosnami REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 342 (Avakubi). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 281; 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 107 (Panga; Poko; Medje; Kotili; Mauda; Nava R.; Buta); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 94. BEQUAERT, 1922, Bull. Amer. Mus. Nat. Hist., vol. 45, p. 313. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 377. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 416. JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 857.

SPECIMENS: Avakubi, two males, March 2, November 7; female, October 22. Ngayu, two males, December 10, 13. Bafwabaka, male, July 26. Gamangui, two males, February 4, 7; five females, February 5, 8, 9, 10, 11. Medje, male, April 6; two females, April 6, May 12; two immature females, January 18, July 12. Niangara, male, November 14; immature female, November 10. Faradje, male, November 29; female, November 30; immature female, October 6.

ADULTS: Iris dark brown to dark red in males, dark brown in females, skin around eye light blue; maxilla blackish, mandible light blue-gray; feet pinkish gray.

IMMATURE: Iris dark brown, orbits yellowish; bill blackish at base, yellow at tip, the yellow extending back along both tomia; feet dull yellowish.

DISTRIBUTION: Eastern Congo forest and the disconnected forests of Uganda, east to North Kavirondo. Northward it reaches the gallery forests of the Uelle and the Lotti Forest in the southeastern Sudan. While it does not invade the high mountain forests, it has been found near 5000 feet in the Mpanga Forest and on the eastern side of the Rutshuru Valley. Grauer obtained a specimen at Kindu on the Lualaba, but the species is still unknown from the southern extensions of the forest belt. Since Schouteden has reported *woosnami* from the Lower Uelle, I believe the eastern limit of *ogowensis* may be found in the Ubangi District.

Woosnam's bristle-bill is a characteristic bird of heavy forest, living on and near the ground, and only occasionally is it seen in old deserted farms, or "masokola," as they are called in Kingwana, where dense second growth has sprung up. A flash of the red-brown tail is all one usually sees, but it is apt to be followed by a low chattering note or a sharp "chip-ip." This may change to a more resonant "chown," repeated eight or 10 times. Still more pleasing is a long series of sibilant notes I used to write as "cheer, cheer, cheer. . . ," falling gradually in pitch, heard when the bird is more at ease.

Now and then it joins in a mixed bird party, but more often it goes in pairs or family groups of its own. Driver ants attract them strongly, though I believe their intention is to seize the prey rather than to eat the ants themselves. A number of our specimens from Gamangui were snared on the ground, with fragments of termite nests as bait. The contents of the stomachs of seven other examples indicate a diet exclusively of insects. In addition to small beetles, one grasshopper, and a caterpillar, we found large winged termites twice, and once a driver ant (*Dorylus*) of the worker caste.

A surprisingly large proportion of our specimens were in non-breeding condition, so individual birds must devote but a small part of their year to nesting. Only a single male, in July, in the northern Ituri was found with any considerable enlargement of the gonads, while those taken in October, November, and February were definitely non-breeding. I should expect nesting to commence there toward April and to continue for several months. A nest found by Sir Charles Belcher in Uganda in April was very similar to that of *B. s. ogowensis*, already described.

At Beni a fledgling was taken at the end of October, with a good many rufous feathers still retained on forehead, scapulars, sides of chest, flanks, and wings. The postjuvenal molt begins before departure from the nest.

KEY TO THE SPECIES OF *Nicator*

1. Wing usually less than 85 mm. long; supraloral stripe yellow, cheeks gray, a large patch of yellow on lower throat..... *N. vireo*
   Wing usually more than 85 mm. long; no large patch of yellow on throat..2
2. A small supraloral mark of white, cheeks yellowish green, throat light gray ..... *N. chloris*
   A small supraloral mark of yellow, cheeks gray brown, throat gray washed with brown..... *N. gularis*

Nicator chloris (Valenciennes)

Lanius chloris VALENCIENNES, 1826, Dictionnaire des sciences naturelles, vol. 40, p. 226 (type locality: Galam, Senegal).

Nicator chloris SHARPE AND BOUVIER, 1877, Bull. Soc. Zool. France, vol. 2, p. 480 (Condé). BOCAGE, 1881, Ornithologie d'Angola, pt. 2, p. 550. REICHENOW, 1887, Jour. Ornith., pp. 300, 307 (Manyanga; Riva-Riva); 1903, Die Vögel Afrikas, vol. 2, p. 554 (Kwango R.; Kitimba; Kinyawanga). SHELLEY, 1890, Ibis, p. 161 (Yambuya). SHARPE, 1890, *in* Jameson, The story of the rear column, p. 411. OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127. EMIN, 1894, Jour. Ornith., pp. 164, 170 (Bumanja; old Irumu). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 30 (Banalia; Mayombe; Lake Leopold II). ALEXANDER, 1907, From the Niger to the Nile, vol. 2, p. 314 (Gudima). O.-GRANT, 1908, Ibis, p. 292 (Ponthierville; Beni); 1910, Trans. Zool. Soc. London, vol. 19, p. 339 (50 miles north of Beni; Mpanga Forest). NEAVE, 1910, Ibis, p. 228 (Lualaba R., 2500 ft.). SALVADORI, 1911, Ann. Mus. Civ. Genova, ser. 3, vol. 5, p. 450 (Zone of Gurba-Dungu). SCLATER, 1912, *in* Shelley, The birds of Africa, vol. 5, pt. 2, p. 436, pl. 55, fig. 1 (Uelle R.; Ubangi). CHAPIN, 1921, Amer. Mus. Novitates, no. 17, pp. 9–11, fig. 5. SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, pp. 333, 396 (Basongo; Luebo; Kamaiembi; Tshikapa; Ngombe in Kasai; Kwamouth); 1924, idem, vol. 12, pp. 269, 418 (Leopoldville; Eala; Tondu; Bikoro); 1925, idem, vol. 13, p. 14 (Bolobo region); 1926, idem, vol. 13, p. 197 (Temvo). SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 30 (Rutshuru Plain; Moera; Ukaika).

Laniarius chloris SHARPE, 1884, Jour. Linnean Soc. London, zool., vol. 17, p. 423 (Ndoruma).

Nicator chloris laemocyclus REICHENOW, 1909, Jour. Ornith., p. 108 (type locality: forest northwest of Beni); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 311 (Avakubi; Uvamba). LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 23 (Rutshuru; Beni). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 262 (Lesse; Bolovet; Zambo; Kalumendo; west Ruwenzori; Alimasi). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 120 (Kartushi; Kitsumuro; Kampi-na-Mambuti).

Nicator chloris chloris SCLATER AND M.-PRAED, 1918, Ibis, p. 640 (Yambio).

BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 352; 1939, The birds of tropical West Africa, vol. 5, p. 444. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 638. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 131 (Kotili; Panga; Rungu; Bondo Mabe; Arebi; Dika; Mauda; Buta); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 94 (Rutshuru–Djomba, 1900 m.; east of Rutshuru Plain); 1940, Rev. Zool. Bot. Africaines, vol. 34, p. 60 (Kawa Forest). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 570 (Saidi; Ekibondo). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 314. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 3, p. 1241.

SPECIMENS: Near Risimu, male, September 8. Batama, male, September 17. Avakubi, two males, September 4, October 17; two immature females, January 20, November 27; juvenile female, October 17. Ngayu, two males, December 13, 25; female, December 11. Bafwabaka, male, January 7. Medje, male, January 21; immature male, September 15; juvenile male, October 9. Niangara, female, May 8. Between Faradje and Aba, two males, November 27.

ADULTS OF BOTH SEXES: Iris dark brown; bill black, gape yellow; feet lead gray to light blue.

NESTLING, PARTIALLY FEATHERED: Iris gray with black inner rim, rim of eyelids greenish yellow; bill black, corners of mouth light yellow, naked skin of crown and sides of head greenish gray, that of throat gray; feet light blue-gray.

DISTRIBUTION: From Senegal eastward through the forests of Upper and Lower Guinea to Uganda and the base of Mt. Elgon. From the southern edge of the Bahr-el-Ghazal Province it ranges south to the lower Congo River, the middle Kwango River, the southern Kasai, and the upper Lualaba near latitude 10° S.

Nicator gularis Hartlaub and Finsch, of the lowlands of eastern Africa, from the Juba River to Zululand, inland to the lower parts of Northern Rhodesia, is often regarded as a race of *N. chloris*. But its fore crown is gray instead of green, the supraloral marking yellow instead of white, and the cheeks are dull gray brown instead of yellowish green. Nowhere do the ranges of *chloris* and *gularis* meet. Their habits and voices are alike, they represent each other geographically, but I hesitate to treat them as conspecific.

Despite its wide distribution, *Nicator chloris* shows no stable geographic variation.[1] It is one of the common birds of forest

[1] *Nicator c. katangensis* Verheyen, 1951, Bull. Inst. Roy. Sci. Nat. Belgique, vol. 27, no. 5, p. 1 (Munoï R., Upemba National Park) is no larger than two males I collected at Lukolela.

country, mostly in dense thickets within the shade of higher trees, perching usually within 20 or 30 feet of the ground. One almost never sees more than a pair together; they are very sedentary and show no inclination to move about with bird parties. Out in the savanna districts this bird is restricted to the thickest gallery forests. Near Faradje, in the Uelle, we saw it only in a strip of heavy woodland, on the road to Aba. In the Katanga Neave found only a single pair, low down in a river bottom. Even where forests are available in the eastern Congo, it does not ascend above 5000 feet.

It cannot be overlooked, for it proclaims its whereabouts with a loud "chuck!" or a disconnected jarring discourse, half musical but with no rhythm. Very early in the morning, however, a much louder song is frequently given which I found decidedly pleasant

FIG. 9. Nestling of *Nicator chloris*, to show the bare face.

and melodious by comparison, yet still a bit disjointed. I never noticed any mimicry of other birds, but J. M. Vrydagh tells me he has heard it imitate the call of *Tockus fasciatus* and has been assured it can do the same with other bird notes. In East Africa and Nyasaland, *N. gularis* is better known for this ability.

The genus has usually been regarded as allied to the bush-shrikes, yet I long ago became convinced that this was an error. It shows more resemblances to the family Pycnonotidae, though not closely allied to *Bleda* or *Setornis*, which also have hooked, compressed bills. It differs notably in having a patch of bristly feathers between the eye and the gape which have taken over the function of rictal bristles, the usual set of bristles being poorly developed. The nestling looks quite unlike a young shrike, and long after its body is well clothed with feathers its head is

mostly bare, save for a strip of feathers on each side of the crown. These join on the nape but do not extend to the back of the neck. Otherwise the coloration of the young is not unlike that of the adult, not rufous as in *Bleda*, not barred as in many young shrikes.

In the Ituri and Uelle the season of reproduction coincided with the rains and began as early as May, though still well marked from September to November. At Lukolela, near the southern edge of the forest, males were coming into condition to breed during September.

A nest secured for Bates[1] in the Cameroon was "a mere pad of dry tendrils and weed-stalks mixed together, so small that the bird would completely cover and hide it. There was a little depression on top, where the one egg had been laid." It was ready to hatch and had the ground color pale yellowish clay color, rather densely spotted and dotted with reddish brown and dark gray. This was especially so around the large end, where the under-markings formed a zone. In Uganda Van Someren obtained a nest with two eggs in June.

Eight stomach examinations showed no fruit, only remains of insects, which were almost always rather soft-bodied Orthoptera, noted as small green grasshoppers or katydids.

Nicator vireo Cabanis

Nicator vireo CABANIS, 1876, Jour. Ornith., p. 333, pl. 2 (type locality: Chinchoxo, Loango Coast). BOCAGE, 1881, Ornithologie d'Angola, pt. 2, p. 550 (Chissambo). GADOW, 1883, Catalogue of the birds in the British Museum, vol. 8, p. 166. REICHENOW, 1887, Jour. Ornith., pp. 300, 305 (Manyanga; Leopoldville); 1894, idem, p. 170 (old Irumu); 1903, Die Vögel Afrikas, vol. 2, p. 555 (Kwango R.); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 311. SHARPE, 1890, *in* Jameson, The story of the rear column, p. 401. SHELLEY, 1890, Ibis, p. 161 (Yambuya). LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 12 (Mukimbungu). SCLATER, 1912, *in* Shelley, The birds of Africa, vol. 5, pt. 2, p. 441. BANNERMAN, 1920, Rev. Zool. Africaine, vol. 7, p. 289 (Poko); 1922, idem, vol. 9, p. 353; 1939, The birds of tropical West Africa, vol. 5, p. 446, fig. 95. SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 30 (Beni). SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 197 (Makaia Ntete; Lundu); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 131 (Arebi, Poko, Buta). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 639. DELACOUR, 1943, Zoologica, vol. 28, p. 25.

Nicator sp. EMIN, 1894, Jour. Ornith., p. 170 (old Irumu).

Nicatir vireo VAN SOMEREN, 1946, Bull. Brit. Ornith. Club, vol. 67, p. 36 (Bwamba district).

[1] 1909, Ibis, p. 35.

SPECIMENS: Risimu, male, September 7. Avakubi, three males, July 5, August 28, October 21; two immature males, July 16, November 23. Bafwabaka, male, July 26. Medje, male, March 29.

ADULT MALE: Iris grayish brown; bill gray, dark above, lighter below; feet bluish gray.

DISTRIBUTION: Lower Guinea forest, from the coast of the Cameroon, Gaboon, and Portuguese Congo east to Irumu and the Semliki Valley, north to the Bomokandi River, south to Luluabourg in the Kasai and Roça Congulu in northern Angola. There is as yet no proof of its occurrence in Upper Guinea.

Four specimens collected by Ansorge at Canhoca, Angola, are somewhat lighter on the underparts than those of the Cameroon and Ituri. The chin, lower breast, and abdomen, in particular, are more whitish.

This small *Nicator* with yellow throat patch is a common bird near Angumu and in the Ituri, as was evident from the frequency of its call, extending northward at least to Poko and Rungu, and eastward into the Semliki Valley, where I heard it close to the base of Ruwenzori. Father Callewaert sent us one specimen from Luluabourg, and I have heard it calling at Mombo in the Mayombe Forest, though never at Lukolela on the middle Congo.

Where some large tree supports a trailing canopy of leafy vines, impossible to see through and usually along the edge of a clearing or a road, one may often hear a series of short, rapidly repeated, whistled notes, resonant and mostly in one key, though changing to higher or lower notes at the end of each phrase. It is a most pleasant call, cheerful, and more prolonged than the notes of *Chlorophoneus* or *Laniarius*—one of the sounds to be enjoyed during long marches through the forest country. You peer up into the tangle of foliage, and the author keeps calling until you annoy him by your persistence, when suddenly a small bird is seen to dart out and disappear among the neighboring trees. Once in a long time it is possible to secure the bird, which then proves to be *Nicator vireo*. I have written this call as "whit-whit-whit-whit-whee!" and "whit-whit-whit-whit-whee-ha!" Either the last note is higher than the others, or there are two notes of alternating pitch.[1]

[1] Note the similarity of Bates's description, 1909, Ibis, p. 35.

This is nearly all I ever learned of the bird, and no female specimen was secured, doubtless because that sex does not whistle. It is a bird of thickets and second growth, keeping well above ground and seldom if ever heard in the depths of the forest. Even there it would seek some open glade. The notes are heard throughout the year, but from dissections I believe that the breeding season comes during the rainy period, as with *N. chloris*. The nest and eggs are unknown.

Notes on six stomachs show that Orthoptera form a large part of its diet. Insects of the grasshopper type were found in five stomachs, and a small mantis in the sixth; other unidentified insects were present in two instances.

FAMILY **CAMPEPHAGIDAE**. CUCKOO-SHRIKES

KEY TO THE AFRICAN GENERA

1. Coloration oriole-like, head black or blackish, body green and yellow, or more orange chestnut on breast; male with a large gape wattle, which is smaller but still noticeable in female..... *Lobotos* (p. 202)
   Coloration not oriole-like, but largely black, blue, gray, or green and yellow without black head; gape wattle very small or wanting.....2
2. Plumage largely black, usually glossy, and often with red or yellow on wing-coverts..... *Campephaga* (p. 193)
   Plumage not mainly black.....3
3. Plumage blue over almost the entire body..... *Cyanograucalus* (p. 192)
   Plumage not blue.....4
4. Coloration mainly gray, or gray above and white below, often gray or blackish about face and throat..... *Coracina* (p. 187)
   Coloration above grayish brown, olive brown, greenish or yellowish; breast either whitish with dusky barring or yellow with or without barring.. ..... *Campephaga* (p. 193)

KEY TO THE AFRICAN SPECIES OF *Coracina*

1. Underparts gray, little lighter than the back..... *C. caesia*
   Underparts white, with gray or blackish only on throat and fore neck....2
2. Upperparts slate gray, often with a slight gloss; wing less than 120 mm. long..... *C. graueri*
   Upperparts light bluish gray; wing more than 130 mm. long... *C. pectoralis*

Coracina pectoralis (Jardine and Selby)

Graucalus pectoralis JARDINE AND SELBY, 1828, Illustrations of ornithology, vol. 2, pl. 57 (type locality: Sierra Leone). SHARPE, 1884, Jour. Linnean Soc. London, zool., vol. 17, p. 424 (Niam-Niam). DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, p. 148 (L. Tanganyika); 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Mpala). REICHENOW, 1887, Jour. Ornith., p.

306 ("Stanley Falls"). SALVADORI, 1914, Ann. Mus. Zool. Napoli, new ser., vol. 4, no. 10, p. 20 (L. Bangweolo). BANNERMAN, 1923, Ibis, p. 711. SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 284 (Elisabethville).

Coracina pectoralis REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 515 (Sassa). NEAVE, 1910, Ibis, p. 131 (upper Lufira R.). SCLATER, 1912, *in* Shelley, The birds of Africa, vol. 5, p. 218; 1930, Systema avium Aethiopicarum, pt. 2, p. 592. MOURITZ, 1914, Ibis, p. 31 (Inkosakapenda). SCLATER AND M.-PRAED, 1918, Ibis, p. 700 (Mt. Baginzi). BEQUAERT, 1922, Bull. Amer. Mus. Nat. Hist., vol. 45, p. 309. DE RIEMAECKER, 1927, Rev. Zool. Africaine, vol. 14, p. 279 (Lubumbashi R.). BOWEN, 1931, Catalogue of Sudan birds, vol. 2, p. 53. LYNES AND SCLATER, 1934, Ibis, p. 47 (Tenke in Upper Katanga). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 126 (Buta; Mauda; Mahagi Port); 1943, Rev. Zool. Bot. Africaines, vol. 37, p. 270 (Gabiro). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 311, fig. 62.

SPECIMENS: Faradje, female, October 6. Aba, immature male, July 18. Garamba, two males, June 19, July 18; immature male, May 7; female, June 7; immature female, June 19.

ADULTS OF BOTH SEXES: Iris dark brown, bill black, feet very dark gray.

DISTRIBUTION: From Senegal across the grasslands to Abyssinia and south through East Africa to northern Transvaal, Ovamboland, and Angola. It avoids the equatorial forest belt, though approaching its edge more closely on the north than on the east or south. The supposed record by Verreaux from the Gaboon and that of Bohndorff from Stanley Falls must be erroneous.

Within our limits this white-breasted cuckoo-shrike has been found only in the northeastern, eastern, and southeastern corners, from Lake Albert to the Upper Uelle District, in Ruanda, and from the Katanga to Lake Tanganyika. In the vicinity of Faradje and Aba it seemed decidedly rare, but at Garamba on the border of the Sudan it became more common, living in companies of three or four in the bushy savanna and more often in the open groves of tall trees. Like most other members of the family, they seemed rather silent and hopped about the boughs in search of food. Four stomachs examined by us contained five hairless caterpillars, eaten by three birds, as well as two ants, a grasshopper, a mantis, and other finely divided insect remains. The voice is a querulous cheeping whistle, not loud, often given in flight.

None of our adult specimens was in breeding condition, and the fact that immature birds had already molted their spotted juvenal plumage suggested breeding in the dry season. Wil-

loughby Lowe noted in the Gold Coast that a female on January 25 was about to lay.

Rockefeller and Murphy found this cuckoo-shrike common in Marungu, and collected specimens at Kasoko, 4100 feet, and Lubenga, 5650 feet, in March. By that time the season of reproduction was plainly over, and nesting seems to begin toward September in Angola and the southeast Congo. Lynes obtained a young bird already out of the nest in December in the Katanga, where the species is numerous.

Nests have been described by Belcher and by Vincent as shallow saucers built of tendrils or weed stems, decorated with scaly lichen and often lined with soft beard lichen. They are placed in forks of trees or saddled on a branch, 25 to 60 feet up, and difficult to see. Two eggs are laid, occasionally only one, light green with markings of light brown, 27.5 by 19.5 mm.

Coracina graueri Neumann

Coracina graueri NEUMANN, 1908, Bull. Brit. Ornith. Club, vol. 23, p. 11 (type locality: forest 90 km. west of L. Edward). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 308. HARTERT, 1922, Novitates Zool., vol. 29, p. 373. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 592. SCHOUTEDEN, 1940, Bull. Cercle Zool. Congolais, vol. 16, p. 71 (region of Mongbwalu). VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 76 (Nyabukoko, Bilati, and Kianiamakue, all near Lutunguru).

DISTRIBUTION: Highland forests along the western side of the Albertine Rift from Djugu and Mongbwalu west of Lake Albert south to the Elila River west of Uvira. Fewer than a dozen specimens have thus far been collected, and the species seems not to occur below 5000 feet.

Grauer's two specimens were correctly sexed as females, and the type locality was noted as 1600 meters above sea level. In 1926 I collected an adult female at Djugu, 5500 feet, in the undergrowth of dense forest, where it seemed to be a member of a bird party. The male plumage remained unknown until August, 1929, when Rockefeller and Murphy secured a pair at Kisale on the Elila River. The male differs from the female in having lores and ear-coverts dark slate gray, the chin and throat blackish slate, shading to black with a weak green gloss on fore neck. The coloration there changes abruptly to the white of the breast. The under tail-coverts are white, in females they are pale buff. Measure-

ments of this male: wing, 116 mm., tail 107, culmen to base 21, metatarsus, 23. Four females have wings 108–115 mm., tails 103–108, culmen to base 19–20. The iris is dark brown in both sexes, bill blackish, feet and claws blackish gray.

Grauer's cuckoo-shrike thus resembles *C. pectoralis* in color and pattern but is smaller and darker throughout, with a slight green gloss on the gray upperparts, and much darker on the throat. The bill is narrower than in *pectoralis* or *caesia*. Little is known of its habits save that it feeds quietly amid the lower boughs or even in high forest trees and has twice been noted as taking caterpillars.

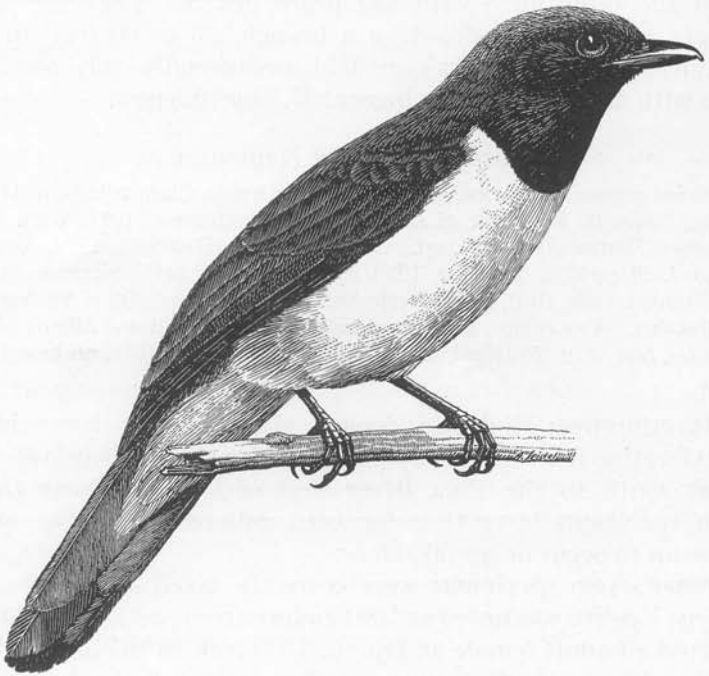

FIG. 10. *Coracina graueri*, adult male.

Coracina caesia pura (Sharpe)

Graucalus purus SHARPE, 1891, Ibis, p. 121 (type locality: Mt. Elgon). JACKSON, 1906, Ibis, p. 538 (Ruwenzori).

Graucalus caesius O.-GRANT, 1910, Trans. Zool. Soc., London, vol. 19, p. 389 (Mubuku Valley, east Ruwenzori, 6000–9000 ft.).

Coracina pura REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika

Exped., vol. 3, p. 308 (northwest of L. Tanganyika). SCLATER, 1912, *in* Shelley, The birds of Africa, vol. 5, p. 222. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 260 (near Baraka).

Coracina caesia SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 260; 1924, idem, vol. 38, p. 79.

Graucalus caesius purus GLYDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 192 (Lulenga).

Coracina caesia pura SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 592. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 126 (Djalasinda); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 95 (Kamatembe); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 337 (Kirinda; forest west of Astrida). PETERS AND LOVERIDGE, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 244.

Coracina caesius purus SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 309.

Coracina caesia pura BERLIOZ, 1936, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 8, p. 330 (Mbwahi).

Graucalus caesia pura FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 60.

Coracina caesia preussi HENDRICKX, 1944, Ostrich, vol. 15, p. 203 (southwest of L. Kivu).

DISTRIBUTION OF THE SPECIES: From eastern Cape Province and Natal north to Gazaland, the highland forests of eastern Africa and southern Abyssinia, also in those of the Cameroon and Fernando Po. *C. c. caesia* Lichtenstein of South Africa is large, with wings 126–133 mm., and it extends north to Southern Rhodesia. *C. c. pura*, with wings 114–127 mm. and throat more dusky in males, occupies mountain forests from southern Nyasaland and Uluguru to Abyssinia, the Imatong Mountains in the southern Sudan, and the highland west of Lake Albert. *C. c. preussi* (Reichenow), with wings 111–121 mm. and throat of males still a little more blackish, is found in the mountain forests of Fernando Po, Mt. Cameroon, and the Banso Mountains. *C. c. okuensis* Bannerman was named as an exceptionally blackish race, restricted to one locality at 7000 feet in the Cameroon highland, but appears not to be valid.

The East African race of the gray cuckoo-shrike is generally distributed in the highlands of the eastern Congo, from 5000 to 9000 feet above sea level, wherever there is suitable forest, from Djalasinda near Mahagi south to the mountains west of Baraka and Mt. Kabobo. It seems much less common on west Ruwenzori and the Kivu Volcanoes than on the long ridge to the west. Rudolf Grauer also collected three specimens in the Rugege Forest.

Not at all sociable, this plain gray bird is found singly or in pairs in shady forest, usually silent, though it can give a soft whistle and a long-drawn squeak. Its food consists of caterpillars, soft-bodied insects like grasshoppers, and even some beetles.

Nothing definite is known as to the breeding season. A female I collected on Mt. Nyemilima, northwest of Lake Edward, March 8, had the oviduct enlarged and breast bared for brooding. Near Nairobi, Kenya Colony, Jackson found a nest on December 27. The female was incubating a single egg on what was little more than a pad of gray beard lichen, placed in a fork of a dead juniper tree surrounded by tall bush in a forest glade. The eggs of the South African race are described by Austin Roberts as rather clear green with numerous markings of light olive.

Cyanograucalus azureus (Cassin)

Graucalus azureus CASSIN, 1851, Proc. Acad. Nat. Sci. Philadelphia, vol. 5, p. 348 (type locality: western Africa, presumably Sierra Leone). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 126. O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 390 (Irumu). SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 333 (Luebo). CHAPIN, 1927, Bull. Amer. Mus. Nat. Hist., vol. 53, p. 478.

Coracina azurea REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 516 ("Ubangi"; Ungomongo); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 308. SCLATER, 1912, *in* SHELLEY, The birds of Africa, vol. 5, p. 225, pl. 52, fig. 2; 1930, Systema avium Aethiopicarum, pt. 2, p. 593. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 261 (Beni–Mawambi; Mawambi; Ukaika; Mawambi–Irumu). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 260 (Zambo); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 126 (Buta; Poko; Nava R.; Panga); 1939, Bull. Cercle Zool. Congolais, vol. 16, p. 51. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 564 (Saidi in Ituri). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 64 (upper Kemo R.).

Cyanograucalus azureus GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 193 (Lesse). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 317, pl. 7.

SPECIMENS: Avakubi, three males, April 16, May 12, 16; immature male, March 6; two females, April 16, May 27; immature female, April 16. Ngayu, two males, April 29, July 30.

ADULT MALE: Iris dark crimson, bill black, feet black with dull yellowish soles. Young birds have the iris dark brownish red, but in adult females the eye seems almost as red as in males.

DISTRIBUTION: From Sierra Leone eastward to forested Camer-

oon and the northeast Congo forest, southward to the Gaboon and Belgian Mayombe, and to Luebo in the Kasai District. It is restricted to heavy forests and is not yet known from north of the Bomokandi River. To the east it reaches the Semliki Forest but has not been taken in Uganda. Neither does it ascend to the mountain forests of the eastern Congo.

Haunting the upper boughs of forest trees, the blue cuckoo-shrike travels singly or in small family parties. Though quiet most of the time, it occasionally utters a series of loud resounding chirps or short whistles, faintly suggestive of the notes of *Dicrurus atripennis*.

Nowhere have I found the birds numerous. In the Ituri forest weeks would often pass without my seeing a single individual, and yet they are resident and well distributed. Adult males are much more brilliant blue than females, with more black about the face. Their richness of color is variable, individually rather than geographically.

In addition to the Ituri specimens, I have taken others near Beni and at Lukolela on the Congo. Of the Ituri birds only two showed any enlargement of the gonads, both in May, but an immature example in mid-April still retained the juvenal inner secondaries. This suggests a protracted or irregular season of reproduction, as might well be expected in the equatorial forest. Nothing is known of their nest.

Of 10 stomachs examined, eight contained caterpillars (hairy ones in only a single case); four, the remains of Orthoptera; one, a chrysalis; and one, a small snail with hard shell.

KEY TO THE SPECIES OF *Campephaga*

1. Plumage mainly glossy black, with or without yellow or red on wing-coverts 2
   Plumage not black, but brownish, greenish, or yellowish, usually lighter below 3
2. Throat and fore neck glossed with purplish or blue, the luster on back somewhat greener . . . . . *C. quiscalina* ♂
   Gloss more uniform over whole body and head, generally greenish rather than bluish; wing-coverts sometimes red or yellow . . . . *C. phoenicea* ♂
3. Breast always yellow, with or without faint dusky barring; throat gray or whitish; upper wing-coverts, outer margins of remiges, and middle tail-feathers plain greenish like the back . . . . . *C. quiscalina* ♀
   Breast whitish with dusky barring, or yellow with or without barring; but feathers of upper wing-surface always conspicuously edged with yellow . . . . . *C. phoenicea* ♀

Campephaga quiscalina quiscalina Finsch

Campephaga quiscalina FINSCH, 1869, Ibis, p. 189 (type locality: Fanti, Gold Coast.) SCLATER, 1912, *in* Shelley, The birds of Africa, vol. 5, p. 202, pl. 51 (Landana).

Campephaga quiscalina quiscalina SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 590 (western Belgian Congo). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 309 (in part. Landana).

DISTRIBUTION OF THE SPECIES: French Guinea and Sierra Leone to the Congo, northern Angola, the Katanga, Uluguru Mountains in Tanganyika Territory, and the highlands of Kenya Colony.

Campephaga quiscalina quiscalina of forests in Upper Guinea and the western part of Lower Guinea has throat region purplish in the adult male, while the adult female has a clear yellow breast and whitish throat. *C. q. martini* of Kenya Colony, Uganda, and the eastern Congo, differs little in the male, but the female has fine dusky barring on the yellow breast. *C. q. münzneri* of highland forest in Tanganyika Territory, known from Oldeani, Mahenge, and Uluguru, lacks purplish gloss in the male, while the female is rather similar to that of *martini*.

In West Africa the purple-throated cuckoo-shrike is a bird of lowland forest, not often seen, and it extends south from the Gaboon through the Belgian Mayombe to Canhoca in northern Angola. I have secured an adult male at Ganda Sundi in the Mayombe, but never saw the species at Lukolela. Specimens from the central Congo are wanting; indeed the central regions of the forest seem not to be inhabited by this bird. Its behavior is identical with that of *C. q. martini*.

Campephaga quiscalina martini Jackson

Campephaga martini JACKSON, 1912, Bull. Brit. Ornith. Club, vol. 31, p. 18 (type locality: Nandi, Kenya Colony).

Campophaga quiscalina NEAVE, 1910, Ibis, p. 132 (Kambove).

Campephaga thêliei SCHOUTEDEN, 1914, Rev. Zool. Africaine, vol. 3, p. 266 (type locality: Kilo, Ituri District). NEUMANN, 1916, Jour. Ornith., p. 151 ("L. Albert").

Campephaga quiscalina martini NEUMANN, 1916, Jour. Ornith., pp. 151, 154. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 261 (Moera; Ukaika); 1924, idem, vol. 38, p. 79. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 261; 1930, idem, vol. 18, p. 285 (Kimilolo R. near Elisabethville); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 126 (Medje; Bondo Mabe). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 591. FRIEDMANN AND

LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 210. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 3, p. 1167.

Campephaga quiscalina quiscalina BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 309 (in part. Kambove).

SPECIMENS: Medje, two males, May 24, August 3. Rungu, male, female, July 2.

ADULTS: Iris dark brown; bill black, gape not swollen, but tongue and interior of throat orange red in male, orange in female; feet of male black, of female blackish gray, soles more yellowish.

DISTRIBUTION: Forests of the eastern Congo, from the Uelle south to the Katanga, and eastward across Uganda to Mt. Kenya, Nairobi, and probably the Amala River east of Lake Victoria.

The type of *C. théliei* was an immature bird, as shown by the pointed tips of its outer rectrices. The juvenal plumage of this species is heavily barred with blackish on breast and flanks.

In the eastern Congo Martin's cuckoo-shrike is mainly a bird of the lowland, not reported from any of the higher elevations. Neither did I find it at Avakubi or Angumu, so it seems characteristic of the forest borders. In East Africa it ascends the mountains, even to 8200 feet on Mt. Kenya. The supposed occurrence at Katanda on Lake Edward was really based on a male of *C. phoenicea flava*. While it is not yet known from the vicinity of Lake Kivu, the Congo Museum has specimens from Kapiri and the Kimilolo River in the Katanga, and Neave secured it at Kambove.

In the northern Ituri and southern Uelle we did not find this cuckoo-shrike in the virgin timber but in tall second growth taking the place of former cultivation. It would perch within 5 to 10 yards of the ground, keeping very silent, though Bates noted that he once heard a bird give a few modulated whistling notes. Each of our four specimens had eaten one or more caterpillars, of varying size, and in addition we noted one green orthopter, a small green cicada, and other unidentified insects.

The few birds collected, in May, July, and August were all in condition to breed, and this was during the rainy part of the year. The nest of the species remains to be found.

Campephaga phoenicea phoenicea (Latham)

Ampelis phoenicea LATHAM, 1790, Index ornithologicus, vol. 1, p. 367 (Africa; restricted type locality: Gambia).

Campephaga xanthornoides SHARPE, 1884, Jour. Linnean Soc. London, zool., vol. 17, p. 424 (Ndoruma).

Campophaga phoenicea OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 126. SALVADORI, 1909, Ann. Mus. Civ. Genova, ser. 3, vol. 4, p. 322 (Buta–Dungu). EMIN, *in* Stuhlmann, 1927, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 12 (Tunguru).

Campephaga ignea REICHENOW, 1902, Jour. Ornith., p. 258 (type locality: Nyangabo, southwest of L. Albert); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 309. SCLATER, 1912, *in* Shelley, The birds of Africa, vol. 5, p. 212.

Campephaga hartlaubi REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 520 (in part. Ndoruma).

Campophaga xanthornoides SALVADORI, 1911, Ann. Mus. Civ. Genova, ser. 3, vol. 5, p. 448 (Uelle).

Campephaga phoenicea SCLATER, 1912, *in* Shelley, The birds of Africa, vol. 5, p. 211; 1930, Systema avium Aethiopicarum, pt. 2, p. 590. NEUMANN, 1916, Jour. Ornith., pp. 150, 153. SCLATER AND M.-PRAED, 1918, Ibis, p. 700 (Mt. Baginzi). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 134; pt. 3, p. 245 (Kuterma; Negunda; Tomaya; Mswa). BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 426. BOWEN, 1931, Catalogue of Sudan birds, vol. 2, p. 52 (Mt. Baginzi). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 126 (Mauda; Dika; Abimva; Faradje; Niarembe; Mahagi Port; Buta; Tiro R.); 1939, Bull. Cercle Zool. Congolais, vol. 16, p. 51 (Bambesa). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 58. BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 64 (upper Kemo R.).

SPECIMENS: Niangara, male, December 16. Nzoro, male, April 22; female, April 7. Faradje, four males, February 13, 14, April 19, December 2; two immature males, August 12, November 21; female, October 23. Aba, male, July 16.

ADULT MALE: Iris dark brown; bill black, corners of gape swollen and pale pink in color; feet black.

FEMALE AND IMMATURE MALE: Iris dark brown, bill and feet blackish.

DISTRIBUTION OF THE SPECIES: Senegal to Eritrea and south to Cape Province but wanting in all the central districts of the Lower Guinea forest. There are three very distinct races formerly regarded as species. Adult males are always black; those of *C. p. phoenicea* usually have a bright red shoulder patch, though sometimes this area is orange or yellow. *C. p. flava* is most often wholly black in the male, but some individuals have yellow on the outer lesser and middle wing-coverts. The male of *C. p. petiti* is very similar to that of *flava*, but the inner webs of the remiges are more nearly black, less olivaceous.

The females vary in quite another way, for they have no really black markings, only blackish brown areas on wing and tail quills and dusky barring on the body. In *phoenicea* the crown and back are grayish brown, and the under side is mostly whitish with numerous dusky bars. The female of *flava* is similar, but crown and back are more olive brown, and the barring of the rump is more apt to extend to the back. The yellow tips of the outer rectrices are longer than in *phoenicea*, and the sides of the breast more apt to be washed with yellow. The female of *petiti* is very distinctive, for the whole underparts are bright yellow save for the whitish upper throat, and dusky barring, if present, is generally restricted to the chest. The rump is yellow with concealed barring, the back yellowish green, sometimes barred, the crown greenish.

Before the reasons for regarding these birds as conspecific are discussed it will be necessary to explain their distribution. *C. p. phoenicea* is a savanna dweller, ranging from Senegal across the Sudan and the country just north of the equatorial forests to Eritrea, Abyssinia, Turkana, and the North Kavirondo District of Kenya Colony. *C. p. flava* replaces the northern race in South and East Africa, extending north to the Kasai District, the Kivu, Kenya Colony, and Lake Stefanie in southern Abyssinia. *C. p. petiti* has been found only in localities with some forest, not far from the Equator: northern Angola, the Loango Coast, Lake Kivu, the North Kavirondo and Nandi districts, the highland west of Lake Albert, and near the northern edge of the Cameroon forest.

There is virtual intergradation between males of *flava* and *petiti* in northern Angola and the region of Lake Tanganyika. Females resembling *flava*, but with somewhat more yellow underparts, are known from Angola and from Lake Kivu. The females of *flava* and *phoenicea* can scarcely be distinguished in Uganda, where males of both forms are found. The males of these two races do not intergrade, the shoulder patch is usually present or absent, except that some males of *flava* even in South Africa have a small yellow area near the wrist. Thus it is that *phoenicea* and *flava* have both been recorded from Entebbe and Mubendi in Uganda, and *phoenicea* and *petiti* from Kakamega. The weight of evidence, however, is against specific distinctness.

In the Congo the red-shouldered cuckoo-shrike is a rather

common bird in the northern savanna, but shows no tendency to invade the forest, and in the Uelle District the Bomokandi River seems to mark its southern limit. To the east it goes southward in the grasslands near Irumu. No evidence was found of seasonal migration.

About Niangara and Faradje it frequents the small trees that dot the grasslands, often going singly, though I saw adult pairs in March and April. To me the birds seemed almost voiceless, but the male has been reported as giving a soft double whistle or a bell-like note. Food is sought by searching leafy branches and by darting down from the tops of bushes or low trees.

In six out of 10 stomachs we found caterpillars, naked and usually green save in one case, where many hairy caterpillars had been devoured. Among the other insects contained in five stomachs, we noted especially some Orthoptera and one hemipter.

Our seven adult males all had bright red shoulder patches, but orange- or yellow-shouldered males have been reported from the Uelle and are known to occur throughout the range of *phoenicea*. My dissections in the Uelle revealed enlarged gonads only from February to April; but farther north, in Darfur, Lynes found this bird breeding in July.

A nest found by L. M. Seth-Smith in Uganda in April was a cup composed of "tree moss" and lichen bound with spider web, well concealed in the fork of a leafless tree about 30 feet up. The eggs were pale yellowish green, spotted with purplish, 21 by 16 mm. Van Someren also found a nest in the same month.

Campephaga phoenicea flava Vieillot

Campephaga flava VIEILLOT, 1817,[1] Nouveau dictionnaire d'histoire naturelle, vol. 10, p. 49 (type locality: South Africa). SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 79. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 589. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 309 (west of Ngoma); 1941, idem, vol. 34, p. 266; 1942, Bull. Cercle Zool. Congolais, vol. 17, p. 16 (Gabiro in Ruanda); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 337 (Kirinda; Kabagari); 1943, idem, vol. 37, p. 270. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 564 (Kasenyi). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 96 (Kamina; Katofio; Elisabethville).

Campephaga nigra DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, p. 148 (L. Tanganyika). SCHALOW, 1886, Jour. Ornith., pp. 414, 427 (eastern Marungu; Lugoma R.). MATSCHIE, 1887, Jour. Ornith., p. 152 (Mpala).

[1] The name *sulphurata* Lichtenstein, 1793, should perhaps be employed instead of *flava*.

REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 518 (in part. Lugoma R., Mpala; Kasongo). SCLATER, 1912, *in* Shelley, The birds of Africa, vol. 5, p. 205 (in part). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 261 (Ishangi; Rutshuru Plain; Kasindi; Beni). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 261 (Manakwa).

Campophaga nigra REICHENOW, 1887, Jour. Ornith., p. 308 (Kasongo). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32. NEAVE, 1910, Ibis, p. 132 (Dikulwe R.; Lualaba R.; upper Lufira R.). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 388 (Mokia, southeast of Ruwenzori).

Campephaga nigra nigra NEUMANN, 1916, Jour. Ornith., pp. 147, 153 (L. Kivu; Kwidjwi I.).

? *Campephaga phoenicea* SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 261 (Mboka).

Campephaga quiscalina martini SCHOUTEDEN, 1935, Rev. Zool. Bot. Africaines, vol. 27, p. 402 (Katanda on L. Edward).

Campephaga flava flava FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 57. FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 208. PETERS AND LOVERIDGE, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 244 (Idjwi I.).

? *Campephaga petiti* VERHEYEN, 1940, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 16, no. 2, p. 5 (Kanzenze).

ADULT MALE: Iris dark brown; bill black, with swollen skin of gape orange yellow; feet black.

DISTRIBUTION: From Cape Province north to Malanje in northern Angola, Luluabourg in the Kasai, Kasongo on the Lualaba, the mountains near Baraka, Lake Kivu, Kasenyi on Lake Albert, the Turkana country, Lake Stefanie, and the Juba River.

The black cuckoo-shrike is a rather silent bird, living singly or in pairs, sometimes with one or two newly fledged young. The male may at times suggest a drongo, but the flight and the barring of females and young are more cuckoo-like. A soft peep or whistle is almost the only note, and the food consists of caterpillars, other insects, and spiders.

While widespread in lowland savannas, this bird is also found in mountain forests in East Africa, and up to levels of over 6000 feet in the eastern Congo. But it is not known from the higher mountain forests of the Kivu Volcanoes or Ruwenzori.

This race seems not to occur in the Lower or Middle Congo, but we have two males and a female from Luluabourg, two females from Kasongo, and a number of males and females collected by Grauer near Baraka. One male from that vicinity has a small yellow patch on the wing-coverts, and one of the females shows a decided yellow wash on the lower breast and under

tail-coverts. A male from Idjwi Island shows some approach to *petiti* in the blackness of the under wing surface, while a female or young male from the same island is washed with yellow below to an unusual degree, as was first pointed out by Neumann. Undoubted specimens of *petiti* have been taken on Idjwi. Two other males from farther east near the Kagera River are plainly *flava*. Two immature males from Kasoko in Marungu are likewise *flava*, and it seems altogether unlikely that *petiti* would occur at Kanzenze. There can be little doubt that the type of *C. purpurascens* Reichenow is a male of *flava* or *petiti* with unusually bluish luster.

In the southern Congo nesting is to be expected from October to January. The nest is known to be a shallow cup, built largely of fibrous lichen and partly covered outside with scaly lichen, placed in a fork some 20 feet up. The two eggs are pale green or gray green, spotted and blotched with lilac and sepia, and measuring 22.9–24.25 by 16.5–17.3 mm.

Campephaga phoenicea petiti Oustalet

Campophaga petiti OUSTALET, 1884, Ann. Sci. Nat., zool., ser. 6, vol. 17, art. 8, p. 1 (type locality: Landana, Enclave of Cabinda). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 388 (Mpanga Forest, 5000 ft.).

Lanicterus niger SHARPE AND BOUVIER, 1876, Bull. Soc. Zool. France, vol. 1, p. 308 (Banana).

? *Campophaga phoenicea* JOHNSTON, 1884, The River Congo, p. 364 (Lower Congo).

Campephaga nigra REICHENOW, 1887, Jour. Ornith., p. 305 (Leopoldville); 1903, Die Vögel Afrikas, vol. 2, p. 518 (in part. Banana; Leopoldville). SCLATER, 1912, *in* Shelley, The birds of Africa, vol. 5, pt. 2, p. 205 (in part. Leopoldville).

Campephaga petiti REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 519 (Leopoldville); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 309. SCLATER, 1912, *in* Shelley, The birds of Africa, vol. 5, p. 204; 1930, Systema avium Aethiopicarum, pt. 2, p. 590. SCHOUTEDEN, 1914, Rev. Zool. Africaine, vol. 3, p. 266 (Kilo); 1918, idem, vol. 5, p. 261; 1932, idem, vol. 21, p. 309 (Burunga); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 95. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 262 (Beni-Mawambi). VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 106. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 3, p. 1166. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 304. VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 76 (Semliki R.; Kabakuli R.; Mangwa and Kalehe near Lutunguru).

Campephaga nigra petiti NEUMANN, 1916, Jour. Ornith., pp. 149, 151–154 (forest west of L. Edward; Kwidjwi I.; L. Kivu).

Campephaga flava petiti FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 57 (Congo basin; Urundi; Ruanda).

ADULT MALE: Iris very dark brown; bill black, with some pale gray at base of mandible, swollen gape light cadmium yellow; feet blackish.

ADULT FEMALE: Iris dark brown; bill brownish black, gape and interior of mouth cadmium yellow; feet blackish gray.

DISTRIBUTION: Found more or less locally in forest areas from the Loango Coast and Stanley Pool to northern Angola, the eastern edge of the Congo forest, Lake Kivu, Toro, North Kavirondo, Nandi, the highland west of Lake Albert, the Ja River and Lolodorf in Cameroon, and smaller wooded areas just north of the Cameroon forest. It is not restricted to highlands but ascends in places to 6000 feet. From the more central parts of the Upper Congo forest there is no record of Petit's cuckoo-shrike. Around Avakubi in the Ituri I never saw it, nor even along the northern fringe of the forest near the Nepoko or Bomokandi rivers.

In the Cameroon it would seem to invade the range of *C. p. phoenicea*, in Angola it must live close to *C. p. flava*, and near Lake Albert all three races have been reported within a distance of about 40 miles. There *petiti* lives in highland forest near Djugu, *flava* on the lake shore at Kasenyi, and *phoenicea* in the grassland of the Lendu Plateau and at Mahagi Port near the northern end of the lake. *C. p. petiti* thus seems to behave like a valid species, the other two more like races.

The adult males of *petiti* are so like those of *flava* that one feels satisfied of the occurrence of the former only when the yellow-breasted females or young have been secured. The immature males of all three races of this species molt from the spotted juvenal dress into a plumage closely similar to that of the adult female. At this stage the young male of *petiti* is as easily identified as the female.

One adult male collected by Grauer west of Baraka at 3900 feet has the coloration of *petiti*, but a female from the same locality is a little closer to *flava*. On Idjwi Island in Lake Kivu he obtained an adult male and a female of *petiti*, as well as an intermediate which has already been mentioned. Its sex is given on the label as a male, and it may be a young male in the second plumage. In the highland west of Lake Edward, Grauer also secured an adult male of *petiti*.

At Djugu in August, 1926, I collected an adult pair of *petiti* in non-breeding condition, from a large forest tree standing in an area of second growth, and an immature male in dense undergrowth. All three had eaten caterpillars, and the male a green grasshopper as well. Nesting in that region would probably be carried on from February to May. South of the Congo forest the season would be reversed.

Lobotos lobatus oriolinus Bates

Lobotus oriolinus BATES, 1909, Bull. Brit. Ornith. Club, vol. 25, p. 14 (type locality: Assobam, southeastern Cameroon). CHAPIN, 1921, Amer. Mus. Novitates, no. 17, p. 16 (Medje). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 193 (Kampi-na-Mambuti). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 593.

Lobotos temminkii HARTLAUB, 1857, System der Ornithologie Westafrica's, opposite p. lix.

Lobotos oriolinus SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 126. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 320, pl. 7.

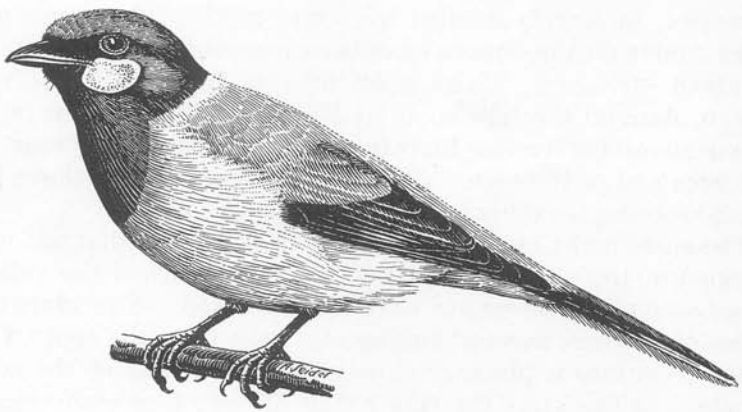

FIG. 11. Male of the wattled cuckoo-shrike, *Lobotos lobatus oriolinus*.

SPECIMEN: Medje, male, August 15.

ADULT MALE: Iris dark brown; bill black, lobes at corners of mouth orange; feet blackish.

DISTRIBUTION OF THE SPECIES: Forests of Upper and Lower Guinea, but specimens are so few that no exact limits can be set. *L. l. lobatus* (Temminck) is known with certainty only from the

Gold Coast, though it may be expected to reach Liberia. The breast and rump in the male of this race are bright orange chestnut, whereas in *L. l. oriolinus* of the Lower Guinea forest the breast is yellow, with a light wash of golden brown, the rump more greenish yellow. The head and neck are black in males of both races, with bright green gloss over most of the black. The female of *oriolinus* is duller in color, with the head mainly dull blackish and gape wattle small; that of *lobatus* is still unknown.

An immature male of *L. l. oriolinus* that I secured at Angumu in the eastern Congo forest on July 29, 1937, is not unlike the female as figured by Bates (1911, Ibis, p. 535, pl. 8), but it still retains the dusky barring of its juvenal dress on parts of the back, scapulars, wing-coverts, and breast. The gape wattle was already evident, lemon chrome in color.

The range of *L. l. oriolinus* is certainly extensive, for it is known from Efayong, Assobam, and Molundu in Cameroon, Nola in the French Congo, and five localities in the eastern Congo forest. A. Prigogine has taken it at Lundjulu and near Kamituga. On the south the species has been reported by Cassin (1859) from the Camma River and by Maclatchy (1937) from the vicinity of Mimongo in the Gaboon. Hartlaub (1857) even listed it from the "Congo." The alleged occurrence in Angola has not been confirmed.

The example we secured at Medje is the only one I have actually seen alive. It was sitting quietly on a low bough of a small tree in the forest just south of the post of Medje. It was in breeding condition and had been eating caterpillars. Save for the conspicuous lobes at the sides of the face, it resembled an oriole. The young male from Angumu was shot by my helper Nkotiba in heavy forest, and its stomach contained five small green caterpillars. These are the favorite food, though Bates found they also ate grasshoppers and other insects.

The dimensions of our adult male are: wing, 103 mm.; tail, 89; culmen to base, 16; metatarsus, 19. Of the young male: wing, 92 mm.; tail, 82; culmen to base, 16; metatarsus, 20. Of an adult female from Nola, French Congo, in the Philadephia Academy: wing, 95 mm., tail 85; culmen to base, 15; metatarsus, 19. According to Gyldenstolpe, a female from the Ituri forest had the wing 98.4 mm., tail 90 mm.

FAMILY **TIMALIIDAE.** BABBLERS

KEY TO THE GENERA OF TIMALIIDAE IN THE CONGO REGION[1]

1. Tail less than 90 mm. long 2
   Tail exceeding 90 mm. 6
2. Wing less than 90 mm. long 3
   Wing longer than 90 mm. 4
3. Bill very short: culmen to base not more than 14.5 mm. ..... *Pseudoalcippe* (p. 204)
   Bill larger: culmen to base measuring about 15 to 21 mm. ..... *Malacocincla* (p. 206)
4. Whole underparts white, spotted on chest with rufous .... *Ptyrticus* (p. 221)
   Underparts not whitish 5
5. Entire lower surface deep rufous or maroon, back similar but darker, crown gray ..... *Phyllanthus* (p. 225)
   Throat rufous, but breast and abdomen grayish brown, washed at most with rufous, back brownish gray, crown black or chestnut .. *Lioptilus* (p. 223)
6. Wing length usually exceeding 92 mm.; tail rounded, its outermost feathers not 30 mm. shorter than the median ..... *Turdoides* (p. 228)
   Wing length less than 92 mm.; tail more graduated, outermost feathers more than 30 mm. shorter than median ..... *Argya* (p. 240)

KEY TO THE SPECIES OF *Pseudoalcippe*

1. Crown, face, and upper throat blackish ..... *P. atriceps*
   Crown gray, uniform or dark streaked 2
2. Whole head gray; throat lighter, but not distinctly streaked .. *P. abyssinica*
   Crown and ear region dark gray, lores blackish; throat heavily streaked with black and whitish ..... *P. stierlingi*

Pseudoalcippe abyssinica ansorgei (Rothschild)

Lioptilus abyssinicus ansorgei ROTHSCHILD, 1918, Bull. Brit. Ornith. Club, vol. 38, p. 78 (type locality: Mucuio, Cuvali R., Angola).

Pseudoalcippe abyssinicus ansorgei MOREAU, 1943, Ibis, p. 389 (Kungwe-Mahare highland; Mbisi Forest in Ufipa).

The range of the gray-headed *Pseudoalcippe abyssinica* extends from the highlands of central Abyssinia and southeastern Sudan south to Usambara and to Ufipa on the southeastern side of Lake Tanganyika, with outlying representatives on Mt. Cameroon, Fernando Po, and the highland of western Angola. Four or five races are recognized, and their distribution suggests that *P. atriceps* of central Africa, with black crown and cheeks, and *P. stierlingi*, with streaked throat, are little more than subspecies of *abyssinica*. The range of *stierlingi* is from central Tanganyika Territory to the northern end of Lake Nyasa.

[1] Four genera often referred to the Timaliidae are here placed in other families: *Macrosphenus, Graueria, Hypergerus* in the Sylviidae; *Neocichla* in the Sturnidae.

It is surprising that while *P. abyssinica monachus* occupies Mt. Cameroon, the black-headed *atriceps* is found on the Banso and Genderu Mountains just to the northeast. *P. abyssinica ansorgei* of Angola seemed completely isolated from its nearest ally in East Africa until R. E. Moreau obtained specimens on Mt. Kungwe, east of Lake Tanganyika, and in Ufipa, which cannot be distinguished from Angola birds. *P. a. ansorgei* seems to be more uniform gray beneath than *P. a. abyssinica* of Abyssinia and Kenya Colony, less whitish on the belly. It is also less rufous on back and rump than most examples of the nominate race. Wings measure 68–71 mm.

One would expect the race *ansorgei* to occur somewhere in Marungu, and Schouteden tells me the Congo Museum has a single specimen collected by Gaston de Witte at Kasiki on the Marungu highland. It is likely to occur also in the Katanga.

Pseudoalcippe atriceps (Sharpe)

Turdinus atriceps SHARPE, 1902, Bull. Brit. Ornith. Club, vol. 13, p. 10 (type locality: Ruwenzori). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 740; 1911, Wiss. Ergeb. Deutschen Zentral-Afrikas Exped., vol. 3, p. 371 ("forest north of Beni"; Rugege Forest; northwest of L. Tanganyika). JACKSON, 1906, Ibis, p. 541. O.-GRANT, 1908, Ibis, p. 300 (Mfumbiro Volcanoes, 7000 ft.); 1910, Trans. Zool. Soc. London, vol. 19, p. 381 (Mubuku Valley, 6000–9000 ft.; Butagu Valley, 7000 ft.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 277 (northwest of L. Tanganyika, 2000 m.; Kisenyi–Rutshuru). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 295.

Lioptilus atriceps GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 167 (Burunga).

Pseudoalcippe atriceps BANNERMAN AND BATES, 1924, Ibis, p. 244. BATES, 1930, Handbook of the birds of West Africa, p. 378. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 364. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 122, fig. 36. FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 222. JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 844 (Kigezi; Ruanda).

Alcippe abyssinica atriceps GROTE, 1926, Ornith. Monatsber., p. 53.

Pseudalcippe atriceps SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 318 (Lulenga; Kibati; Nya-Muzinga); 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 7 (Mt. Wago).

Hypergerus atriceps SCHOUTEDEN, 1935, Rev. Zool. Bot. Africaines, vol. 27, p. 402 (Mushumangabo near Mt. Nyamlagira).

Pseudoalcippe atriceps kivuensis SCHOUTEDEN, 1937, Rev. Zool. Bot. Africaines, vol. 30, p. 165 (type locality: Kivu Volcanoes); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 95 (Kamatembe; Mt. Sabinyo, 3000 m.); 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 285.

DISTRIBUTION: Mountain forests of the eastern Congo, western

Uganda, and Ruanda-Urundi, from the Lendu Plateau west of Lake Albert south to the Rugege Forest and the highland west of Baraka, also in the Banso and Genderu Mountains of Cameroon at 4000 to 6000 feet. I can find no geographic variation; Kivu specimens in the American Museum are not lighter in color than those of Ruwenzori, nor do others from the Cameroon show any difference.

Although Schubotz was said to have collected an example in the forest north of Beni, the black-headed hill-babbler is really limited in the eastern Congo to forests above 5000 feet. There it is rather common and widespread, usually seen singly or in pairs, often in thickets and not very high up in the trees. On Ruwenzori it has been observed from 6000 feet up to 9000 feet, in forest and bamboos, though it becomes much less common above 7600 feet. Near Djugu and in the Mpanga Forest it descends to about 5000 feet. West of Lake Edward and in the Kivu District it is to be seen wherever there are suitable woods, from around 6000 feet to about 9000.

We found males in full breeding condition on west Ruwenzori in November, giving their loud melodious song from the depths of the woods and thickets, so clear and full voiced that one expected it to come from some thrush like *Cossypha*. Breeding probably continues through most of the rainy months of the year.

The nest of this species remains unknown, but that of the closely allied *P. abyssinica*, according to the Moreaus,[1] is a small cup slung between twigs in a shrub and is composed partly of moss or beard lichen, sometimes with cobwebs aiding in support. The two eggs are buffy cream, with a few brown spots near the larger end.

The food of *P. atriceps*, so far as I noted it, consists of small insects, including beetles and an occasional caterpillar.

KEY TO THE SPECIES OF *Malacocincla* IN THE CONGO

1. Upper breast distinctly gray, uniform 2
   Upper breast whitish, buff, or grayish white washed with brown 3
2. Wing longer than 75 mm., metatarsus exceeding 29 mm., flanks gray like chest ..... *M. poliothorax*
   Wing shorter than 75 mm., metatarsus less than 29 mm., flanks brownish .. .. *M. pyrrhopterus*
3. Whole middle of crown black ..... *M. cleaveri*
   Crown brown or grayish 4
4. Wing exceeding 80 mm. in length; metatarsus a little over 30 mm.; crown brown, about like back ..... *M. puveli*

[1] 1939, Ibis, p. 303.

Wing less than 81 mm., metatarsus not longer than 30 mm., crown brownish or gray 5

5. Breast, flanks, and abdomen buffy, pale throat feathers not dark at bases, a gray malar stripe present ..... *M. fulvescens*
   Middle of lower breast and abdomen whitish, pale throat feathers darker gray basally, no dark malar stripe 6
6. Metatarsus 26–30 mm. long, feet pale in color; chest often with narrow dusky feather edgings ..... *M. albipectus*
   Metatarsus 23–27 mm., feet darker and grayer; chest usually with a light buffy wash but no squamate pattern ..... *M. rufipennis*

Malacocincla poliothorax (Reichenow)

Alethe poliothorax REICHENOW, 1900, Ornith. Monatsber., p. 6 (type locality: Bangwa, north of Mt. Cameroon). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 373 (Mubuku Valley, Ruwenzori, 7000–8000 ft.). VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 244. BATES, 1930, Handbook of the birds of West Africa, p. 400. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 479. BERLIOZ, 1936, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 8, p. 331 (in part. Mbwahi). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 993 (Kigezi).

Turdinus poliothorax REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 370. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 277 (northwest of L. Tanganyika, 2000 m.).

Illadopsis poliothorax SCHOUTEDEN, 1935, Bull. Cercle Zool. Congolais, vol. 12, p. 67 (Lulenga; Kilo); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 96 (Mt. Bisoko in Kibumba); 1942, Bull. Cercle Zool. Congolais, vol. 17, p. 61 (forest west of Astrida); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 337. BANNERMAN, 1936, Ibis, p. 381; 1936, The birds of tropical West Africa, vol. 4, p. 117.

DISTRIBUTION: Highlands of Fernando Po, Cameroon, the eastern Congo from west of Lake Albert to the mountains northwest of Lake Tanganyika, southern Ruanda, Lerundo in the Kavirondo District of Kenya Colony, and supposedly Mt. Elgon.

No geographic variation has yet been proved, and I have little doubt that this species is much more closely allied to the present genus than to *Alethe*. My friend Jean Delacour, however, still feels that it does not belong in the Timaliidae, and I must admit that in its long feet and small bill it differs noticeably from the other species of *Malacocincla*. One of Grauer's specimens from northwest of Lake Tanganyika is plainly immature but shows no trace of light spotting, not even on its wing-coverts.

This forest babbler, with exceptionally rufous upperparts and gray chest, is a rather scarce bird throughout its range. It must be restricted to woodlands above 5000 feet in the eastern

Congo, though descending almost to 3000 feet on Mt. Cameroon. Most of the specimens from Ruwenzori and the mountains of the Kivu District have been obtained between 5000 and 8000 feet. Thélie's example from "Kilo" must have come from the highland between Kilo and Lake Albert.

On the eastern slope of Ruwenzori the British Museum expedition collected only two individuals, which were found skulking along in thick undergrowth and were heard to give a curious harsh note. Boyd Alexander heard it utter a series of loud notes. West of Lake Edward, Grauer obtained a single bird at 5250 feet, in the Rugege Forest another, and to the northwest of Lake Tanganyika he got at least seven examples in woods at 5200–7200 feet.

To the southwest of Lake Kivu, Babault collected two adults, but the young bird mentioned by Berlioz was really a juvenile *Bessonornis archeri*. On the Kivu Volcanoes the species is rare, and neither Gyldenstolpe nor I had the good fortune to see it, though Schouteden and De Witte each brought back a single example.

Malacocincla fulvescens fulvescens (Cassin)

Turdirostris fulvescens CASSIN, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 54 (type locality: Camma R., Gaboon).

Trichastoma fulvescens SHARPE AND BOUVIER, 1877, Bull. Soc. Zool. France, vol. 2, p. 478 (Chissambo; Condé).

Turdinus cerviniventris SHARPE, 1901, Bull. Brit. Ornith. Club, vol. 12, p. 3 (type locality: Condé, near Loango Coast).

Turdinus fulvescens REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 736 (in part. Tshisambo; Condé). LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 18 (Mukimbungu).

Turdinus gularis REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 738 (in part. Tshisambo; Condé).

Turdinus fulvescens cerviniventris SCHOUTEDEN, 1924, Rev. Zool. Africaine, vol. 12, p. 269 (Kidada).

Turdinus fulvescens fulvescens SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 197 (Kisala in Mayombe).

Illadopsis fulvescens fulvescens SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 361. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 106.

DISTRIBUTION OF THE SPECIES: Sierra Leone and French Guinea to Uganda, North Kavirondo, and Lake Tanganyika, south to northern Angola and the Kasai District. *M. f. gularis*

(Sharpe) is the Upper Guinea representative, and *M. f. fulvescens*, which is more tawny below and more streaked with gray on the throat, extends from the Cameroon to the Lower Congo. Two very tawny forms, *moloneyanus* and *iboensis*, range from the eastern Gold Coast to the British Cameroons. They have usually been regarded as forming a distinct species, but are likely to prove conspecific with *M. fulvescens*. In the Upper Congo and Uganda lives *M. f. ugandae*, again less tawny below and virtually unstreaked on the whitish throat. The only specimen I have seen from Angola was collected by Ansorge at Canhoca. In general coloration it seems a little lighter than the average of *ugandae* and is likewise unstreaked on the throat.

Malacocincla fulvescens fulvescens is certainly the race of the Lower Congo, and Malbrant has sent us one example from Brazzaville. It may reach Duma on the Ubangi, where Schubotz collected a male which I believed to be of the nominate form. At Lukolela on the middle Congo, however, *ugandae* already appears, and Boyd Alexander's specimens from the upper Ubangi were of that eastern race.

At Tshela in the Mayombe I have heard the characteristic early morning whistle of this babbler, and no doubt it is a common bird in that forested district. Larger billed and longer tailed than *rufipennis* and allies, *M. fulvescens* is more addicted to perching and feeding up in bushes. The behavior is discussed in detail under the next subspecies.

Malacocincla fulvescens ugandae (Van Someren)

Turdinus ugandae VAN SOMEREN, 1915, Bull. Brit. Ornith. Club, vol. 35, p. 125 (type locality: Sezibwa River forest, Uganda).

Turdinus fulvescens SHARPE, 1890, *in* Jameson, The story of the rear column, p. 401. SHELLEY, 1890, Ibis, p. 161 (Yambuya). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 736 (in part). SCHOUTEDEN, 1924, Rev. Zool. Africaine, vol. 12, p. 418 (Eala).

Turdinus cerviniventris SHARPE, 1901, Bull. Brit. Ornith. Club, vol. 12, p. 3 (in part. Yambuya). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 737 (in part. Yambuya). O. GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 380 (Mpanga Forest, 5000 ft.).

Illadopsis fulvescens DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Kibongo). CHAPIN, 1931, Nat. Hist., vol. 31, p. 601 (Lukolela).

Turdinus reichenowi SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 277 (Beni; Moera; Beni–Mawambi; Ukaika; Mawambi–Irumu).

Turdinus fulvescens cerviniventris SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 333 (Basongo; Luebo; Kamaiembi).

Malacocincla fulvescens ugandae GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 169.

Turdinus fulvescens ugandae SCHOUTEDEN, 1925, Rev. Zool. Africaine, vol. 13, p. 14 (Kunungu; Mongende; Bolobo).

Illadopsis fulvescens ugandae CHAPIN, 1928, Amer. Mus. Novitates, no. 313, p. 4 (Avakubi). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 361 (Ubangi, Uelle, and Semliki districts). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 108. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 106 (Buta; Mauda; Poko). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 842.

Illadopsis fulvescens fulvescens FRIEDMANN, 1930, The African Republic of Liberia and the Belgian Congo, vol. 2, p. 761 (Bumba).

SPECIMENS: Avakubi, three males, February 12, March 4, November 23; female, January 11; two immature males, February 24, October 19; juvenile female, January 30. Ngayu, female, December 12. Medje, male, July 8; female, July 12. Niangara, male, female, May 11; immature male, December 1; juvenile female, December 18.

ADULTS OF BOTH SEXES: Iris bright brown; maxilla blackish, mandible blue-gray; feet bluish gray, darker on front of metatarsi.

DISTRIBUTION: Forests of the Upper Congo from the vicinity of Bolobo and the Ubangi River east to Uganda, North Kavirondo, the Manyema District, and the Kabogo Forest on the east shore of Tanganyika. On the north it reaches the gallery forests of the Upper Uelle, to the south the forest patches of the Kasai. We have 10 skins from Luluabourg which certainly represent *ugandae*, and four from Lukolela on the middle Congo. The forest patches of northern Angola are inhabited by a light-colored form possibly distinct from *ugandae*.

This is the commonest species of *Malacocincla* in all the lowland forests of the Congo. I have collected it at 4200 feet on the eastern side of the Rutshuru Valley, and it is common in the Semliki Valley right to the base of Ruwenzori. Though reported from the Mpanga Forest of Uganda near 5000 feet, it never seems to ascend higher. Grauer's only specimen from the Manyema District is without original label.

Clearings of any size are distasteful to it, and even in the Ituri it shuns gardens or banana groves. But when one camps in the forest the very first bird call heard at dawn is likely to be the long-drawn, husky whistle of *M. fulvescens*. It is often intro-

duced by a couple of shorter, less musical attempts, and as the whistles are slowly repeated they vary characteristically about half a tone, always low in the scale. In parties of four to six the birds are skulking in the lower undergrowth and thickets, keeping near the ground, hopping and flitting from bush to bush rather than feeding right on the ground.

As the sun mounts in the sky the whistles soon cease, and during most of the day the characteristic call is a sort of hoarse whisper, easily recalled by its resemblance to the words "fifty pound" or "dictaphone," with the accent on the first syllable. The best rendering would be "dict!-a-fown." The end has a twang that can sometimes be heard at the end of the early morning whistles, if they are given close by.

Often seen in the densest, darkest spots in the forest, these babblers are especially fond of thick tangles and poke their beaks in search of food up amid the dead leaves lodged here and there. It is not unusual to find them amid mixed bird parties.

I have also heard a half dozen in a thicket uttering loud, continuous, scolding cries, directed perhaps at a snake. On another occasion a young bird still in soft juvenal plumage repeated a triple nasal note louder than any of the adults'.

The plumage of the nestling is more rufous on crown, back, and wings than that of adults. The soft fluffy feathers of breast and belly are white basally, and this color shows through their loose dark brown tips. The throat remains bare after the rest of the body is well clothed, and then light gray feathers begin to appear there.

In addition to the two fledglings in December and January, immature birds in later stages were obtained in the Ituri and Uelle in October, December, and February. Adults in breeding condition in May, July, and December showed that eggs must be laid almost throughout the entire year.

Nests we did not find, but those of the nominate race in the Cameroon were described by Bates[1] as loose cups of large leaves, more or less damp and decayed, with a few fine stems, fibers, or tendrils inside. They were found on low bushes at the borders of the forests, in all seasons save the very driest. Eggs were always two, 20–23.5 by 15–16.5 mm., exceedingly variable in color.

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[1] 1911, Ibis, p. 624, pl. 12, figs. 1–3.

The ground color may be pinkish white, creamy or pure white; the spotting and blotching of brown, maroon, and purplish gray; the larger end sometimes covered by a cap of deep chestnut maroon.

Despite statements by other observers, I have never had proof that columns of doryline ants attracted this or any other species of *Malacocincla*. In 14 stomach examinations of *ugandae* I have found insects, their eggs, or immature stages in every case. Usually they were small beetles, but Hemiptera were noted once, caterpillars twice, ants twice, an orthopter once, and termites (mostly winged) three times. Insect eggs were present once, and one small chrysalis was still enclosed in a thin cocoon. No fruit was ever noticed.

Malacocincla pyrrhoptera pyrrhoptera (Reichenow and Neumann)

Callene pyrrhoptera REICHENOW AND NEUMANN, 1895, Ornith. Monatsber., p. 75 (type locality: Mau, Kenya Colony).

Turdinus pyrrhopterus kivuensis NEUMANN, 1908, Bull. Brit. Ornith. Club, vol. 21, p. 55 (type locality: western Kivu Volcanoes). SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 80 (northwest of L. Tanganyika).

Turdinus pyrrhopterus O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 380 (Mubuku Valley, Ruwenzori, 6000–9000 ft.) SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 277 (northwest of L. Tanganyika, 2000 m.). FRIEDMANN, 1928, Proc. New England Zool. Club, vol. 10, p. 50.

Turdinus kivuensis REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 371.

Turdinus tanganjicae REICHENOW, 1917, Jour. Ornith., p. 391 (type locality northwest of L. Tanganyika).

Malacocincla pyrrhoptera HARTERT, 1920, Novitates Zool., vol. 27, p. 483 (Mt Sabinyo, 2700 m.).

Malacocincla pyrrhoptera kivuensis GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 171 (Kibati).

Pseudoalcippe pyrrhopterus SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 365. GRANVIK, 1934, Rev. Zool. Bot. Africaines, vol. 25, p. 65. BERLIOZ, 1936, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 8, p. 331 (Mbwahi). FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 223. JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 845.

Pseudalcippe pyrrhopterus SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 318.

Illadopsis pyrrhopterus kivuensis VAN SOMEREN, 1932, Novitates Zool., vol. 37, p. 341 (Kigezi). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 96 (Burunga; Lulenga).

Pseudoalcippe pyrrhoptera kivuensis BENSON, 1939, Bull. Brit. Ornith. Club, vol. 59, p. 44.

Illadopsis pyrrhopterus SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 285 (Mt. Wago; Djalasinda). PETERS AND LOVERIDGE, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 247.

DISTRIBUTION OF THE SPECIES: Highlands of Kenya Colony west of the Rift Valley, Mt. Elgon, highlands of western Uganda and the eastern Congo, Kungwe-Mahare district in western Tanganyika Territory, and North Nyasaland.

There seems to be no consistent difference between the populations in western Kenya Colony and those of the eastern Congo, or even those of Kungwe. All these must be included under nominate *pyrrhoptera*. Young birds have browner crowns, adults grayer, but often washed with olive brown posteriorly. *M. p. nyasae* Benson[1] of the North Nyasa District is brown on the crown when adult.

Since this small, gray-breasted babbler is restricted to mountain forests above 5000 feet, its range is markedly discontinuous. In addition to the localities mentioned above, it has been taken at Djugu on the Lendu Plateau, on the highland west of Lake Edward, and in the Rugege Forest in southwest Ruanda. Though ascending sometimes to 9000 feet, it is seen more often near the lower edges of the mountain forests, especially in thick undergrowth, roaming about in small parties of four or five. As they hop about close to the ground they continually utter a low twittering note. Such habits are bound to remind one of *M. fulvescens* and *M. rufipennis* in the lowland forests, to which it is really more closely related than to *Pseudoalcippe*.

Nothing is known of the nesting of *M. pyrrhoptera*, though it may be suspected to breed throughout the greater part of the year. A young bird which still retains much of its rufous juvenal plumage was collected by Grauer west of Uvira on July 17. It could not have left the nest more than a fortnight earlier.

Malacocincla rufipennis rufipennis (Sharpe)

Trichastoma rufipennis SHARPE, 1872, Ann. Mag. Nat. Hist., ser. 4, vol. 10, p. 451 (type locality: Gaboon).

Turdinus albipectus HARTERT, 1900, Novitates Zool., vol. 7, p. 48 (in part. Olinga in Ituri forest).

Turdinus fulvescens O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 379 (Irumu). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika, vol. 3, p. 370. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 276 (Beni; Moera; Mawambi; Ukaika).

[1] 1939, Bull. Brit. Ornith. Club, vol. 59, p. 43 (Mt. Nyakhowa near Livingstonia).

Alethe polioparea REICHENOW, 1912, Jour. Ornith., p. 321 (type locality: Angu on Uelle R.). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 480. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 118.

Alethe poliporea SCHUBOTZ, 1912, Ber. Senckenbergischen Naturf. Gesellsch., vol. 43, p. 356.

Turdinus rufipennis O.-GRANT, 1917, Ibis, p. 79. FRIEDMANN, 1928, Proc. New England Zool. Club, vol. 10, p. 50.

Malacocincla reichenowi GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 171 (Kartushi).

Turdinus pumilus FRIEDMANN, 1928, Proc. New England Zool. Club, vol. 10, p. 50 (Avakubi; Medje).

Illadopsis rufipennis rufipennis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 361. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 108. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 565 (Saidi in Ituri).

Illadopsis rufipennis SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 96 (east of Rutshuru Plain). GRANT AND M.-PRAED, 1940, Bull. Brit. Ornith. Club, vol. 60, p. 52.

SPECIMENS: Avakubi, two males, June 8, July 30; immature female, July 30. Ngayu, female, December 11. Medje, immature female, April 4.

ADULTS OF BOTH SEXES: Iris brown; maxilla blackish brown, mandible light gray; feet dull brownish gray or bluish gray.

DISTRIBUTION OF THE SPECIES: Eastern Sierra Leone and French Guinea to the forested Cameroon, Fernando Po, Gaboon, and northwestern Angola, forests of the Congo and Uganda; also those from Usambara to eastern Uluguru and Zanzibar.

The Upper Guinea race is *M. r. extrema* Bates,[1] with crown and back more rufous brown than *M. r. rufipennis* of Lower Guinea. On Fernando Po lives *M. r. bocagei* (Salvadori) which seems to be deeper in color than birds of the Cameroon mainland. Nominate *rufipennis* ranges from Degema in Southern Nigeria and the Cameroon-Gaboon coast eastward to the Congo forest and even Uganda and North Kavirondo, unless *M. r. minuta* (Van Someren) can be proved valid.

The species is wanting in the highlands of Kenya Colony, where *M. pyrrhoptera* replaces it. Then near the east coast, in Usambara, the Nguru Mountains, and on Zanzibar, it is again represented by *M. r. distans* (Friedmann), with chest rather gray, upper tail-coverts scarcely rufous, and tail somewhat longer than in the nominate race. *M. r. puguensis* Grant and Mack-

[1] 1930. Bull. Brit. Ornith. Club, vol. 51, p. 49 (Nzerekoré, French Guinea).

worth-Praed, with upperparts lighter than those of *distans*, occupies the Pugu Hills near Dar-es-Salaam and apparently the foothills of eastern Uluguru.

In the Congo and Uganda another species, *M. albipectus*, is apt to be confused with *rufipennis*. Representatives of *rufipennis* there are scarcely to be distinguished from Gaboon specimens of *M. r. rufipennis* except that in some of the more eastern birds the crown color is more gray brown and thus more different from the back. Uganda birds are not distinguishable by smaller size. The type of *M. r. minuta* from the Mabira Forest, with wing only 64 mm., must be merely a young female. A male from Lugalambo has a more grayish crown and wing 76 mm.; other examples bridge this wide gap. Specimens from Uganda and North Kavirondo have wings 64–76 mm., while those of West African *rufipennis* measure 66–77 mm.

My own specimens of *rufipennis* from the Ituri District are inseparable from the Uganda series, and among them are two immature females with wings only 65 and 66 mm., though adult males have wings reaching 74 mm. In addition to the specimens listed, I have since collected others at Angumu, in the Semliki Valley, and in the forest east of the Rutshuru Plain.

An adult female collected by Grauer at Kindu and Ansorge's young female from Olinga in the Ituri likewise represent this form. If it can be proved that birds from the eastern Congo and Uganda are separable from those of the Gaboon, then *M. r. minuta* will be their name. *M. pumila* (Reichenow), based on a rather small bird from Bipindi, Cameroon, must be synonymous with nominate *rufipennis*. In my opinion *Alethe polioparea* is a synonym of *rufipennis*, and I have seen one of Schubotz's specimens from Angu in the Frankfurt Museum.

Malacocincla albipectus lives side by side with *rufipennis* in a large part of the Congo forest and in forests of Uganda. It is little larger but has longer metatarsi and frequently shows dark feather edgings on the upper breast. The relations between these two species have so puzzled me that I know the published references can scarcely be untangled without reëxamination of almost every specimen. Sassi (1916) certainly included both under the name *fulvescens*, for at least five of his birds had the scaly breast pattern of *albipectus*.

These small brownish babblers are characteristic birds of the

lowland Congo forests, both keeping more to the ground than *Malacocincla fulvescens*. The present species, *rufipennis*, walks about on the leaf-strewn floor of virgin forest or dense second growth, often singly, sometimes in two's or three's, and also perches in low bushes. Occasionally they seemed to join mixed bird parties.

One of the frequent bird notes in the Ituri, which I at first attributed to *M. rufipennis*, is an ascending series of three or four short whistles, introduced by one or two low chirps or clucks. It took weeks to find their author. When alarmed by my stealthy approach it would become silent and flit away close to the ground through the undergrowth. Its call note was a short, hoarse "chăck." One male in breeding condition, located and shot by following these whistles, belongs unquestionably to this species. Two others were *M. albipectus*.

In later years I tried to reinvestigate this question but with no greater success. At Lukolela, where I secured four specimens of *albipectus* and no *rufipennis*, I did not hear the familiar notes. In the Semliki Valley and east of the Rutshuru Plain I heard the calls again, exactly as at Avakubi, and collected only *rufipennis*. But there is no reason to think *albipectus* may not have been there too. For 30 years I have wondered how two distinct species of *Malacocincla* could utter notes so closely similar.

In Usambara Moreau[1] heard *M. rufipennis distans* give "a slow and meditative call, 'hoooit-hooooee,' in a human-like whistle," but these notes appear more prolonged than the brief syllables of Ituri birds and are fewer in number. He found a nest of *distans* on December 15, well hidden in a leafy stump about 3 feet high. It was a deep cup of dead leaves lined with "horse-hair" fungus, and contained two eggs, grayish white, speckled or blotched with red brown.

The breeding season of *M. r. rufipennis* in the northern Ituri seemed to begin with the rains toward April but may well extend throughout most of the year. At Angumu, close to the Equator, I should expect nesting at any time of year. No nest has ever been reported from the Congo or West Africa.

Three stomachs that I examined held remains of insects, including beetles, some insect eggs, and one tiny snail.

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[1] 1932, Ibis, p. 672: 1937, idem, p. 322.

Malacocincla albipectus albipectus (Reichenow)

Turdinus albipectus REICHENOW, 1887, Jour. Ornith., p. 307 (type locality: Stanleyville); 1905, Die Vögel Afrikas, vol. 3, p. 738, atlas, pl. 30 (in part. Stanley Falls).

Turdinus rufipennis albipectus SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 333 (Luebo); 1925, idem, vol. 13, p. 14 (Kunungu).

DISTRIBUTION OF THE SPECIES: Upper Congo forest west to Bolobo and east to the Ituri, Semliki Valley, forest patches of Uganda, and the North Kavirondo District.

Despite a close general similarity to *M. rufipennis*, this species is distinguished by the slightly firmer texture of its plumage, with frequent development of a faint scaly pattern due to dusky feather edgings, particularly on the upper breast. Its metatarsi are slightly longer, measuring 26 to 30 mm., whereas those of *rufipennis* from the same regions measure 23 to 27 mm. As Van Someren pointed out, in dried skins they appear lighter in color in *albipectus* than in *rufipennis*, and my few notes on the difference in color of the feet in fresh specimens are confirmed by others on the labels of W. J. Ansorge and H. J. A. Turner. The feet of *albipectus* are usually pale pinkish gray in both sexes, those of *rufipennis* bluish to brownish gray. The rictal bristles seem longer and more prominent in *rufipennis*.

In length of wing, tail, and culmen the difference between the two species is slight. Wings of *M. albipectus* measure 68–80 mm., tails 50–62, culmen to base 16–18. The males are of course larger, though incorrect sexing of specimens is all too common.

The whiteness of the underparts, which was stressed in the original description, diminishes to the eastward. Birds collected at Lukolela are most like Reichenow's plate in this respect, while those from the Ituri are virtually indistinguishable from Uganda specimens. Scaliness of the chest seems to be most pronounced in the North Kavirondo District. We may conclude that *M. a. albipectus* is found between Lukolela and Stanleyville and is replaced by *M. a. barakae* from the Ituri eastward across Uganda. No corresponding variation in size can be demonstrated.

At Lukolela in 1930 I collected three males and a female of nominate *albipectus*. One of the males was in full breeding condition on September 24, at the beginning of the rains, but in that vicinity I never heard the characteristic short whistles described under *M. rufipennis*. The three stomachs examined held only insect remains.

Malacocincla albipectus barakae (Jackson)

Turdinus barakae JACKSON, 1906, Bull. Brit. Ornith. Club, vol. 16, p. 90 (type locality: Kibera, Toro, Uganda).

Turdinus albipectus HARTERT, 1900, Novitates Zool., vol. 7, p. 48 (in part. Olinga–Beni). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 738 (in part. West of Beni); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 370.

Malacocincla albipectus GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 170 (Beni forest; Kampi-na-Mambuti).

Turdinus rufipennis albipectus CHAPIN, 1927, Bull. Amer. Mus. Nat. Hist., vol. 53, p. 478.

Illadopsis rufipennis barakae SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 361. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 106 (Poko; Panga; Kotili; Bondo Mabe; Mauda; Nava R.). PAKENHAM, 1936, Ibis, p. 263. JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 842.

SPECIMENS: Avakubi, two males, April 18, July 4; female, juvenile female, November 23. Penge, male, female, April 21; female, April 25. Ngayu, three males, July 23, 25. Babeyru, male, July 25.

ADULT FEMALE: Iris bright brown; maxilla blackish, mandible light gray; feet pale pinkish gray.

DISTRIBUTION: Lowland forest of the eastern Congo, in the Ituri, Lowa, and no doubt the Manyema districts, to the Budongo, Mabira, and other forests in Uganda, and Kakamega and Lerundo in western Kenya Colony. This is evidently the bird reported by Cave[1] from the Lotti Forest in the southern Sudan.

Judged from the number of specimens collected, this may be a more abundant bird in the Ituri forest and Uganda than *M. rufipennis*. It seemed even more terrestrial in habits. Despite the confusing evidence that I have given under *rufipennis*, I was convinced by my experience near Avakubi and Penge in April, 1914, that *M. albipectus* did give a series of short ascending whistles. Two adult males in breeding condition, followed up by their notes and shot, are *M. a. barakae*. One gave three syllables, the other four, and in the Semliki Forest I once heard a bird give five such short whistles in succession. They are introduced by one or two low chirps or clucks, audible only at close range. The whistles are quite disconnected and might be written "pŭh, pĕh, pé," the change in vowel suggesting the rise in pitch, and the consonant *p* the shortness of each syllable.

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[1] 1938, Sudan Notes and Records, vol. 21, p. 175.

These notes were heard most frequently in the early morning, during the months from April to June in the northern Ituri. Several males in full breeding condition were taken there at that season, but breeding evidently continues much longer, for in late November I secured an adult female with a fledgling. The plumage of the latter is still very rufous above, but the underparts are conspicuously whitish, with rufous tips on feathers of the chest. This juvenile female has the wing 71 mm. long, whereas young females of *rufipennis* have wings only 65 and 66 mm.

Another young bird of the present species was secured by Grauer about 90 kilometers west of Lake Edward, and in 1937 I collected four males and a female at Angumu. It appears likely to range north about to the Uelle River and south to the northern Kasai. I have sometimes wondered whether *M. albipectus* might be regarded as the eastern representative of *M. cleaveri*, but the difference in the color of their heads is considerable.

Six stomachs were examined. Small beetles and other insects were present always; insect eggs were noted twice; many termites, both workers and soldiers, had been eaten by one bird; two small caterpillars by another.

Malacocincla cleaveri batesi (Sharpe)

Turdinus batesi SHARPE, 1901, Bull. Brit. Ornith. Club, vol. 12, no. 82, p. 2 (type locality: Efulen, Cameroon; also from Congo R.).

Alethe batesi REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 749 (Congo).

Alethe cleaveri batesi GROTE, 1924, Jour. Ornith., p. 506 (Nola-Mbaiki).

DISTRIBUTION OF THE SPECIES: Liberia to the Cameroon, French Congo, and Fernando Po; south to the lower Congo River. *M. c. johnstoni* (Büttikofer), with fore neck and chest ashy gray, is known only from Liberia. *M. c. cleaveri* (Shelley), with more whitish chest, occupies the Gold Coast forest. *M. c. batesi* differs from the foregoing in having the superciliary stripe darker gray, flanks and under tail-coverts browner. Fernando Po has a still darker race, *M. c. poensis* Bannerman.

The range of *batesi* includes the lowland forests of the Cameroon and Gaboon, and no doubt the Belgian Mayombe, for Petit is said to have collected it near the lower Congo River. To the eastward it reaches the French Congo in the vicinity of Nola and should be looked for near Bangui.

Though evidently allied to *M. albipectus* and *rufipennis*,

this babbler differs in having a black crown. Its wings measure 69–82 mm., the larger birds being males; and metatarsi 26–29 mm. In the size of its feet and their pinkish color it seems more like *albipectus*.

According to Bates[1] this is the commonest species of its genus in the forested Cameroon, more easily trapped on the ground than shot. He once watched a singing male in thick, low, tree tops, toward 7 A.M., and noted that it spread its wings as it sang. The song was repeated monotonously, in a clear whistling tone, and consisted of five notes. The first was low, the last very high, and the first three were separated by distinct pauses.

Breeding seemed to go on through all seasons, and the nest was a loose pile of dead leaves with a few stems and rootlets, on or near the ground in the forest. The eggs, two in a set, were white or pinkish white, with small spots and larger irregular markings of dull maroon and dark purplish gray, often concentrated around the larger end. They measured about 23.5 by 17 mm.

Malacocincla puveli strenuipes (Bannerman)

Turdinus strenuipes BANNERMAN, 1920, Bull. Brit. Ornith. Club, vol. 41, p. 5 (type locality: Iju water-works, near Lagos, Nigeria).

Ptyrticus puveli strenuiceps SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 360 (Faradje). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 106.

Illadopsis puveli strenuipes BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 113.

SPECIMENS: Between Faradje and Aba, male, November 27; male, female, November 29.

ADULTS OF BOTH SEXES: Iris brown; maxilla blackish brown, mandible blue-gray; feet flesh color.

DISTRIBUTION OF THE SPECIES: From Portuguese Guinea to the Upper Uelle District of the northeastern Congo. *M. p. puveli* (Salvadori) is known from several localities in Portuguese Guinea and Sierra Leone. *M. p. strenuipes* has been collected in Southern Nigeria, in the Cameroon near the northern margin of the forest, and in a heavy patch of forest about midway between Faradje and Aba, near the village of Madrapili. This eastern race is a little less ruddy brown on the upperparts, with chest and flanks more heavily washed with olive brown, and tibial feathering browner.

[1] 1908, Ibis, pp. 119, 568; 1911, idem, p. 625.

Its wing measures 86–90 mm., tail 65–70, culmen to base 17–18, metatarsus 31–33.5, the minimum measurements being those of a female. The nominate race does not differ noticeably in size.

No doubt this babbler will be found here and there across the Ubangi-Shari and northern Congo in gallery forests a little to the north of the solid forest belt,[1] much the same habitat as that of *Ptyrticus turdinus*. While it seems intermediate in its dimensions and the size of feet between *Ptyrticus* and *Malacocincla albipectus*, I prefer to assign it to the genus *Malacocincla*.

We met with *M. p. strenuipes* in only one limited area of heavy forest, which was inhabited by chimpanzees, a number of true equatorial forest birds, and *Bycanistes s. subquadratus* and *Bubo lacteus*. The song of this babbler was one of the common bird notes there during the early morning. It consisted of six semi-musical syllables uttered in quick succession and repeated at short intervals as the maker perched in some low bush in the dense undergrowth. We heard these notes in early October and, coming back again in November, followed them down successfully. All three specimens were ready to breed, during the latter part of the rains.

Two had only insect remains in their stomachs, the third a single spider.

Ptyrticus turdinus turdinus Hartlaub

Ptyrticus turdinus HARTLAUB, 1883, Jour. Ornith., p. 425 (type locality: Tomaya, southeastern Bahr-el-Ghazal Province); 1887, Zool. Jahrb., vol. 2, p. 315, pl. 11, fig. 1. REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 675. ALEXANDER, 1908, Bull. Brit. Ornith. Club, vol. 23, p. 16 (Kibali R.). SCLATER AND M.-PRAED, 1918, Ibis, p. 695 (Yambio; Mt. Baginzi). BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 385 (northern Congo).

Ptyrticus turdinus turdinus BANNERMAN AND BATES, 1924, Ibis, p. 244. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 360 (Upper Uelle District). BOWEN, 1931, Catalogue of Sudan birds, vol. 2, p. 25. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 106.

SPECIMENS: Niangara, male, immature male, May 4. Dungu, male, female, immature female, February 23; female, June. Nzoro, male, female, August 7.

ADULTS OF BOTH SEXES: Iris rather bright, light brown; maxilla blackish with bluish gray tip, mandible entirely light blue-gray; feet pale pinkish gray or very pale flesh color.

[1] It has now been found by Dr. A. I. Good in the vicinity of Yaunde, Cameroon.

IMMATURE FEMALE: Iris very dark brownish gray; bill mainly brownish black, but dull yellowish green along edges of both mandibles and on base of lower; feet very pale flesh color.

DISTRIBUTION OF THE SPECIES: From Tibati in the Cameroon east to the southern Bahr-el-Ghazal and the Upper Uelle District; also in the southern Congo from the Lomami District to the Kibara Plateau. *P. t. turdinus* is rather widely distributed in the northeastern part of the range, while *P. t. harterti* Grote, brighter rufous above, has been taken only at Tibati and near the upper Kadei River, on the east Cameroon border. Both localities are north of the equatorial forest, not above 3000 feet. There seems to be no racial distinction in size. Three adult males of *P. t. turdinus* have wing 104–108 mm., tail 80–84.5, culmen to base 21.5–24, metatarsus 36–37. Three adult females are smaller: wing 93–97 mm., tail 68–70, culmen to base 22–23, metatarsus 32–35. The southern race, *P. t. upembae*, is smaller than the foregoing, and has wing only 88–99 mm., tail 66–77, culmen to base 22, and metatarsus 32–34. In adult plumage it is less rufous than the nominate race, more brownish on both the upperparts and the spots on the fore neck. Young examples are, however, distinctly rufous.

Despite its thrush-like appearance, *Ptyrticus* is closely allied to *Malacocincla*, only larger and more stoutly built. G. L. Bates and A. I. Good both had the birds caught near Tibati in native snares baited with termites.

In the Upper Uelle *P. t. turdinus* is a very wary bird roaming in pairs or small parties through the dense undergrowth of gallery forests or other small isolated patches of damp woods, where *Pyrrhurus scandens* also dwells. The habits of the two birds are somewhat alike, but *Ptyrticus* is more elusive, so care must be taken to avoid confusing their notes. At break of day the loud, disconnected whistles of *Ptyrticus* sound like "whiu-yu" or "kiu-yu" and are delivered in two or three different keys. They are characteristic, though seldom heard during the middle of the day, and may be repeated toward sundown. Only the males give these loud notes, but low clucking calls may be heard near by which would be ascribed to the other sex.

In addition to the places where specimens were collected, we heard this bird near Madrapili's, between Faradje and Aba. It seemed to call loudly at almost all seasons, and the notes reminded

me slightly of those of orioles, though even louder and not so melodious. Adults in breeding condition were taken in June and August, an immature bird in February, so nesting must go on during the rainy season, from June to November at least.

In the seven stomachs examined, insect remains were invariably present, including two green caterpillars, two grasshoppers, four winged termites, and many others not identified. In one case there were also bones of a tiny frog.

Ptyrticus turdinus upembae Verheyen

Ptyrticus turdinus upembae VERHEYEN, 1951, Bull. Inst. Roy. Sci. Nat. Belgique, vol. 27, no. 50, p. 2 (type locality: Kabwe, 1400 m., on Muyé R., Upemba National Park).

DISTRIBUTION: From Kabinda in the Lomami District to Kasaji in the Lulua District and eastward to the Kibara Plateau. Within the past five years this interesting race has been collected by Father Georges Windmolders at Kabinda, by Verheyen in the Upemba National Park, and by the Rev. W. S. Fisher at Kasaji. It seems to be completely isolated from the birds living north of the Equator.

Verheyen tells me that he found this babbler locally distributed in the Upemba Park at altitudes between 1400 and 1600 meters, living in thickets and light forest around the edges of the Kibara Plateau. In behavior it probably resembles the northern races, and it is certainly not restricted to montane areas.

KEY TO THE SPECIES OF *Lioptilus* IN THE CONGO

Crown black, wing 98–108 mm. long ..... *L. rufocinctus*
Crown chestnut, wing 93–97 mm. long ..... *L. chapini*

Lioptilus rufocinctus Rothschild

Lioptilus rufocinctus ROTHSCHILD, 1908, Bull. Brit. Ornith. Club, vol. 23, p. 6 (type locality: Rugege Forest, southeast of L. Kivu). HARTERT, 1909, Novitates Zool., vol. 16, p. 334, pl. 15, fig. 3; 1920, idem, vol. 27, p. 483. REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 371.

Lioptilornis rufocinctus SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 367.

Lioptilornis rufocincta BERLIOZ, 1936, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 8, p. 331 ("Lugégé" in Ruanda).

Phyllanthus rufocinctus VERHEYEN, 1947, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 23, no. 9, pp. 2, 3 (Mt. Kabobo).

DISTRIBUTION: Known only from the Rugege Forest in south-

western Ruanda, Mt. Kabobo north of Albertville, and Mt. Kandashomwa west of the Ruzizi Valley.[1] The Rugege Forest must be around 5500–7000 feet above sea level, and there Rudolf Grauer secured five specimens in 1907. He noted that they were found in tall trees. During 1935 Sedyn collected one more in the same neighborhood for the Paris Museum.

Two adults were taken by Allan L. Moses, who accompanied Rockefeller and Murphy, on Mt. Kandashomwa at 9000 feet in July, 1929. They were members of a party of six in a dense thicket near a stream in bamboo forest, giving a call that re-

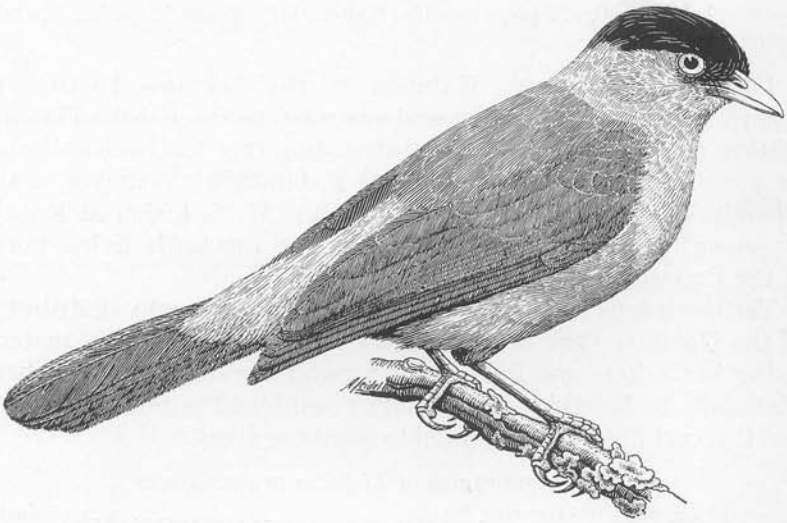

FIG. 12. The rufous-collared babbler, *Lioptilus rufocinctus*.

minded him of the "chuck" of the American rusty blackbird. Brédo's example from Kabobo extends the range southward.

Adults of both sexes have forehead, lores, and crown black; ear-coverts, throat, fore neck, a ring around neck, and upper and lower tail-coverts bright rufous. The remaining upper surface is dark gray-brown, wings blackish brown, rectrices brownish black. Breast, flanks, and abdomen are grayish brown, more or less washed with rufous on middle of breast; under wing-coverts partially rufous. Iris yellowish white or pale straw yellow; bill

[1] A. Prigogine has recently taken others near Mt. Muhi.

whitish brown, dusky about nostrils; feet light gray. Wing 99–108 mm., tail 75.5–86, culmen to base 17–20, metatarsus 30–31.

This babbler is plainly related to *L. nigricapillus* (Vieillot) of the forests of eastern Transvaal, Natal, and eastern Cape Province, though much larger, with conspicuous areas of rufous. Its nearest relative is *L. chapini* of the northeastern Congo forest. *Parophasma galinieri* (Guérin) of the highlands of Abyssinia is a gray bird with only the under tail-coverts rufous and may also belong in the genus *Lioptilus*.

Lioptilus chapini (Schouteden)

Kupeornis chapini SCHOUTEDEN, 1949, Rev. Zool. Bot. Africaines, vol. 42, p. 344 (type locality: Mongbwalu, 1400 m., eastern Ituri District, Belgian Congo).

DISTRIBUTION: Eastern edge of the Upper Congo forest, at elevations of 3900 to 4600 feet, from the region of Kilo south to that of Lutunguru, west of Lake Edward.

This bird differs from *rufocinctus* in its somewhat smaller size and duller coloration, the crown being dark chestnut instead of black. The wings of *L. chapini* measure 93–97 mm., the tail 66–71 mm. Both the above species are clearly congeneric, whereas *Kupeornis gilberti* Serle of the Cameroon highlands is a much larger bird with heavier feet and a distinctive white throat patch extending up to the lores and ear-coverts. Even if the genus *Kupeornis* is accepted as valid, it will not include *chapini*.

In haunts and behavior *L. chapini* is probably much like *rufocinctus*. Three specimens were secured by Madame J. Lepersonne at Mongbwalu in 1939, and two others more recently by A. Prigogine at Loiki, 1200 meters, northwest of Lutunguru.

Phyllanthus atripennis bohndorffi (Sharpe)

Crateropus bohndorffi SHARPE, 1884, Jour. Linnean Soc. London, zool., p. 422 (type locality: Sassa, northern Uelle District).

Crateropus atripennis bohndorffi NEUMANN, 1904, Jour. Ornith., p. 554 (Niam-Niam).

Phyllanthus bohndorffi REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 668 (Sassa). CHAPIN, 1923, Auk, p. 333 (Banalia). SCHOUTEDEN, 1929, Bull. Cercle Zool. Congolais, vol. 5, p. 75 (Buta).

Phyllanthus czarnikowi O.-GRANT, 1907, Bull. Brit. Ornith. Club, vol. 19, p. 40 (type locality: Mawambi, Ituri forest); 1910, Trans. Zool. Soc. London, vol. 19, p. 378, pl. 17, fig. 1 (Uelle R.). LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 30. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 293 (Moera). BANNERMAN, 1920, Rev. Zool. Africaine, vol. 7, p. 291 (Poko); 1922, idem, vol. 9, p. 382 (Surunga).

Phyilanthus czarnikowi SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 275 (Beni; Beni-Mawambi).

Phyllanthus atripennis bohndorffi SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 357. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 565 (Saidi in Ituri). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 105 (Panga); 1940, Bull. Cercle Zool. Congolais, vol. 16, p. 72 (Angumu).

Phyllanthus atripennis SCHOUTEDEN, 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 86.

SPECIMENS: Banalia, male, two immature males, September 21. Avakubi, three males, January 15, September 24, December 21; immature male, November 16; female, January 24. Bafwabaka, juvenile, January 3. Gamangui, male, February 7. Medje, immature male, August 29; female, January 24; juvenile female, September 10. Niangara, female, December 3.

ADULTS OF BOTH SEXES: Iris brownish red to dark red; bill pale yellowish green; feet light grayish green.

IMMATURE: Iris dark brown, rim of eyelids greenish yellow; bill greenish white, deep yellow along cutting edges toward base; feet pale grayish green.

DISTRIBUTION OF THE SPECIES: Portuguese Guinea and possibly the Gambia, east to the Semliki Valley. *P. a. atripennis* (Swainson) is very dark in color, blackish on the back, with whole head and fore neck gray and scaly, save for the black lores. It occupies the western half of Upper Guinea, including Liberia. *P. a. haynesi* (Sharpe), which replaces it on the Gold Coast, is more maroon on the body, the gray of the throat is more restricted, the crown is entirely black, and supercilium and ear-coverts are gray.

There is considerable variation in throat color. Some specimens even from the Gold Coast have chestnut feathering running up the middle of the throat, and two from the Ilorin Province of Nigeria and Nkongsamba in Cameroon are brighter maroon on back and chest than Gold Coast birds. Except in color of the crown these two birds begin to resemble *P. a. bohndorffi*.

The eastern limit of *haynesi* cannot yet be defined. Specimens from the western Cameroon have been referred to that race, and it is strange that no record has been published from the central Cameroon.

Phyllanthus atripennis bohndorffi differs from *haynesi* in having the whole crown scaly gray and the throat entirely maroon.

It occupies the southern Uelle, Aruwimi, and Ituri districts, ranging westward perhaps to the bend of the Ubangi and eastward to the Semliki Valley and Angumu. In the southern half of the Upper Congo forest it has not been reported.

Bohndorff's chestnut babbler is a most difficult bird to find in the forest, yet its young seem very apt to fall into the hands of natives. Long experience in the Ituri forest taught me that it skulks in the densest tangles, especially in old secondary growth. Parties of a half dozen are more frequent than pairs, and they give hoarse scolding notes which may rise with excitement to a loud chatter. These reminded me of *Turdoides tenebrosus*. When thoroughly alarmed, as by a shot, the whole party becomes silent and vanishes.

The breeding season must extend through the whole year. In the Ituri we took breeding adults in January, February, and September, and young in juvenal plumage in dry and wet months alike. Near Beni in October, 1926, my native hunter brought me an adult male of this babbler and a very rufous fledgling of *Clamator cafer*. He was convinced that the cuckoo was the young of the babbler, for he had shot them together from a party of *Phyllanthus* which seemed to include another young bird. In the savanna regions of Africa *Clamator cafer* parasitizes *Turdoides;* in the eastern Congo forest, where the cuckoo is rare, it would seem to recognize this near ally of its usual host. The nest and eggs of *Phyllanthus atripennis* are still unknown.

In the 12 stomachs examined I found insect remains in every case. Often they were small beetles, but included also two roaches, a grasshopper, two sparsely haired caterpillars, and a pupa still enclosed in a thin cocoon. There were also a very small snail with spiral shell, pieces of two small round millipedes, bones of a tiny frog, and in two stomachs a few seeds, possibly from fruit.

[*Phyllanthus atripennis haynesi* (Sharpe)]

Crateropus haynesi SHARPE, 1871, Ibis, p. 415 (type locality: Accra, Gold Coast).

Crateropus atripennis OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127 (Ubangi).

Phyllanthus haynesi REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 668. BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 381.

Phyllantus atripennis haynesi BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 71 (Bangui).

The black-crowned *haynesi* was long believed to have been collected on the Ubangi River by Dybowski. Quite recently Bouet, in reviewing Dybowski's material, found that a female of this species had been taken at Bangui on November 24, 1891, but since the specimen is no longer in existence, its subspecific identification cannot be clarified.

KEY TO THE SPECIES OF *Turdoides* IN THE CONGO

1. Feathers of upper breast with pointed tips, which are whiter than remainder of feather 2
   Feathers of upper breast with rounded tips, usually margined with gray so as to produce a scaly pattern 3
2. Points on breast feathers always small, chin and malar region grayish white, iris yellow ..... *T. plebejus*
   Points on breast feathers usually more prominent, chin and malar region gray or blackish, iris more or less orange or red ..... *T. jardinei*
3. Rump with a whitish patch ..... *T. leucopygius*
   Rump gray or brown, rather like the back 4
4. Crown blackish, ear-coverts more or less sooty, underparts light gray brown, dark streaks on lower throat ..... *T. reinwardii*
   Crown brown or gray, often with light scaly edgings 5
5. General color brownish gray, fore neck with faint scaly pattern, bases of body feathers gray ..... *T. melanops*
   General color deeper brown, fore neck more scaly, its feathers with blackish centers, bases of body feathers white ..... *T. tenebrosus*

Turdoides plebejus cinereus (Heuglin)

Crateropus cinereus HEUGLIN, 1856, Sitzber. Akad. Wiss. Wien, vol. 19, p. 282 (type locality: White Nile, south of latitude 6° N.); 1862, Jour. Ornith., p. 300 (upper White Nile, latitudes 5°–10° N.). SALVADORI, 1911, Ann. Mus. Civ. Genova, ser. 3, vol. 5, p. 449 (Uelle).

Crateropus plebejus HARTLAUB, 1882, Abhandl. Naturwiss. Ver. Bremen, vol. 8, p. 191 (Wandi).

Crateropus plebeius cinereus REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 658 (Rimo). SCLATER AND M.-PRAED, 1918, Ibis, p. 694 (Yambio; Meridi; Yei).

Crateropus jardinei hypobrunneus REICHENOW, 1915, Jour. Ornith., p. 129 (type locality: Amadi, upper Uelle R., Belgian Congo).

Crateropus jardinei hypostictus SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 203 (Tunguru).

Turdoides plebeja cinerea SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 351. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 105 (Mahagi[1] Port; Faradje; Mauda; Buta). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 565 (Ekibondo). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 833 (Butiaba). MACDONALD, 1940, Bull. Brit. Ornith. Club, vol. 60, pp. 72–73.

SPECIMENS: Dungu, male, July 1. Faradje, three males, February 5, September 12; juvenile male, December 10; female, February 20. Garamba, juvenile male, juvenile female, March 14.

ADULTS OF BOTH SEXES: Iris rather bright yellow, bill black, feet dusky.

NEWLY FLEDGED YOUNG: Iris dark grayish brown, bill black, feet dark brownish.

DISTRIBUTION OF THE SPECIES: Senegal and Sierra Leone eastward to Kordofan, southern Abyssinia, Laikipia, and Eldama Ravine in Kenya Colony. *T. p. plebejus* (Cretzschmar), with wings 101–114 mm., is a large, light-colored race extending from Kordofan to Lake Chad and probably Northern Nigeria. *T. p. cinereus*, smaller and more brownish throughout, with wings 92–104 mm., replaces the nominate race from the southern Bahr-el-Ghazal and Uelle to southern Abyssinia and western Kenya Colony.

Turdoides plebejus gularis (Reichenow) of the Cameroon grasslands and western Ubangi-Shari is very like *cinereus*, but has breast feathers a little more margined with pale gray in addition to the white points, chin and malar region perhaps a little more pale gray. It seems that *uamensis* and *elberti* must be synonyms of *gularis*.

Farther west the crown and fore neck become darker, the pattern of fore neck more squamate, facial region and chin forming a more definite gray area. These are the characters of *T. p. platycircus* (Swainson), which ranges from Ilorin, Nigeria, to Sierra Leone and Senegal, unless it can be shown that birds from western Nigeria to the Gold Coast are especially pale about the face and deserve recognition as *togoensis* Neumann.

Turdoides plebejus cinereus is the common gray-brown babbler in the grasslands of the Uelle District, especially north of the Uelle River, though it has been taken even at Buta. It occurs also at Mahagi Port but is not yet known from the vicinity of Kasenyi.

The haunts of this babbler are thick bushes in the upland savanna. In the dry season it is found in pairs, but during the rest of the year in parties up to seven or eight, the members of which give their calls in chorus, especially in the early morning and late afternoon. The harsh reiterated notes may be described as a sort of "chuck," repeated for three or four seconds, giving the effect of dry, mirthless laughter.

Fledglings were brought to us in December, January, and March. A breeding male was secured in February, whereas adults taken in July and September had gonads in the quiescent state. This would indicate nesting in the dry season. In Darfur and Northern Nigeria *T. p. plebejus* has been found to nest from May to September,[1] but in the southerly portion of Nigeria representatives of this species breed in December, January, and April. So it would seem that there too in the rainier region the dry months are preferred for nesting.

Nests of nominate *plebejus* are cups made of straw, sticks, leaves, and rootlets, placed in small trees or thick bushes, 4 to 14 feet above the ground. Eggs are two, three, or even four, deep turquoise blue, or occasionally gray-blue, pale pinkish lilac, or even bright salmon pink. Measurements are about 26–27 by 19 mm. This babbler is believed to be the principal fosterer of *Clamator cafer* in the Sudan, as its race *cinereus* probably is in the north Congo grasslands.

The four stomachs of *cinereus* that I examined contained only the remains of insects.

[*Turdoides plebejus gularis* (Reichenow)]

Crateropus plebeius gularis REICHENOW, 1910, Ornith. Monatsber., p. 7 (type locality: Mba, southern Adamawa, Cameroon).

Crateropus hypostictus OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127.

Turdoides plebeja uamensis BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 71 (upper Kemo R.)

This race was described as darker than nominate *plebejus*, with more scaly pattern on fore neck. The type locality is just southwest of the Genderu Mountains. We have one of Bates's specimens from 50 miles west of Ngaundere which is almost a topotype, and it is even darker than examples in the Philadelphia Academy from Fort Sibut and Batangafo in the Ubangi-Shari District. Therefore the validity of *uamensis* Reichenow[2] cannot be admitted, and *elberti* Reichenow[3] must also be a synonym. *T. p. gularis* is certain to reach Congo territory in grasslands near the great bend of the Ubangi River, but it is not easily distinguished from *T. p. cinereus*.

[1] Lynes, 1925, Ibis, p. 119. Shuel, 1938, idem, pp. 472, 473, pl. 9, figs. 18, 20. Serle, 1938, Oologists' Rec., vol. 18, p. 12; 1940, Ibis, pp. 3, 4.

[2] 1921, Jour. Ornith., p. 48 (Bozum, French Equatorial Africa).

[3] 1921, Jour. Ornith., p. 461 (Uam district).

Turdoides jardinei emini (Neumann)

Crateropus plebeius emini NEUMANN, 1904, Jour. Ornith., p. 549 (type locality: Wala R., Unyamwezi, East Africa). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 274 (Kisaka; Urundi).

Crateropus jardinii DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, p. 148 (L. Tanganyika).

Crateropus kirki HARTERT, 1900, Novitates Zool., vol. 7, p. 49 (Karimi in Usongora). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 377 (Mokia, southeast of Ruwenzori).

Crateropus plebeius DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Karema).

Crateropus jardinei hypostictus REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 660; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 366 (Usumbura). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 293 (Mission St. Gustave).

Crateropus plebejus emini NEUMANN, 1906, Ornith. Monatsber., p. 145.

Turdoides plebejus emini GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 166 (Masidongo).

Turdoides jardinei emini SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 352. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 318 (Ngoma); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 96 (Rwindi); 1943, Rev. Zool. Bot. Africaines, vol. 37, p. 270 (eastern Ruzizi Valley).

DISTRIBUTION OF THE SPECIES: From Natal north to the Loango Coast, Kasai River, the base of Ruwenzori, and Kenya Colony. This group of races is closely allied to *T. plebejus*, possibly even conspecific. *T. j. jardinei* (A. Smith) is a large form, wings 103–117 mm., with long white points on throat and breast feathers. It ranges from the Transvaal to Ngamiland, western Rhodesia, and southern Angola. The birds of Natal have been separated as *T. j. natalensis* Roberts because of slightly smaller size. *T. j. kirki* (Sharpe) is even smaller, with wings 93–106 mm., and flanks usually more buffy. It occupies the lower Zambesi Valley, Nyasaland, and the eastern coastlands from Beira to Kenya Colony.

Turdoides jardinei emini of the interior of East Africa, from Tabora to the vicinity of Lake Naivasha, the west shore of Lake Victoria, and the base of Ruwenzori, is deeper in color and slightly larger than *kirki*, having wings 98–111 mm. It has rather well-developed white points on the chest feathers. *T. j. tanganjicae*, of the region just west of Lake Tanganyika, differs from *emini* by its black crown and ear region, while its wings are 97–116 mm. long. *T. j. hypostictus* of northern Angola and the southwestern

Congo is again gray headed, small, with wings 95–104 mm., and the light tips to the breast feathers are greatly reduced. This race shows the greatest resemblance to *T. plebejus cinereus*, but it is *emini* that has been said to occur side by side with *cinereus* at Kisumu in the Kavirondo District. There is no proof of complete intergradation. The iris of *emini* in both sexes is orange, usually changing to yellow on its inner margin; that of *cinereus* is plain yellow. In behavior and voice the two birds are similar.

Within our limits *T. j. emini* is known from the eastern and northern shores of Lake Tanganyika through Ruanda-Urundi and the Kivu to the upper Semliki Valley. Parties of five to seven are the rule, and from time to time they chatter noisily. I have found them from Luvundi on the northeast shore of Lake Tanganyika up to 5000 feet near Ngoma and 7600 feet at the base of the escarpment near Behungi in British Ruanda, but never of course in forest. *T. melanops sharpei* often occurs in the same places.

On the northwest shore of Tanganyika Grauer collected specimens of *emini* as well as of the black-headed *tanganjicae*, and a few showing intergradation. These two races meet in the vicinity of Uvira and Baraka.

The nesting of *emini* seems not to have been observed, but the South African *jardinei* is known to build a bulky cup of twigs and grasses in thick bushes or small trees, and to lay three or four uniform greenish blue eggs. The eggs of *Clamator cafer*, similar in color, are frequently deposited in these nests. The breeding season of *kirki* in Nyasaland is from October to April, but that of *emini* near the Equator may not be so clearly defined.

Turdoides jardinei tanganjicae (Reichenow)

Crateropus tanganjicae REICHENOW, 1886, Jour. Ornith., p. 115, pl. 3 (type locality: Mpala, southwest shore of L. Tanganyika); 1887, idem, p. 309 (Kibondo); 1905, Die Vögel Afrikas, vol. 3, p. 663; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 366. MATSCHIE, 1887, Jour. Ornith., p. 155 (Lufuku R.; Manda on L. Tanganyika; Katapena). O.-GRANT, 1908, Ibis, p. 301 (northwest of L. Tanganyika). NEAVE, 1910, Ibis, p. 136 (Kambove; upper Lualaba R.; Bunkeya R.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 274 (Uvira; Baraka).

Crateropus tanganikae DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, p. 148 (L. Tanganyika).

Crateropus jardinei SCHALOW, 1886, Jour. Ornith., p. 412 (Mpala); 1887, idem, p. 243.

Crateropus kirki SCHALOW, 1887, Jour. Ornith., p. 243.

Crateropus plebeius tanganjicae NEUMANN, 1904, Jour. Ornith., p. 549.

Crateropus tanganyicae DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 293 (Lubila; Manakwa; Kabemba; Dogodo R.; Baudouinville).

Crateropus carruthersi O.-GRANT, 1907, Bull. Brit. Ornith. Club, vol. 19, p. 106 (type locality: Upper Congo, east of Kasongo, 2500 feet); 1908, Ibis, p. 301. REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 367.

Turdoides jardinei tanganjicae SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 352. VERHEYEN, 1940, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 16, no. 2, p. 4 (Kanzenze); 1941, idem, vol. 17, no. 23, p. 11 (Pweto). A. W. VINCENT, 1946, Ibis, p. 58 (Elisabethville); 1947, idem, p. 164 (country bordering L. Mweru).

DISTRIBUTION: From the northwest shore of Lake Tanganyika near Uvira and the grasslands of the Manyema south to the Mambwe district south of Tanganyika and to the Upper Katanga. To the west it reaches the Lomami River, where one was collected by Ghesquière. Intergradation with *emini* is shown by examples from the vicinity of Uvira, and with *kirki* by others from near Elisabethville. Lake Tanganyika is the principal barrier between this black-headed race and *emini*.

Neave reported this babbler as common in the Katanga, going in small parties. The iris has usually been noted as scarlet with an inner ring of orange yellow; Lynes and Vincent once found these colors reversed. Böhm, who discovered it at Mpala, collected a male in breeding condition there on July 16, and found a nest with several young in a low acacia at Manda on August 20. He also noted one egg as taken at Katapena on March 10. Rockefeller and Murphy found the bird common at Moba and at Lake Suzi in southern Marungu, haunting thickets. Raven secured a specimen at Kongolo on the Lualaba.

Near Elisabethville, on April 19, Alfred Vincent found a nest of this babbler with five eggs, of which two had been laid there by *Clamator cafer*. The babbler's eggs were Cambridge blue, somewhat glossy, averaging 24.4 by 17.3 mm. The cuckoo eggs were of very similar color, but slightly larger, 26 by 20.4 and 26.5 by 20.3 mm. The nest was placed in a tangle of creepers around a dead stump, about 5 feet up, and surrounded by high grass near a stream.

Turdoides jardinei hypostictus (Cabanis and Reichenow)

Crateropus hypostictus CABANIS AND REICHENOW, 1877, Jour. Ornith., pp. 25, 103 (type locality: Loango Coast).

Crateropus jardinei SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 333 (Basongo; Kwamouth).

Crateropus jardinei hypostictus SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 396.

Turdoides jardinei hyposticta SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 352 (northern Angola).

SPECIMENS: Boma, two males, January 11; two females, January 8, December 31.

ADULTS OF BOTH SEXES: Iris scarlet on outside, shading to bright yellow on inner edge; bill black; feet dark gray.

DISTRIBUTION: From the Loango Coast, Middle Congo, and Kasai River south to the northern Benguella Province of Angola. It is remarkable that none seems to have been taken near the Lulua River in the Kasai.

This is the race of *T. jardinei* showing the greatest similarity to *T. plebejus cinereus*, though completely isolated from it by the equatorial forest. The light tips of the chest feathers are only a little better developed in *hypostictus*, but its iris is scarlet exteriorly, instead of wholly yellow.

About Boma in the Lower Congo these babblers are not uncommon, skulking in parties of three to six among bushes and trees in hollows near watercourses. They have hoarse cawing, chattering, and whining notes, but these seemed less loud than the calls of *T. plebejus cinereus* of the Uelle.

Our specimens of *hypostictus* taken at Boma during a rather rainy part of the year were all in non-breeding condition. Of four stomachs examined, three contained fibers from palm nuts as well as insect remains, the fourth held only small insects.

Turdoides melanops sharpei (Reichenow)

Crateropus sharpei REICHENOW, 1891, Jour. Ornith., p. 432 (type locality: Kakoma, Tanganyika Territory). NEUMANN, 1904, Jour. Ornith., p. 551. O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 377 (Mokia). SALVADORI, 1914, Ann. Mus. Zool. Napoli, new ser., vol. 4, no. 10, p. 28 (Ruanda).

Crateropus melanops DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, p. 148 (L. Tanganyika).

Crateropus grisescens REICHENOW, 1908, Ornith. Monatsber. p. 47 (type locality: Nyawatura, near Kesimbili, Kagera R.).

Crateropus melanops grisescens REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 366 (Mpororo).

Crateropus melanops sharpei REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Africa Exped., vol. 3, p. 366 (L. Bolero; Kisenyi). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 274 (Kisaka; Kisenyi–Rutshuru). LÖNN-

BERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 30 (Kabare; Kasindi; Rutshuru) SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 293 (old Mission St. Gustave; foot of Mt. Kishasha; Beni).

Turdoides melanops sharpei GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 166 (Mt. Muhavura, 2200 m.; Ngoma; Masidongo). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 353. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 318 (Lulenga; Kibati); 1933, idem, vol. 22, p. 376 (Kisenyi–Ruhengere); 1935, idem, vol. 27, p. 402 (Gabiro); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 96 (Bitashimwa; Munagana; Burambi; Nyabirehe, 2400 m.); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 337 (Kibingo; Bimba); 1943, idem, vol. 37, p. 270.

Turdoides melanops grisescens VERHEYEN, 1947, Exploration du Parc National de la Kagera, Mission Frechkop, fasc. 2, Oiseaux, p. 11 (Gabiro).

DISTRIBUTION OF THE SPECIES: Northern Damaraland to the Mossamedes Province of Angola, also from the eastern shore of Lake Tanganyika north to Uganda and eastward to the base of Mt. Kenya. *T. m. melanops* (Hartlaub) occupies a detached area in southwestern Africa and is browner on the body, less spotted on throat, and longer billed than the eastern races. Its wing measures 115–123 mm., tail 118–125 mm. *T. m. sharpei* is a very distinct race, much more grayish, with wings usually 104–116 mm., tails 100–114 mm. After comparing a fair series of birds from Kenya Colony with many from Uganda, the eastern Congo, and the country west of Lake Victoria, I can see no justification for admitting *clamosus* as a Kenya Colony race. There is no real difference in color or size, and a single example from Itura in Tanganyika Territory has the wing 120 mm., tail 114 mm. The iris of *sharpei* is white, sometimes with a slight tinge of cream, while that of *T. m. melanops* is straw yellow to lemon chrome.

Turdoides melanops vepres Meinertzhagen[1] is described as distinctly darker above and on breast than other East African birds, but not larger. It seems to be restricted to a small area at the base of Mt. Kenya.

The range of *sharpei* thus extends from the Tabora district of Tanganyika Territory to the Rift Valley near Naivasha, to Kavirondo, the base of Mt. Elgon, and Budongo in Uganda. Within our limits Sharpe's babbler occurs in all the open country from the western shore of Lake Tanganyika and Ruanda-Urundi

[1] 1937, Bull. Brit. Ornith. Club, vol. 57, p. 69 (Nanyuki, Kenya Colony).

to the Rutshuru Valley, the southern base of Ruwenzori, and Kasenyi on the southwest side of Lake Albert. It sometimes ascends into the highlands to a level of 7900 feet in places without forest.

In much of this area, especially in plains and acacia woods around Lake Edward, it is a common bird, generally encountered in small noisy parties of four or five, doubtless one family. The call note is a nasal "pă-pă-pă. . ." which may change over to a chatter of much the same petulant quality. Another loud note is a hoarse "whă-ŭ," likewise nasalized. Mistrustful of man, the birds take refuge in thickets or elephant grass, but now and then alight for a moment in some taller tree. Their food consists mainly of insects, but in one stomach I found also the scales and tail of a small lizard, as well as four small fruits.

Near the Equator breeding is likely at both rainy periods of the year. Nests found in Nandi and near Entebbe are described by Jackson as rough structures of roots and creeper stems lined with finer materials of similar nature, placed in thick bushes. The eggs are uniform dark blue.

Turdoides tenebrosus (Hartlaub)

Crateropus tenebrosus HARTLAUB, 1883, Jour. Ornith., p. 425 (type locality: Kudurma, southeast Bahr-el-Ghazal Province); 1887, Zool. Jahrb., p. 313, pl. 12. SCLATER AND M.-PRAED, 1918, Ibis, p. 695 (Mt. Baginzi). HARTERT, 1920, Novitates Zool., vol. 27, p. 486. CHAPIN, 1927, Bull. Amer. Mus. Nat. Hist., vol. 53, p. 478. EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, pp. 14, 64 (Tunguru and Nyamsansi on L. Albert).

Crateropus melanops tenebrosus NEUMANN, 1904, Jour. Ornith., p. 552.

Crateropus tenebrosus claudei BANNERMAN, 1919, Bull. Brit. Ornith. Club, vol. 39, p. 99 (type locality: Poko, Uelle District).

Crateropus sp. SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 3, p. 258 (Tomaya).

Turdoides tenebrosa claudei SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 353. SCHOUTEDEN, 1936, Ann. Mus. Congo., zool., ser. 4, vol. 1, fasc. 2, p. 105.

Turdoides tenebrosa tenebrosa BOWEN, 1931, Catalogue of Sudan birds, vol. 2, p. 25. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 105 (Mahagi Port).

SPECIMENS: Nzoro, female, August 3. Faradje, three males, August 18, November 28, December 22; two females, December 6, 18; immature female, May 6.

ADULTS OF BOTH SEXES: Iris yellowish white; bill black; feet dull dark brown.

IMMATURE: Iris pale grayish yellow.

DISTRIBUTION: From Poko in the Uelle District and the southern border of the Bahr-el-Ghazal Province eastward across the Lado district to Gofa in southern Abyssinia. Examination of the type of *claudei* in the British Museum convinced me that it is not a valid race.

This dark brown babbler with scaly fore neck is not uncommon about Faradje in the Upper Uelle. Schubotz collected a male at Redjaf for the Berlin Museum, Butler reported the species as common at Kajo Kaji near the Bahr-el-Jebel, and Schouteden found it at Mahagi Port. While showing some resemblance to *T. melanops*, it seems specifically distinct and is possibly allied to *T. reinwardii*.

Unlike *T. plebejus cinereus* and *T. melanops sharpei*, this darker-colored babbler is of very wary nature, hiding in pairs or small companies in the undergrowth of woods near water. Its presence is betrayed by an occasional hoarse call, "chow!," but it is seen only with difficulty. From time to time the males give louder, more protracted sounds, somewhat like a nasal "what-cow," repeated a number of times.

A laying female was taken in December, and other birds taken near the same season were possibly breeding. But a male in August also showed some enlargement of the gonads. The immature bird in May was molting its remiges and must have been several months old.

Five out of six stomachs held the remains of insects, including a white beetle larva, and one bird had also eaten a small snail. The sixth stomach contained fruit and a small millipede.

Turdoides reinwardii stictilaema (Alexander)

Crateropus stictilaema ALEXANDER, 1901, Bull. Brit. Ornith. Club, vol. 12, p. 10 (type locality: Volta River, West Africa).

Turdoides reinwardii houyi SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 354 (Upper Shari district).

DISTRIBUTION OF THE SPECIES: Gambia, and perhaps Senegal, east to the northern Congo. *T. r. reinwardii* (Swainson), found from the Gambia to Sierra Leone, has crown, cheeks, and nape blackish, throat whitish. In *T. r. stictilaema* the cheeks are more grayish, the black of crown changes over to brown on the nape, and the throat is grayish with dusky streaks or spots. The race

houyi, described from Goré in the Ubangi-Shari District, appears not to be valid. So the range of *stictilaema* extends from the Gold Coast Colony across Nigeria, the Cameroon, and Ubangi-Shari to the northern Congo.

Here it is known only from a pair collected by Schubotz at Yakoma in May, 1911, for the Frankfurt Museum. Their crowns are distinctly darker than that of a male collected by Houy at Goré. Inasmuch as the species *reinwardii* and *tenebrosus* agree in general proportions, the creamy white iris, and in having much of the body plumage whitish at the base, it will be interesting to learn more about members of the group occurring between Yakoma and Poko.

According to Hutson and other observers, this black-capped babbler is found in small parties in thickets and fringing belts along streams, feeding on or close to the ground. In the Plateau Province of Nigeria Hutson discovered a nest at the beginning of December in a narrow belt of fringing forest. Placed in a small oil palm, it was cup-shaped and built mainly of leaves with a few rootlets as lining. The two eggs were hedge-sparrow blue, rather pointed, and 22 mm. long.

Turdoides leucopygius hartlaubii (Bocage)

Crateropus hartlaubii BOCAGE, 1868, Jor. Sci. Nat. Lisboa, vol. 5, p. 48 (type locality: Huilla, Mossamedes).

Crateropus hartlaubi DUBOIS, 1886, Bull. Mus. Roy. Hist. Belgique, vol. 4, p. 148 (L. Tanganyika); 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Pweto; Mommpara). NEAVE, 1910, Ibis, p. 136 (Bunkeya R.). O.-GRANT, 1908, Ibis, p. 302 (northwest of L. Tanganyika). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 366 (Usumbura). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 275 (Baraka; Ruzizi Valley). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 293 (Bigoisagua; Luvungi; Baudouinville).

Crateropus SCHALOW, 1886, Jour. Ornith., p. 421 (in part. Marungu; Luvua R.).

Turdoides melanops ater FRIEDMANN, 1927, Proc. New England Zool. Club, vol. 10, p. 11 (type locality: Kamaniola, Ruzizi Valley).

Turdoides hartlaubi ater BANGS, 1930, Bull. Mus. Comp. Zool., vol. 70, p. 305. FRIEDMANN, 1930, The African Republic of Liberia and the Belgian Congo, vol. 2, p. 761.

Turdoides leucopygia hartlaubii SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 354. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 93 (L. Kivu).

Turdoides leucopygia hartlaubi SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 318 (Lulenga; Usumbura); 1935, idem, vol. 27, p. 402. VERHEYEN,

1941, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 17, no. 23, p. 11 (Musosa). WHITE, 1946, Ibis, p. 508 (Congo border near Mwinilunga).

Turdoides hartlaubi SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 97; 1943, Rev. Zool. Bot. Africaines, vol. 37, p. 270.

DISTRIBUTION OF THE SPECIES: From Eritrea, the Red Sea coast of Abyssinia, and British Somaliland south to the lake region and Omo River in southern Abyssinia; also from the Kivu District to southern Angola, Lake Ngami, and the country northwest of Lake Nyasa.

Turdoides leucopygius leucopygius (Rüppell) with throat and head almost entirely whitish, occupies the Eritrean and Danakil coasts of the Red Sea. *T. l. limbatus* (Rüppell) of the interior of Eritrea and Abyssinia to northern Shoa differs in having the crown wholly gray, only forehead white. *T. l. smithii* (Sharpe) of British Somaliland and southeast Abyssinia lacks white on forehead and crown but face and chin are still grayish white. *T. l. lacuum* (Neumann) of the country between Lake Zwai and Lake Abassi is gray on lores, malar region, and throat. *T. l. clarkei* Macdonald of the Baro River district in western Abyssinia is similar to *lacuum* but perhaps more whitish on lores and beneath eye. *T. l. omoensis* (Neumann) of Sidamo and the Omo drainage has a blackish patch covering lores, malar region, and upper throat.

Now the range is interrupted until we reach the Kivu District, and except for the grayish white rump *T. l. hartlaubii* does not seem particularly close to the northeastern races. Its lores only are blackish, the pattern about head is more or less squamate, and the lower breast and flanks are more striped. The iris of *hartlaubii* is bright red, with inner rim narrowly yellowish, and in this respect it agrees closely with the Abyssinian races.

There is some geographic variation in size within the subspecies, specimens of *hartlaubii* from Ngamiland having wings 112–120 mm. long, tails 113–116 mm., while a series of five from the north end of Lake Tanganyika have wings only 105–111 mm., tails 97–106. Specimens from southern Angola bridge the gap, and many of them are no bigger than examples from the southeastern Congo, so the recognition of *ater* as a Congo race seems unnecessary.

In detail, the range of *hartlaubii* may be outlined as follows: from Lake Ngami, the Cunene River, and southern Benguella

Province to the region northwest of Lake Nyasa as far as Ufipa, the Lualaba River, western and northern shores of Lake Tanganyika, the Ruzizi Valley, and even Lulenga in the Kivu highland. At Lulenga Schouteden obtained two examples which I have examined.

In the southeastern Congo it is not a highland bird, but characteristic of marshy valleys with clumps of bushes or high grass, up to 4200 feet. In such situations I have come across it in pairs and parties up to eight, in the Ruzizi Valley, along the Lualaba at Kabalongwe, and in a dambo west of Elisabethville. The petulant nasal calls, "pă, pă, pă. . . ," are very similar to those of *T. m. sharpei*, but the whitish rump patch distinguishes the species readily during flight. Böhm noted it in Marungu and on the Luvua River; Rockefeller and Murphy collected two at Moba. There are no records from the Kasai.

Breeding apparently takes place during the rains, as a male from Moba had gonads enlarged in February, and one at Elisabethville in August was non-breeding. The nest seems not to have been described, but eggs in the British Museum are glossy, fairly deep blue, and measure 25–28 by 19–20.5 mm.

Turdoides bicolor (Jardine)[1] has twice been reported from the western Congo but surely cannot occur there. Johnston[2] mentioned it as occurring at Vivi, and in the Congo Museum there is a mounted specimen, correctly identified, which Dubois[3] believed to have come from the Lower Congo.

This very distinctive babbler is white, with blackish brown wings and tail, and inhabits a dry area of South Africa, from Great Namaqualand and the western Transvaal to Southern Rhodesia and Ovamboland. It does not even range into Angola.

[*Argya rubiginosa rubiginosa* (Rüppell)]

Crateropus rubiginosus RÜPPELL, 1845, Systematische Uebersicht der Vögel Nord-Ost-Afrika's, pp. 47, 60, pl. 19 (type locality: Shoa).

Argya rubiginosa rubiginosa BOWEN, 1931, Catalogue of Sudan birds, pt. 2, p. 26 (Redjaf; Minghannan; Simsima).

This long-tailed rufous-breasted babbler ranges from southern

[1] *Cratopus bicolor* Jardine, 1831, Edinburgh Phil. Jour., vol. 3, p. 97, pl. 3 (South Africa).

[2] 1884, The River Congo, p. 364.

[3] 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32.

Abyssinia to the Mongalla Province of the Sudan and in dry areas to Tanganyika Territory and the East African coast. It is divisible into three races, two of which approach our boundaries.

Argya rubiginosa rubiginosa is found at Lado, Redjaf, and Gondokoro, and so may perhaps reach the vicinity of Mahagi Port. *A. r. emini* Reichenow of the interior of Tanganyika Territory is known from the Mwanza District but is scarcely expected to reach the border of Urundi.

FAMILY **SYLVIIDAE.** WARBLERS

KEY TO THE GENERA OF SYLVIIDAE IN THE CONGO

1. Bill broad, rather like that of a flycatcher, rictal bristles usually well developed 2
   Bill narrow, at least in distal half 5
2. Outermost primary small, scarcely one-third as long as the next primary, sometimes shorter than primary-coverts ..... *Hippolais* (p. 463)
   Outermost primary larger, about one-half as long as the next 3
3. Tail very short, not more than 32 mm. long ..... *Hemitesia* (p. 248)
   Tail longer, more than 34 mm., and often as long as the wing 4
4. Underparts wholly yellow, sometimes washed with green or brown ..... *Chloropeta* (p. 450)
   Underparts never wholly yellow, though throat, fore neck, or under tail-coverts may be yellow ..... *Seicercus* (p. 473)
5. Outermost primary one-third to two-thirds as long as the next, often about one-half 6
   Outermost primary scarcely one-third as long as next, sometimes shorter than primary-coverts 26
6. Tail strongly abbreviated, not more than 25 mm. long, not half so long as wing ..... *Sylvietta* (p. 249)
   Tail longer than 25 mm., more than half as long as wing, frequently even longer than wing 7
7. Bill long and straight, with a distinct hook on maxilla 8
   Bill short, or fairly long, but no hook at tip 9
8. Throat and fore neck with fine dusky barring ..... *Graueria* (p. 243)
   Throat and fore neck without barring ..... *Macrosphenus* (p. 244)
9. Large and long billed, wing more than 75 mm., head and fore neck black with pale scaly edgings, lower breast yellow ..... *Hypergerus* (p. 309)
   Coloration not as above 10
10. A black crescent crosses hind crown and extends forward to eyes and lores; a chestnut patch on throat, another on lesser wing-coverts ..... *Eminia* (p. 306)
    Not so colored 11
11. Plumage mainly pale ashy gray, whiter below; bases of primaries conspicuously rufous ..... *Drymocichla* (p. 305)
    Pattern and color not as above 12

12. Large, wing 70–81 mm.; general color brownish and rufous, a narrow black streak at each side of throat ..... *Melocichla* (p. 420)
    Mostly smaller and never with black streak at side of throat as described .. 13
13. Tail square or slightly rounded 14
    Tail well rounded or often graduated 17
14. Upperparts deep green, a pale supercilium, underparts greenish gray ..... *Hylia* (p. 478)
    Not colored exactly as described 15
15. Outermost primary more than half as long as the next; or if shorter, then no yellow in plumage, and not streaked ..... *Camaroptera* (p. 310)
    Outermost primary less than half as long as next, plumage often with yellow, or back sometimes streaked 16
16. Coloration brownish, with dusky streaking on crown and back ..... *Lusciniola* (p. 463)
    Back never with dark streaks, coloration often with yellow or green, crown sometimes rufous ..... *Eremomela* (p. 265)
17. Whole tail exceptionally large, strongly graduated; rectrices 12, very broad, and under tail-coverts about two-thirds as long as median rectrices; coloration brownish ..... *Schoenicola* (p. 425)
    Tail never so extremely developed 18
18. Rectrices with dusky subterminal bars or spots and pale tips 19
    Rectrices not so marked, though often pale at tips or partially white 21
19. Wing-coverts all bright red brown, more reddish than back .. *Heliolais* (p. 402)
    Wing-coverts usually not reddish, and never more reddish than back 20
20. Rectrices 10, tail strikingly graduated ..... *Prinia* (p. 404)
    Rectrices 12, tail merely rounded ..... *Cisticola* (p. 325)
21. Whole face and fore neck black, body either rufous (male), or gray (female), without any green color, tail graduated ..... *Bathmocercus* (p. 417)
    Coloration not as above 22
22. Color mainly ashy gray, but eye region blackish and throat white or buffy white; wing 52–61 mm. ..... *Prinia* (p. 404)
    Coloration not as above 23
23. No yellow or green in adult plumage, no streaks on back, wings usually exceeding 60 mm. 24
    Often with green or yellow in plumage, wings less than 60 mm. long 25
24. Outermost primary less than two-thirds as long as the next, no distinct spots or streaks on fore neck or chest ..... *Calamocichla* (p. 441)
    Outermost primary at least two-thirds as long as the next, fore neck or chest often spotted or streaked ..... *Bradypterus* (p. 428)
25. Very small, wing only 43–47 mm., bill small and light colored; upperparts dull olive gray, underparts yellowish white; tail of 10 rectrices ..... *Phyllolais* (p. 277)
    Not usually so small, wings 43–59 mm., coloration more varied; rectrices either 12 or 10 ..... *Apalis* (p. 278)
26. Tail square or nearly square 27
    Tail distinctly rounded 29
27. Bill as long as head, somewhat widened toward base .... *Hippolais* (p. 463)
    Bill shorter than head, not noticeably widened at base 28

28. Bill very slender, back or at least wings more or less greenish.....
.....*Phylloscopus* (p. 470)
Bill stouter, wings never greenish, back mostly brown or gray..*Sylvia* (p. 465)
29. Tail with blackish subterminal bar, or rectrices mainly black with pale tips and edgings.....*Cisticola* (p. 325)
Tail uniform brown, olive brown, or grayish.....30
30. Outermost primary scarcely as long as primary coverts, but next to outermost primary is plainly the longest primary; lower throat and fore neck with well-marked dusky striping.....*Locustella* (p. 463)
Outermost primary either shorter or slightly longer than primary coverts, the next to outermost is never the longest primary; throat and fore neck plain or only faintly streaked.....*Acrocephalus* (p. 456)

Graueria vittata Hartert

Graueria vittata HARTERT, 1908, Bull. Brit. Ornith. Club, vol. 23, p. 8 (type locality: forest 90 km. west of L. Edward; also from Rugege Forest); 1909, Novitates Zool., vol. 16, p. 334, pl. 14, fig. 2 (northwest of L. Tanganyika); 1920, idem, vol. 27, p. 484. REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 363. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 276. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 367. SCHOUTEDEN, 1933, Bull. Cercle Zool. Congolais, vol. 10, p. 32.

DISTRIBUTION: Mountain forests of the eastern Congo, from the vicinity of Lake Edward south to the highland near Baraka, also the Rugege Forest, southeast of Lake Kivu, but not apparently on the Kivu Volcanoes.

Grauer's longbill appears to be limited to altitudes between 5000 and 7000 feet, and while Grauer himself collected at least 18 specimens, no one else seems ever to have seen the species alive.[1] Nothing is known of its habits except that Grauer noted it on labels as found in thickets, and once in the Rugege Forest "on trees." We may safely conclude that it inhabits tangled woods and shuns observation.

The rather long bill of *Graueria* is slightly hooked and suggests that of *Macrosphenus concolor*, but its body plumage is firmer, and the flank feathers are not exceptionally long or lax. The coloration is mainly brownish olive, becoming more grayish on the crown and more cinnamon on the throat. From the chin and malar region to the breast there is narrow dusky barring, which continues down the middle of the underparts, the ground color there being light grayish olive. In juvenal dress the crown is greenish like the back, the barring less distinct and more restricted to the throat.

[1] A. Prigogine writes me that natives obtained two examples for him at Lutunguru.

Adults have the iris brownish red, bill blackish brown, feet bluish gray. Wings 59–64 mm., tails 55–60, culmen to base 16.5–18, metatarsus 19–20.

One might regard the bill as showing some resemblance to that of *Malacocincla*, but the coloration is more suggestive of the Sylviidae, and I prefer to assign *Graueria* to the warbler family.

KEY TO THE CONGO SPECIES OF *Macrosphenus*

Coloration plain and greenish: upperparts dull green, underparts gray washed with green ..... *M. concolor*

Coloration more varied: back dull greenish, crown grayer; throat and middle of chest gray, flanks rather dull golden yellow ..... *M. flavicans*

Macrosphenus concolor (Hartlaub)

Camaroptera concolor HARTLAUB, 1857, System der Ornithologie Westafrica's, p. 62 (type locality: Guinea). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Leopoldville).

Macrosphenus concolor SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 275 (Moera; Beni; Ukaika; Mawambi–Irumu). SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 333 (Basongo; Kamaiembi; Ngombe in Kasai; Tshisika); 1924, idem, vol. 12, p. 418 (Tondu); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 106 (Kotili); 1940, Bull. Cercle Zool. Congolais, vol. 16, p. 71 (region of Mongbwalu). BANNERMAN, 1923, Ibis, p. 706; 1936, The birds of tropical West Africa, vol. 4, p. 129, fig. 40. GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 168 (Kartushi; Lesse; Simbo). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 366 (Uelle R.). BOULTON, 1931, Ann. Carnegie Mus., vol. 21, pp. 50, 51 (Avakubi; Medje; Ngayu; Irumu). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 847.

SPECIMENS: Avakubi, two males, November 1, 30; immature male, November 9. Ngayu, immature male, December 11. Medje, male, August 24; immature male, female, September 5; immature male, September 11.

ADULTS OF BOTH SEXES: Iris whitish or greenish gray on inner edge, changing to light brown or even orange buff on outer edge; rim of eyelids pinkish to purplish pink; bill dusky brown, tinged with dull pinkish below; feet light brown to brownish pink.

DISTRIBUTION: Forests of Upper Guinea, the island of Fernando Po, Lower Guinea, and western Uganda. On the east it reaches the Budongo, Bugoma, and Mabira forests in Uganda. To the north it scarcely goes beyond the Bomokandi River in the Uelle, but in the Kasai it has been found almost to the Angola border.

There is little geographic variation, but two males from Fer-

nando Po are unusually large, with wings 62 and 63 mm., culmen to base 18, and their coloration a little lighter and more grayish green below than the majority of mainland birds. Seventeen males, including examples from Sierra Leone, Southern Nigeria, the Congo, and Uganda, have wings 54.5–59.5 mm. Seven females from much the same area have wings 54–56.5 mm. *Macrosphenus pulitzeri* Boulton[1] of Angola is an allied species of somewhat larger size, with proportionately longer tail, so that it seems to show some approach to *M.* (*Suaheliornis*) *kretschmeri* (Reichenow and Neumann) of East Africa.

Macrosphenus concolor, the olive longbill, is always most apt to be found in dense tangles of vines in old second-growth woods. Its song is a lively and sustained warbling, pleasant, but of no great merit musically. Pairs or small family parties are the rule, and they are rather common about Medje and Avakubi. In my experience they are rarely seen in virgin forest. I have also collected the species in woods near Irumu; it is frequent in the Semliki Valley, but not known to ascend the higher mountains. Grauer secured three specimens 80 kilometers north of Kasongo, and Father Callewaert sent us one from Luluabourg. The specimen reported from Leopoldville cannot be found at the Congo Museum.

In the Ituri we took breeding adults in August and November, young birds from September to December. Nesting is to be expected during the rains, but no nest has yet been found.

The five stomachs I examined all contained remains of small insects—in two cases there were small caterpillars as well.

Macrosphenus flavicans flavicans Cassin

Macrosphenus flavicans CASSIN, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 42 (type locality: Camma R., Gaboon). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 615 (in part. Chinchoxo).

Macrosphenus flavicans flavicans BANNERMAN, 1921, Ibis, p. 125; 1936, The birds of tropical West Africa, vol. 4, p. 125, fig. 38 (Landana). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 365.

DISTRIBUTION OF THE SPECIES: Fernando Po and the forest of southern Cameroon, east to Uganda and south to Ndala Tando in Angola. A supposed Upper Guinea race, *M. leoninus* Neumann, was based on a single specimen from Sierra Leone with

[1] 1931, Ann. Carnegie Mus., vol. 21, p. 50 (Chingoroi, Benguella).

yellow throat. Inasmuch as there is no other record west of Fernando Po, and the species is not one that long escapes observation, I feel sure this aberrant bird cannot represent *Macrosphenus flavicans*.[1]

Macrosphenus flavicans flavicans ranges from Fernando Po, the Cameroon, and Loango Coast eastward to some point in the Congo forest, where the lower breast and abdomen become yellower, the flanks more washed with golden brown. There it is replaced by *M. f. hypochondriacus*, which occupies the eastern Congo forest and the lowland forests of Uganda. In the forest patches of northern Angola lives *M. f. angolensis* Bannerman,[2] dull greenish below like the nominate race, with slightly shorter bill, and perhaps a little more brownish on the crown.

Rectirostrum zenkeri Reichenow was not based on the young of *M. flavicans* but is synonymous with *M. concolor*. *Macrosphenus collinsi* Riley[3] was based on a subadult female of *M. f. flavicans*.

There is a surprising lack of records for this "longbill" from the western Congo. I never saw it at Lukolela, but it must occur in the Mayombe, in view of its presence near Landana.

Macrosphenus flavicans hypochondriacus (Reichenow)

Rectirostrum hypochondriacum REICHENOW, 1893, Ornith. Monatsber., p. 32 (type locality: Kinyawanga, Semliki Valley).

Macrosphenus flavicans SHELLEY, 1890, Ibis, p. 160 (Yambuya). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 615 (in part. Kinyawanga; Yambuya); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 363. O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 378 (Beni; Avakubi). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 275 (Moera; Ukaika; Mawambi; Mawambi-Irumu); 1924, idem, vol. 38, p. 80. SCHOUTEDEN, 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 86 (Buta).

Macrosphenus flavicans hypochondriacum BANNERMAN, 1921, Ibis, p. 122 (Uelle and Aruwimi rivers). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 167 (Kartushi).

Macrosphenus flavicans hypochondriacus SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 365. BOULTON, 1931, Ann. Carnegie Mus., vol. 21, pp. 50, 51 (Medje; Rungu; Niangara; Ngayu; Manamama). VAN SOMEREN, 1932, Novitates Zool., vol. 37, p. 341. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 565 (Saidi in Ituri). JACKSON, 1938, The birds of Kenya Colony and ...Uganda, vol. 2, p. 846.

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[1] *Macrosphenus kempi* (Sharpe) occupies forested Upper Guinea, and despite its lack of yellow pigment may be conspecific with *M. flavicans*.

[2] 1920, Bull. Brit. Ornith. Club, vol. 41, p. 6 (Ndala Tando).

[3] 1924, Auk, p. 326 (Oguma, Gaboon).

Macrosphenus flavicanus hypochondriacus SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 106 (Kotili; Panga; Nava R.; Bondo Mabe).

SPECIMENS: Avakubi, two males, February 24, August 12; female, August 12; juvenile male, November 30; immature female, September 25. Ngayu, female, December 21. Manamama, male, April 15. Medje, male, August 2. Rungu, male, female, June 27. Niangara, male, female, May 18.

ADULTS OF BOTH SEXES: Iris yellow; bill black, with a whitish line along cutting edges of both maxilla and mandible, and a light gray line along the under side of mandible; feet bluish gray.

DISTRIBUTION: Lower Uelle and Aruwimi districts of the Congo east to the Mabira Forest in Uganda. To the south it seems to extend to the Kasai, for we have a single female from Luluabourg which appears to represent this race.

Our six males from the Ituri have wings 58–64 mm., tails 42–47, culmen to base 19–20. There is a distinct sexual difference in size, for five females from the same district have wings 53–57.5 mm., tails 36–39, culmen to base 18–19. Uganda specimens are very little larger, wings 57–65 mm. when both sexes are ncluded, and bill not noticeably longer. The race *ugandae* seems not valid.

The soft juvenal plumage of this bird is worn but a short time, though much of it is still retained by our youngest example from Avakubi. Crown and back are dull grayish brown, with a few new green feathers coming in. Cheeks and throat are gray, with a wash of green; the breast changes from gray anteriorly to dull yellowish posteriorly, but most of its soft feathers are margined with brownish, as are those of the flanks. Otherwise the flanks are dull yellowish like the abdomen, under tail-coverts greenish yellow. Upper wing-coverts and inner secondaries are edged with brownish, and the longest alula quill has a small whitish dot at the tip. At this stage the iris is gray, and the tomia and gape are yellowish. The whole interior of the mouth is yellow, with two black spots on the back of the tongue, indicative of relationship with the Sylviidae.

In the next plumage the crown is olive green like the back, and the whole throat is decidedly washed with green, though the middle of the chest is gray. The golden color of the flanks is still lacking. In the fully adult plumage the head and throat become gray, the crown somewhat washed with brown.

The gray-headed longbill is not found far beyond the margin of the solid forest. In the Uelle we saw it only as far north as Niangara; it is common in the forested section of the Semliki Valley, but does not ascend the mountains. From the whole southern Congo I have seen only a single specimen.

In the Ituri this bird is an inhabitant of dense thickets along the borders of clearings, hopping leisurely about the twigs and branches. In the more open country of the southern Uelle it retires to the heaviest patches of forest, seeking the densest undergrowth. Its voice is heard commonly in the morning, a prolonged series of gradually descending whistles, about a dozen in number. On one occasion a bird of this species flew into a house at Avakubi during the daytime, the one time, I think, when I saw it away from the woods.

The only specimen taken in the dry part of the year, at Avakubi in February, was not in condition to breed, but the season of reproduction includes a considerable part of the rains, for we took breeding adults in the northeastern Congo during April, May, June, and August, as well as a newly fledged young one in November. The nest is still unknown.

The food as observed from five stomachs consists of insects, particularly caterpillars (found in three cases). Some leaf hoppers were among the other insects noted, and one spider was likewise found.

Hemitesia neumanni (Rothschild)

Sylvietta neumanni ROTHSCHILD, 1908, Bull. Brit. Ornith. Club, vol. 23, p. 42 (type locality: forest northwest of L. Tanganyika, at 2000 m.). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 364. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 303. HARTERT, 1919, Novitates Zool., vol. 26, p. 358, pl. 5, fig. 1; 1920, idem, vol. 27, p. 460. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 536.

Hemitesia neumanni CHAPIN, 1948, Auk, p. 292 (Kisale on Elila R.).

DISTRIBUTION: Highlands west of Lake Edward and northwest of Baraka, extending west as far as Kisale on the Elila River, some 40 miles west of Uvira, and northward to the region of Lutunguru. Nearly all the known specimens, scarcely more than 10, were taken by Rudolf Grauer at elevations between 1900 and 2000 meters. A single male was secured near Kisale at about 6000 feet by Rockefeller and Murphy on August 7 and found to be in breeding condition. Another from west of Lake Edward was sent

to the Congo Museum by A. Prigogine, and Prigogine has recently taken additional examples at Lutunguru and northwest of Tanganyika.

This rare warbler is largely olive green above, more yellowish beneath, but with a whitish patch in the middle of lower breast and abdomen. Its crown has a dark, olive gray stripe in the center, a broad black stripe on each side. A narrow whitish temporal stripe is bordered by another black line below. The cheeks are yellowish green, lores with a blackish line from the eye toward the nostrils. The bill is distinctly broader than that of

FIG. 13. Neumann's bush warbler, *Hemitesia neumanni*.

Sylvietta, and the feet are much larger. Wing 59–65 mm.; tail 27–32; culmen to base 14–15; metatarsus 24–26. Iris dark brown to reddish brown; maxilla brownish black, mandible yellowish; feet brownish to flesh color.

Except for the single word "Dickicht" on one of Grauer's labels, nothing has been learned of its behavior or voice, and we can only assume that it is a bird of dense undergrowth, not easy to see. The size of its feet suggests that it lives mainly on or near the ground.

KEY TO THE SPECIES OF *Sylvietta* IN THE CONGO

1. A conspicuous white band above lores and eyes, middle of crown deep reddish brown; lower surface mainly light gray, under tail-coverts greenish yellow ..... *S. leucophrys*

No conspicuous whitish superciliary line, though there may be a narrow stripe of rufous or buff 2

2. A deep rufous cap covering crown and extending to below eyes, throat white, no rufous spot or crescent on fore neck, wing more than 54 mm. long ..... *S. chapini*

If the crown is rufous, then the throat is washed with cinnamon, or there is a rufous crescent on the fore neck 3

3. Fore neck with a distinct crescent of rufous, and a patch of deep rufous on ear-coverts; crown either rufous or gray ..... *S. ruficapilla*

Fore neck without any distinct rufous marking, though it may have a faint wash of fawn color, or whole chest and throat may be mainly light rufous or brown 4

4. A narrow light superciliary line present, usually rufous or brown 5

No distinct line on supercilium, though color of cheeks may extend to that area 7

5. Back and wings dark olive, outer margins of remiges brighter green; crown brownish or rather dark grayish ..... *S. virens*

Back and wings gray or brownish gray 6

6. A well-defined whitish area occupies middle of lower breast and abdomen, though chest and flanks are cinnamon to light rufous .... *S. brachyura*

No such distinct light area, though buffy or light rufous underparts may become paler toward midline ..... *S. rufescens*

7. Back and crown gray; underparts light rufous, or grayish with cinnamon wash ..... *S. whytii*

Back greenish, crown grayish; underparts yellowish, shading to light gray on throat, usually with a faint wash of fawn on fore neck and ear-coverts ..... *S. denti*

Sylvietta leucophrys leucophrys (Sharpe)

Sylviella leucophrys SHARPE, 1891, Ibis, p. 120 (type locality: Mt. Elgon). JACKSON, 1906, Ibis, p. 549 (Ruwenzori). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 362 (Mpanga Forest, 5000 ft.; Mubuku Valley, 6000–8500 ft.; Butagu Valley, 7000 ft.). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 292.

Sylvietta leucophrys leucophrys SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 535. GRANVIK, 1934, Rev. Zool. Bot. Africaines, vol. 25, p. 99. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, pp. 185, 186. JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 1076.

DISTRIBUTION OF THE SPECIES: Mountain forests from Kenya and Elgon to Ruwenzori, the Kivu District, and highlands on northwestern and eastern sides of Lake Tanganyika. *S. l. leucophrys*, with upper back washed with brown, extends from Mt. Kenya to Ngong, the Aberdares, Mt. Elgon, and Ruwenzori, never below 4800 feet. *S. l. chloronota*, with back usually brighter green, replaces the nominate race from the Kivu and Kigezi districts south to the vicinity of Baraka and Kungwe near Lake

Tanganyika. The difference is slight, but Ruwenzori birds do agree with those from East Africa, and it may be that in *chloronota* the brown behind the eye tends to extend lower on the ear-coverts. Three specimens from Meru, Mt. Kenya, do not differ from the nominate race.

We collected this little warbler with prominent white eyebrow in the undergrowth of the Mpanga Forest, at the top of Mt. Musandama, and on the western slope of Ruwenzori at Kalongi and on the Bugongo Ridge. On Ruwenzori it occurs from about 6500 up to 9000 feet, in the bamboo zone and the forest just below it. While not rare, it was never seen in parties and does not seem addicted to climbing on bark. It frequents tangled undergrowth,

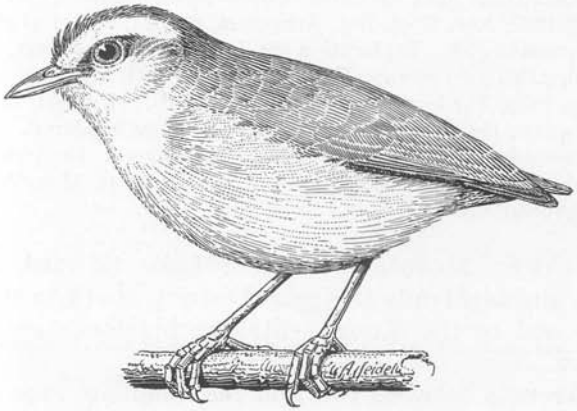

FIG. 14. White-browed warbler, *Sylvietta leucophrys*.

especially thickets with many vines, and is seen in bushes and low trees growing amid bamboos. The food consists of small beetles and other insects. I never heard it sing.

The iris of adults is dark brownish red, rim of eyelids pinkish brown; the bill pinkish brown above, grayish pink below; feet bright flesh pink, claws grayer. The juvenal plumage is not very different from the adult, but the eyebrow is tinged with greenish yellow and the chest is olive brown, this dark color extending in a point up the middle of the throat.

A nest found on Mt. Elgon in April by Granvik[1] was basket

[1] 1934, Rev. Zool. Bot. Africaines, vol. 25, p. 99.

shaped, hung between three strong grasses about 1 meter above the ground. It was a soft structure made largely of grasses and lined with a few feathers. The two eggs were glossy white, finely spotted with reddish brown, in one case forming a cap at the blunt end. Dimensions were 14.9 by 12 mm. and 15.3 by 11.8 mm. If the birds have any definite breeding season on Ruwenzori I should expect it to come toward May and June.

Sylvietta leucophrys chloronota Hartert

Sylvietta leucophrys chloronota HARTERT, 1920, Novitates Zool., vol. 27, p. 460 (type locality: forest northwest of Baraka, L. Tanganyika, 1900 m.). VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 225 (south Ankole; Kivu). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 145 (Burunga). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 535. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 311 (Lulenga; Nya-Muzinga; Ngoma); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 97. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 186. JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 1077 (Kigezi). MOREAU, 1943, Ibis, p. 392 (Kungwe-Mahare highland).

Sylvietta leucophrys REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 364. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 303 (Kisenyi–Rutshuru).

DISTRIBUTION: Mountains west of Lake Edward, the Kivu Volcanoes, and highlands of Kigezi District, south to the vicinity of Baraka and to the Kungwe-Mahare highlands east of Lake Tanganyika.

The differences between this and the nominate race are slight, but a male which I took at 8100 feet on Mt. Nyemilima, northwest of Lake Edward, is best referred to *chloronota* because of the brownish wash on cheeks and temporal region. On the Kivu Volcanoes I did not observe the species above 8000 feet, and it seemed more common near the lower edge of the forest, around 6400 feet. Schouteden even noted it at Ngoma, at only around 5000 feet, and Grauer obtained it from 5250 to 7900 feet in the highlands northwest of Baraka. It is certainly to be expected in Urundi, wherever any suitable vegetation exists.

On Mt. Kandashomwa and the Lusigi River, west of the Ruzizi Valley, Rockefeller and Murphy collected three specimens, between 7650 and 9100 feet. Their notes on behavior and on colors of eye, bill, and feet are like those I have given for *leucophrys*.

Sylvietta chapini Schouteden

Sylvietta chapini SCHOUTEDEN, 1947, Rev. Zool. Bot. Africaines, vol. 50, p. 193 (Djugu and Nioka in eastern Ituri District, Belgian Congo. I designate Djugu as the type locality). VRYDAGH, 1949, Gerfaut, vol. 39, p. 68.

DISTRIBUTION: Known only from three specimens taken by J. M. Vrydagh on the Lendu Plateau and probably restricted to levels above 5000 feet on that highland.

This form appears to be a geographic representative of the *S. leucophrys* group, with a chestnut cap extending down over the cheeks; wings and tail olive green, the back green washed with brown. The underparts are largely brownish gray, with throat and abdomen white, under tail-coverts lemon yellow. The under wing-coverts are yellowish, tibiae greenish yellow. Iris light brown to chestnut, bill and feet grayish pink. Wing 56–58 mm.; tail 21–23 mm.; exposed culmen 7–9 mm.; metatarsus 18–19 mm. The grayish underparts, with yellowish tibial feathering and under tail-coverts, suggest close relationship to *S. leucophrys*. Despite the difference in head color, *chapini* may yet prove to be only a race.

Vrydagh considers *S. chapini* a fairly common bird on the plateau west of Lake Albert. He tells me that he secured his first specimen amid the introduced black wattle trees near the hotel at Nioka (5700 feet) and the two others in mountain forest close to Djugu (5400 feet). Nothing further is known of its behavior, voice, or nesting.

Sylvietta ruficapilla ruficapilla Bocage

Sylvietta ruficapilla BOCAGE, 1877, Jor. Sci. Nat. Lisboa, vol. 6, p. 160 (type locality: Caconda, Benguella). SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 285 (Elisabethville).

Sylviella ruficapilla NEAVE, 1910, Ibis, p. 153 (Kambove; Busanga on Lualaba R.; upper Lufira R.; Lufupa R.).

Sylvietta ruficapilla ruficapilla SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 534. LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 81 (in part. Nasondoye).

DISTRIBUTION OF THE SPECIES: From the Cataracts of the Congo and the Benguella highland eastward to the southwest side of Lake Tanganyika, Northern Rhodesia, Nyasaland, and the Tete Province of Mozambique. *S. r. ruficapilla* is a large race, with wings 62–71 mm., rather ruddy crown as well as deep rufous

ear-coverts, and scarcely a tinge of yellow on its light gray underparts. It ranges from Angola to the Upper Katanga.

Sylvietta ruficapilla chubbi, of about the same size, differs in the light gray color of its crown and has a distinct wash of yellowish on breast and abdomen. It extends from Marungu and Northern Rhodesia to Nyasaland and Tete Province. *S. r. rufigenis* of the southwestern Congo is smaller, wings 57–64 mm., breast and abdomen tinged with yellowish, but crown only lightly washed with rufous. All three races have rufous ear-coverts and a rufous crescent on fore neck.

The nominate race seems to inhabit highlands, and reaches Congo territory only in the Katanga. It is replaced by *chubbi* east of the Lufira and Luapula rivers. Neave (1910) reported finding *S. ruficapilla* singly or in family parties, at elevations between 3000 and 4500 feet. Its iris is yellowish, often tinged with brown; bill brownish, paler below; feet flesh color to pinkish brown.

Sylvietta ruficapilla rufigenis (Reichenow)

Sylviella rufigenis REICHENOW, 1887, Jour. Ornith., pp. 215, 301, 306 (type locality: "Upper Congo" = Manyanga, see p. 301 of same volume; also Leopoldville).

Sylvietta rufigenis REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 631. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 534.

Eremomela rufigenys DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32.

Silvietta rufigena SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 335 (Luebo).

Sylvietta ruficapilla ruficapilla LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 81 (in part. Kabambaie).

Sylvietta ruficapilla rufigenis BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 110.

Sylvietta ruficapilla SCHOUTEDEN, 1940, Bull. Cercle Zool. Congolais, vol. 16, p. 73 (Kunungu).

SPECIMENS: Leopoldville, male, July 6; female, December 21.

ADULTS: Iris light brown; maxilla light brown, mandible brownish pink; feet yellowish brown.

DISTRIBUTION: From Manyanga on the Congo River eastward at least to Luluabourg in the Kasai. On the north it must be limited by the forest, but on the south it should extend into northern Angola. Not yet known from the coastal plain of the Congo.

At Leopoldville I found it rather common, feeding in the bushes of the open savanna. At Luluabourg Father Callewaert obtained four specimens plainly of the race *rufigenis*, so I assume that Lynes's immature example from Kabambaie really belongs here.

Sylvietta ruficapilla chubbi Ogilvie-Grant

Sylvietta chubbi O.-GRANT, 1910, Bull. Brit. Ornith. Club, vol. 27, p. 10 (northwest Rhodesia; type from Broken Hill).

Sylvietta ruficapilla chubbi SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 534 (L. Bangweolo).

DISTRIBUTION: From Balovale, Mumbwa, and Broken Hill in Northern Rhodesia to the district north of Lake Bangweolo and the Marungu highland near Lake Tanganyika; also in Nyasaland, and south to Furancungo in the Tete Province.

The gray crown is distinctive of this race, which frequents wooded savannas, usually with *Brachystegia* trees. Its song-call, according to Benson,[1] is a loud, ringing "chee, chee, che-e-e," with emphasis on the last syllable.

Although the race *ruficapilla* is the one found near Elisabethville and Kambove, on the Marungu highland *chubbi* was secured by Rockefeller and Murphy at Lake Suzi, 3850 feet, and Kampia, 4525 feet. They noted the iris as light brown, bill brownish, more silvery below, and feet yellowish brown to flesh color.

In Northern Rhodesia Winterbottom[2] found that the breeding season came on toward October. Vincent[3] obtained one example from a mixed bird party that included *Elminia albicauda*, *Parus afer*, *Eremomela scotops*, *Hyliota australis*, *Salpornis spilonota*, and *Dendropicos stierlingi*.

A nest found by White[4] in late September on the Manyinga River in Northern Rhodesia was a purse of grass ornamented with bits of dried leaves, withered flowers, and chips of wood, hung in a low bush. The two eggs were white with spots of slaty black and dark brown gathered in a zone at the large end; they measured 18–18.5 by 11–11.5 mm.

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[1] 1937, Ibis, p. 571; 1944, idem, p. 476.

[2] 1939, Revised check list of the birds of Northern Rhodesia, Game Warden's Report, Lusaka, p. 57.

[3] 1935, Ibis, p. 524.

[4] 1946, Ibis, p. 510.

Sylvietta virens virens Cassin

Sylvietta virens CASSIN, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 39 (type locality: Camma R., Gaboon). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 631. SCHOUTEDEN, 1924, Rev. Zool. Africaine, vol. 12, p. 270 (Kidada); 1926, idem, vol. 13, p. 197 (Makaia Ntete). BOUET, 1934, Ois. Rev. Française Ornith., new ser., vol. 4, p. 643 (Ubangi R.).

Sylviella virens REICHENOW, 1887, Jour. Ornith., p. 306 (Leopoldville).

Sylvietta virens baraka SCHOUTEDEN, 1925, Rev. Zool. Africaine, vol. 13, p. 14 (Kunungu).

Sylvialla virens PETIT, 1926, Dix années de chasses, p. 120 (Boma).

Sylvietta virens virens SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 535 (lower Ubangi R.). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 111 (Kaga Djirri near Kemo R.).

DISTRIBUTION OF THE SPECIES: Forests of Upper and Lower Guinea, east to Uganda and south to northern Angola. There can be little doubt that *Sylvietta flaviventris* (Sharpe)[1] is conspecific with *S. virens*. It differs rather conspicuously by the yellow area on its breast, below the light brown chest, but otherwise the resemblances are close. The young of *virens* show a yellow tinge in the middle of the breast, and the race *nigeriae* described by Bannerman[2] from the vicinity of Lagos, Nigeria, is said to have only a restricted yellow breast patch.

Sylvietta virens flaviventris, then, ranges from Sierra Leone to the western Gold Coast, and *S. v. nigeriae* from Ashanti to Lagos. *S. v. virens* was secured by Ansorge at Oguta, just east of the lower Niger River, and extends eastward from the Cameroon and Gaboon coast to the Ubangi River and the Congo River. This race has no yellow on the breast when adult; it is deeply colored, with a heavy wash of rufous brown on cheeks and chest.

Somewhere east of the lower Ubangi River *virens* is replaced by *S. v. baraka*, with a more grayish brown color on cheeks and chest. This race extends from the Upper Congo forest to the greater part of Uganda and south to the Kasai District. *S. v. tando* of northwestern Angola and the Congo Coast is lighter colored, especially on the underparts, more whitish on the belly, but with a conspicuous wash of light rufous on lower throat and chest.

Sylvietta virens virens evidently reaches Kaga Djirri near the great bend of the Ubangi, Kunungu near the middle Congo River,

[1] 1877, Proc. Zool. Soc. London, p. 23, pl. 2, fig. 2 (Fanti).

[2] 1920, Bull. Brit. Ornith. Club, vol. 41, p. 4 (Iju, Southern Nigeria).

and Stanley Pool. But there may still be some doubt as to the race occurring in the Mayombe Forest and the Cataracts district. In any case the nominate subspecies does occur in forested country of the western Congo, and the exact boundary between it and *baraka* is not yet known.

This dull-colored warbler with stubby tail is fairly common in second growth and about the edges of forest clearings. According to Bates,[1] the nest is a nicely constructed little pocket like that of a sunbird. In one nest there were three or four eggs, but they were accidentally broken, and it could only be seen that they were speckled, on a whitish ground.

Sylvietta virens baraka (Sharpe)

Sylviella baraka SHARPE, 1897, Bull. Brit. Ornith. Club, vol. 7, p. 6 (type locality: Entebbe, Uganda).

Sylviella virens DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Kibongo).

Sylviella barakae O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 362, pl. 19, fig. 6, egg (Beni).

Sylvietta baraka REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 365.

Sylvietta virens SALVADORI, 1915, Ann. Mus. Civ. Genova, ser. 3, vol. 6, p. 280 (Kasai). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 81 (Luluabourg; Lusambo). GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 185.

Sylvietta virens barakae SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 303 (Ukaika). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 97.

Silvietta virens virens SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 335 (Luebo; Macaco; Belenge).

Sylvietta virens baraka GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 144 (Kartushi, Kampi-na-Mambuti). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 535. SCHOUTEDEN, 1935, Rev. Zool. Bot. Africaines, vol. 27, p. 402 (Kako bridge); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 121 (Kotili). WOODMAN, 1938, Sudan Notes and Records, vol. 21, p. 322 (southwest Bahr-el-Ghazal Province; northeastern Congo). JACKSON, 1938, The birds of Kenya Colony and ...Uganda, vol. 2, p. 1075. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p.112 (Uelle District).

SPECIMENS: Stanleyville, female, November 1. Banalia, immature male, September 25. Avakubi, two males, January 21, 24. Ngayu, immature male, December 12; female, December 25. Gamangui, two males, February 12, 13. Medje, immature male, July 31.

[1] 1909, Ibis, p. 72.

ADULTS: Iris light brown; bill gray, dark above, lighter below; feet pale pink to pale yellowish pink.

DISTRIBUTION: From the Upper Congo forest eastward to the Lotti Forest in the southeastern Sudan, the base of Elgon, Mabira Forest, the vicinity of Rutshuru, and Bukoba. Wanting in the Kivu highlands, it extends to the forested Manyema and the vicinity of Luluabourg in the Kasai. Specimens taken by Rockefeller and Murphy at Kita-Kita in the Manyema, by Grauer 80 kilometers north of Kasongo, and by Father Callewaert near Luluabourg are plainly referable to *baraka*.

In the northeastern Congo forest I found this warbler to be partial to old scrubby plantations, second growth, bushes near rivers and about the borders of forest villages. It is common in the Ituri, north to Medje, and east to the Semliki Valley, and it must occur in the gallery forests of the Uelle. Though reported once from near Rutshuru, it is not known to ascend much above 4000 feet.

A tiny, dull-colored bird, not sociable, it is more often heard than seen. The male frequently gives a short but very agreeable warble, though this song is sometimes more carelessly rendered. Dissections of our Ituri specimens indicated that breeding might occur at almost any time of year. Two immature birds retained traces of a greenish yellow wash on the middle of the breast. Examinations of a few stomachs revealed only small insects.

At Entebbe in Uganda Jackson found that nesting was carried on between February and May. The nest is pear shaped, suspended from a twig of a bush at 3 to 9 feet from the ground. Compact and neatly constructed of fine grasses, fibers, dry and pliant flower stems, it is woven together with silk of spiders or caterpillars, ornamented with small bits of bark, cobwebs, and wood dust. Two eggs are probably normal, bluish white or very pale blue, rather faintly speckled with light rufous, about 16.5 by 11 mm.

Sylvietta virens tando Sclater

Sylvietta virens tando W. L. SCLATER, 1927, Bull. Brit. Ornith. Club, vol. 48, p. 18 (type locality: Ndala Tando, Angola; also from Landana); 1930, Systema avium Aethiopicarum, pt. 2, p. 535. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 112.

DISTRIBUTION: Forest patches of northwestern Angola, near

Ndala Tando, Canhoca, and Roça Congulu[1]; thence northward along the coast to Landana in the Enclave of Cabinda. This light-colored race must occur near the Congo mouth, but whether it occupies the Mayombe Forest and the Cataracts district I cannot say. Specimens from the Lower Congo were recorded by Schouteden simply as *Sylvietta virens*.

The bird is certainly common near Canhoca, Angola, and no doubt haunts patches of woods as does the race *baraka* around the borders of its range.

Sylvietta denti denti (Ogilvie-Grant)

Sylviella denti O.-GRANT, 1906, Bull. Brit. Ornith. Club, vol. 19, p. 25 (type locality: 10 miles northwest of Beni, eastern Congo); 1910, Trans. Zool. Soc. London, vol. 19, p. 364, pl. 13, fig. 3.

Sylvietta denti REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 365. VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 225 ("Ruwenzori"). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 536. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 121 ("Uelle?").

Sylvietta denti denti BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 115.

SPECIMENS: Banalia, male, September 21; immature male, September 26.

ADULT MALE: Iris light brown, bill blackish brown, feet pinkish brown.

DISTRIBUTION OF THE SPECIES: Forest areas from Sierra Leone east to the Semliki Valley. *S. d. hardyi* Bannerman[2] is the Upper Guinea race, known from Sierra Leone and the Gold Coast. It is brighter green on the back, less speckled on cheeks than *S. d. denti* of Lower Guinea. The latter has been collected at Efulen, Bitye, and Akonolinga in the forested Cameroon, Banalia on the Aruwimi River, and in the forest near Beni. In October, 1926, I secured two additional specimens at 3700 feet, 10 miles north of the new post of Beni. They were with a mixed flock of small birds in the upper boughs of forest trees near the road.

In my opinion Dent's short-tailed warbler is a bird of second growth rather than primary forest. It seems not to be so generally distributed as *Sylvietta virens*. One of my specimens from Banalia was secured in the undergrowth of some rather open

[1] Sick, 1934, Ornith. Monatsber., p. 170.

[2] 1911, Bull. Brit. Ornith. Club, vol. 29, p. 23 (Sierra Leone).

woods, scarcely primeval, and the other was in a tree on a former village site, now grown up with thickets. These examples had eaten only some insects and one caterpillar.

Bates[1] examined five nests of this stub-tailed warbler, and showed that only a single egg is regularly laid. It is yellowish clay color, thickly mottled all over—more or less diffusely—with umber brown and gray. Dimensions are 16.5–19 mm. by 11–12 mm.

The nests were small pockets made of leaf petioles, not woven together, but bound loosely by gossamer threads running all among them, and extending up over the supporting twig. The whole structure was as flexible as a knitted bag and had particles of trash hung all over the outside. A few fibers served as nest lining. One such nest was hung on a prickly, bramble-like stem extending horizontally over a cleared space in second growth. Holman (*in* Bannerman, 1939) pointed to the great similarity between nests of *S. denti hardyi* and of *Pholidornis rushiae*.

Sylvietta brachyura carnapi (Reichenow)

Sylviella carnapi REICHENOW, 1900, Ornith. Monatsber., p. 22 (type locality: eastern Cameroon).

Sylvietta ladoensis REICHENOW, 1918, Jour. Ornith., p. 438 (type locality: Aba, Upper Uelle District).

Sylviella brachyura ladoensis GYLDENSTOLPE, 1926, Arkiv Zool., vol. 19A, no. 1, p. 51.

Sylvietta brachyura dilutior SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 121 (in part. Abimva; Faradje; Mauda).

Sylvietta brachyura oliviae STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 590 (Fort Sibut).

Sylvietta brachyura carnapi BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 109 (Bamingui R.).

Sylvietta virens BOUET, 1942, Ois. Rev. Française Ornith., new ser., vol. 12, 49 (upper Kemo River).

Sylvietta brachyura brachyura BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 69.

SPECIMENS: Dungu, female, January 26. Nzoro, immature female, April 21. Faradje, male, November 5; three females, April 29, September 24, November 3.

ADULTS: Iris light brown, rim of eyelid pink; maxilla dark brownish gray, mandible light gray with dark tip; feet brownish pink.

[1] 1909, Ibis, p. 72; 1911, idem, p. 621.

DISTRIBUTION OF THE SPECIES: Grasslands from Senegal, Sierra Leone, and Asben eastward to the Red Sea Province, Somaliland, and Kenya Colony; then southward to North Usambara. *S. b. brachyura* Lafresnaye[1] is a pale race, but with eyebrow and throat light rufous, chest and flanks a little richer, crown and back light gray. It ranges from Senegal across the dry Sudanese belt to the White Nile, the Red Sea Province, and western Abyssinia. *S. b. carnapi*, of slightly deeper coloration above and below, occupies the savannas just north of the equatorial forest from the edge of the Cameroon highlands to the southern Bahr-el-Ghazal and Uelle District. *S. b. dilutior*, possibly a trifle paler than *carnapi*, occupies the country near the Bahr-el-Jebel, Lake Albert, and Uganda, extending to the Nandi and Trans-Nzoia districts of Kenya Colony.

From Eritrea and British Somaliland south to northern Usambara and the eastern base of Kilimanjaro the birds have whitish eyebrows and throat. *S. b. leucopsis* of Southern Somaliland and Kenya Colony has the wing 47–55 mm. long, and since wings of more northern birds measure only 49–58 mm., I should be loath to admit *hilgerti* as a valid northern race.

The species is distinctly of lowland distribution, fond of savannas with a pronounced dry season. *S. b. carnapi* scarcely ascends above 4500 feet and ranges across the Ubangi-Shari to the Upper Uelle, being replaced near the Bahr-el-Jebel and Lake Albert by the slightly paler *dilutior*. It should intergrade with *brachyura* somewhere in the Bahr-el-Ghazal Province.

The stub-tailed warblers of this genus have often been called crombecs, the name being derived from "le Figuier Crombec" of Levaillant, *S. rufescens*. As an English name, crombec seems altogether inept, and I much prefer that of nuthatch-warbler, proposed by A. L. Butler for *S. brachyura*.

Going in pairs or family parties, this tiny warbler spends its days exploring the bushes and small trees of the savanna, even climbing on the rough bark in search of its insect food. It has a sweet warbling song which recalls the voice of *Sylvietta virens*, and is very often found in company with *Hyliota flavigaster*, *Eremomela p. canescens*, and *Salpornis spilonota*.

The only breeding specimen we secured was taken on January

[1] 1839, Rev. Zool., p. 258 (Senegambia).

26, suggesting that in the Uelle nesting is carried on during the drought. But *S. b. brachyura*, of drier regions to the north, is known to lay from May to July. The nest of the latter has been described as a hanging pocket like those of sunbirds, suspended with gossamer, but not completely roofed over, and without hanging streamers. The two eggs are dull white with small spots of gray and rufous or brown. One measured 16.5 by 11.5 mm.

Sylvietta brachyura dilutior Reichenow

Sylvietta carnapi dilutior REICHENOW, 1916, Ornith. Monatsber., p. 154 (type locality: "Ruwenzori"; specimen doubtless from Mokia).

Sylviella jacksoni JACKSON, 1906, Ibis, p. 548 (Katwe; Kangao's).

Sylviella carnapi O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 363 (Mokia, southeast of Ruwenzori, 3400 ft.).

Sylvietta microura EMIN, 1922, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 3, p. 365 (northwest shore of L. Albert).

Sylvietta micrura dilutior BANNERMAN AND BATES, 1924, Ibis, p. 242.

Sylvietta brachyura dilutior SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 532. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 121 (in part. Mahagi Port); 1941, Rev. Zool. Bot. Africaines, vol. 34, p. 266 (Kasenyi). JACKSON, 1938, The birds of Kenya Colony and ...Uganda, vol. 2, p. 1071 (Semliki Valley).

Sylvietta brachyura carnapi MACDONALD, 1940, Ibis, p. 342 (in part).

DISTRIBUTION: From the dry lowlands at the southern base of Ruwenzori and the upper Semliki Valley to most of Uganda, the lowlands around Lake Albert, and the border of Kenya Colony in the North Kavirondo and Trans-Nzoia districts.

Some Uganda specimens differ little from *carnapi*, and it is not surprising that Macdonald (1940) denied the validity of *dilutior*. But examples from Lake Albert and the base of Ruwenzori seem decidedly pale.

In behavior *dilutior* does not differ from *carnapi*, and it does not venture up into forested highlands. I have collected specimens at Kasenyi and between Kasindi and Katwe. In Toro, Archer found a nest on March 12, while at Jinja, Uganda, Belcher examined a nest in February with two eggs. The incubating bird sat with tail toward the entrance, contrary to the usual habit of sunbirds.

Sylvietta rufescens adelphe Grote

Sylvietta micrura adelphe GROTE, 1927, Ornith. Monatsber., p. 118 (type locality: Baraka on L. Tanganyika).

Sylviella jacksoni SALVADORI, 1907, Boll. Mus. Zool. Anat. Comp. Torino, vol. 22, no. 570, p. 8 (Lukonzolwa).

Sylviella whytii NEAVE, 1910, Ibis, p. 154 (Lufira R. near Lukafu).

Sylvietta pallida SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 302 (Baraka; Ruzizi Valley).

Sylvietta rufescens adelphe SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 534 (L. Bangweolo). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 81 (upper Lufira R.). WINTERBOTTOM, 1939, Revised check list of the birds of Northern Rhodesia, p. 57.

DISTRIBUTION OF THE SPECIES: Cape Province north to Mossamedes, Northern Rhodesia, the Upper Katanga, Marungu, the northern end of Lake Tanganyika, and the lower Ruzizi Valley.

The nominate race ranges from South Africa to Southern Rhodesia, Damaraland, and perhaps the Mossamedes district of Angola. The underparts may be light rufous, or only buffy, and the bill varies greatly in length, the culmen sometimes attaining 17 mm. Austin Roberts finds that eastern birds are not regularly of richer color. There are always a dark loral spot and a distinct light superciliary line.

Sylvietta rufescens pallida (Alexander)[1] is a paler race found in the Zambesi Valley and extending to Nyasaland, west of the Nyasa Rift, to Northern Rhodesia, and possibly the southeast corner of Lake Tanganyika. Its wing is said to measure 61–63 mm. We have no reliable record from Congo territory.

From the Katanga and Lake Bangweolo north to the Ruzizi Valley there is a smaller race, *S. r. adelphe*, with wings 56–61 mm., and breast and abdomen rather bright rufous. Despite a certain resemblance in color to *S. brachyura*, this bird has no whitish area in the middle of the underparts, and thus seems properly placed with the southern species *rufescens*.

We have four skins of *adelphe*, two collected by Grauer at Baraka and in the Ruzizi Plain, two by Rockefeller and Murphy in Marungu. One of the latter is from Mlonde, 3875 feet, the other from Ketendwe, 6050 feet, so it cannot be said not to invade the highlands of the southeastern Congo, provided there are savanna woods. This race was reported from the upper Lufira River by Lynes (1938) and so would seem to be the same as those noted from the vicinity of Lukafu by Neave (1910) as *whytii*, and from Lukonzolwa by Salvadori (1907) as *jacksoni*.

[1] 1898, Bull. Brit. Ornith. Club, vol. 8, p. 48 (Zambesi R., 30 miles above Tete).

Neave found that it was usually solitary and hunted for insects systematically on low trees. Sterling Rockefeller, too, met with it in open savanna woods. Lynes discovered a nest with two young in it, on January 30, near the Lufira River.

Sylvietta whytii jacksoni (Sharpe)

Sylviella jacksoni SHARPE, 1897, Bull. Brit. Ornith. Club, vol. 7, p. 7 (type locality: Kamassia, Kenya Colony).

Sylvietta jacksoni SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 302 (Bukoba Province).

DISTRIBUTION OF THE SPECIES: Portugese East Africa and neighboring lowlands of Southern Rhodesia to Nyasaland, Tanganyika Territory, Kenya Colony, parts of Uganda, and the lake region of southern Abyssinia.

Members of this species differ from *S. brachyura* and *S. rufescens* in having no gray line through the eye, so that there is no distinct light superciliary stripe. *S. w. whytii* replaces *rufescens* in the low country of Portugese East Africa and extends northward at least to Nyasaland and supposedly up the East Coast to Vanga. It has been reported from the Fort Jameson district of Northern Rhodesia by Winterbottom, but I do not think it reaches the Katanga. The underparts of this nominate race are but little tinged with fawn.

From the western side of Lake Nyasa Benson[1] reports both *S. rufescens pallida* and *S. whytii jacksoni*, the latter frequenting *Brachystegia* woodlands, while the representative of *S. rufescens* prefers more open country. *S. w. jacksoni* would thus extend from northern Nyasaland to the interior of Tanganyika, the interior of Kenya Colony, and to Mubendi in Uganda. This race is more rufous on lower surface and face than any of the others.

Sylvietta whytii fischeri (Reichenow) of the Kenya Colony coastlands is a pale-breasted form, close to *whytii;* and *S. w. loringi* Mearns, intermediate in color between *jacksoni* and *fischeri*, occupies an area extending from the base of Kilimanjaro to the Northern Guaso Nyiro. *S. w. abayensis* Mearns of the lake region from Lake Rudolf north to the Hawash River in Abyssinia seems to me very similar to *loringi*.

The only race reaching our territory is *S. w. jacksoni*, of which Rudolf Grauer collected specimens in the Bukoba Province

[1] 1937, Ibis, p. 571; 1940, idem, p. 626; 1942, idem, p. 315; 1944, idem, p. 466.

and between Usuvi and Kisaka, just outside the limits of Ruanda. The Congo Museum has a single specimen from Gabiro. In the Museum of Comparative Zoölogy there is a female secured by John C. Phillips at Kisenyi on Lake Kivu. From Uganda we have a single richly colored example taken as far west as Mubendi, but *jacksoni* is not expected to reach Lake Edward.

Sylvietta whytii jacksoni may thus be expected in the lower parts of Ruanda and Urundi, provided there are sufficient trees, although there is a surprising dearth of records. This rather large, richly colored race is found in East Africa up to an elevation of at least 6500 feet, in open savannas with trees, but not in mountain forests. It often climbs about on the bark like a nuthatch.

Nests found in South Kavirondo by MacInnes[1] were placed from 2 to 8 feet up, in a fork or suspended from the end of a branched twig. They were deep cups, with one lip elongated, and were covered with bits of bark or leaf fragments, so as to look like old disused nests or collections of trash. Jackson found a similar nest, with two eggs, measuring 17 by 12 mm., white heavily spotted with brick red, especially at the obtuse end.

KEY TO THE SPECIES OF *Eremomela* OCCURRING IN OR NEAR THE CONGO

1. Without any black marking on under surface.....2
   With a black band or crescent across fore neck or upper chest.....5
2. Yellow of underparts restricted to breast, abdomen, and under tail-coverts, or mainly to abdomen; throat white or very pale gray.....3
   Yellow of underparts brightest on upper breast and extending as a wash to lower throat; abdomen white or only pale yellow.....*E. scotops*
3. Tail very short, never exceeding 34 mm.....*E. icteropygialis*
   Tail moderately long, 36 to 45 mm.....4
4. Crown gray, lores and ear-coverts blackish.....*E. canescens*
   Crown light gray, lores and ear-coverts light gray.....*E. pusilla*
5. Forehead, supercilium, and usually the greater part of crown deep rufous or chestnut; throat white or cream color.....*E. badiceps*
   Forehead and supercilium light yellowish brown, middle of crown a little grayer; throat bright yellow.....*E. atricollis*

Eremomela icteropygialis salvadorii Reichenow

Eremomela salvadorii REICHENOW, 1891, Jour. Ornith., p. 64 (type locality: Leopoldville, Belgian Congo); 1905, Die Vögel Afrikas, vol. 3, p. 636. BERLIOZ, 1925, Bull. Mus. Hist. Nat. Paris, vol. 31, p. 350 (Luluabourg). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 538 (Lower Congo).

Eremomela pusilla REICHENOW, 1887, Jour. Ornith., p. 306 ("Leopoldville");

[1] 1933, Jour. East Africa Uganda Nat. Hist. Soc., nos. 47–48, p. 132.

1905, Die Vögel Afrikas, vol. 3, p. 637 (in part). HARTERT, 1921, Novitates Zool., vol. 28, p. 120 (in part. Leopoldville).

Eremomela flaviventris SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 335 (Kabambaie).

Eremomela griseoflava salvadorii BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 120.

SPECIMEN: Leopoldville, male, July 6.

ADULT MALE: Iris light brown; bill brownish above, pinkish below; feet very dark gray.

DISTRIBUTION OF THE SPECIES: From the Upper Volta Colony and Asben east to Eritrea and British Somaliland, then south through East Africa to the Cape Province and west to Damaraland, Angola, and the middle Congo River.

The yellow-bellied *Eremomela* has been divided into a dozen or more races, varying in depth of coloration, extent of yellow on underparts, and grayness or greenness of the back. There is not space to discuss them adequately, especially since not more than three races reach the Congo. The birds of the Sudan and Northeast Africa are usually gray or gray brown above, with the yellow of the abdomen pale and not extensive. To this group belong the subspecies *alexanderi* Sclater and Mackworth-Praed (Bahr-el-Abiad west to Upper Volta), *griseoflava* Heuglin (Sennar to Eritrea), and *flavicrissalis* Sharpe (Southern Somaliland and northern Kenya Colony).

The validity of *karamojensis* Stoneham and *crawfurdi* Clarke, from the region between southern Abyssinia and the south shore of Lake Victoria, has recently been questioned.[1]

Eremomela icteropygialis archeri Sclater of British Somaliland differs in having dark gray ear-coverts and a pale yellow wash over most of the breast; thus it seems more like an allied species.

Other races of eastern and southern Africa with grayish backs and rather bright yellow bellies are *abdominalis* Reichenow (southeastern Kenya Colony to central Tanganyika Territory) and *polioxantha* Sharpe (Nyasaland and Katanga to Zululand) The abdomen is paler yellow in *perimacha* Oberholser (Bechuanaland and western Transvaal), *saturatior* Ogilvie-Grant (Karroo districts to Griqualand West), and *icteropygialis* Lafresnaye (Southwest Africa). It seems true that *puellula* Grote of the coast of Angola averages a trifle smaller than *icteropygialis*, and has wings only 50–54 mm.

[1] Grant and Mackworth-Praed, 1941, Bull. Brit. Ornith. Club, vol. 61, pp. 64, 65.

In northwestern Rhodesia and central Angola the back takes on a more greenish color, quite distinct from the gray of the crown. *E. i. salvadorii* of the Middle Congo and Kasai District is green backed, with bright yellow abdomen and lower breast. *E. i. lundae*, ranging perhaps from Mwinilunga in Northern Rhodesia to the Benguella Plateau, would seem to be no more than an intermediate between *salvadorii* and the more grayish-backed *polioxantha*.

Eremomela icteropygialis salvadorii is certainly the most brightly colored subspecies, and it is not uncommon from Leopoldville on the Congo River to the eastern Kasai District, in a region much better watered than most countries occupied by its allies.

Near Leopoldville and Kinshasa, in the bushes and small trees of the savanna, I saw this warbler several times within a few days, in July, 1909, and December, 1914. A specimen taken in July was in non-breeding condition. Father Callewaert sent us six specimens from the vicinity of Luluabourg which do not differ appreciably from my topotype.

[*Eremomela icteropygialis lundae* Grant and Mackworth-Praed]

Eremomela griseoflava lundae GRANT AND MACKWORTH-PRAED, 1941, Bull. Brit. Ornith. Club, vol. 61, p. 62 (type locality: Missão de Luz, Lunda District, Angola).

This race was described as similar to *E. i. polioxantha* except for its olive green mantle and rump. No comparison was made with *salvadorii*, which the authors may have regarded as a distinct species. Mr. C. M. N. White writes me that he has secured specimens at Mwinilunga and Balovale in Northern Rhodesia which are less green above than *salvadorii* from Luluabourg. In the American Museum there are likewise several specimens from the Bihé district of Angola which may be not quite green enough for *salvadorii*.

Thus the race *lundae* would seem to be an intermediate between *salvadorii* and *polioxantha* or *icteropygialis* and to range from the western border of Northern Rhodesia to the Benguella Plateau of Angola. It may even be found to extend into the Lulua District of the southern Congo.

Eremomela icteropygialis polioxantha Sharpe

Eremomela polioxantha SHARPE, 1883, Catalogue of the birds in the British

Museum, vol. 7, p. 160 (type locality: Swaziland, South Africa). NEAVE, 1910, Ibis, p. 151 (Lualaba R.; Lufupa R.).

Eremomela griseoflava polioxantha SCLATER, 1927, Bull. Brit. Ornith. Club, vol. 48, p. 15; 1930, Systema avium Aethiopicarum, pt. 2, p. 537 (Katanga District). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 81 (Kaulu; Elisabethville). GRANT AND M.-PRAED, 1941, Bull. Brit. Ornith. Club, vol. 61, p. 64.

Eremomela icteropygialis polioxantha ROBERTS, 1940, The birds of South Africa, p. 250. VINCENT, 1948, Ibis, p. 293.

DISTRIBUTION: From Zululand north to the eastern Transvaal, Nyasaland, Lusaka in Northern Rhodesia, and the Upper Katanga. I have not examined Neave's specimens, but there would seem to be no doubt as to their correct identification.

In northern Nyasaland Benson[1] found this warbler common, especially in *Brachystegia* woodland, from 1800 feet up to 4500 feet. Its song is a "distinctive little jingle of four syllables, a useful indicator of its presence," and heard at almost all seasons. A nest found by Belcher[2] on October 9 suggested that of *Zosterops*, though shallower. It was a small cup made chiefly of fine grass with some insect cocoons and a mixture of reddish hairy material, fixed between two bare twigs close to some flat dry seeds, and about 15 feet from the ground. The three white eggs were freckled with reddish brown, 16 by 11.5 mm.

Eremomela canescens canescens Antinori

Eremomela canescens ANTINORI, 1864, Catalogo descrittivo, p. 38 (type locality: Djur R., Bahr-el-Ghazal).

Tricholais elegans HARTLAUB, 1882, Abhandl. Naturwiss. Ver. Bremen, vol. 8, p. 190 (Wandi). EMIN, 1919, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 2, pp. 424, 425 (Tobbo). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 3, pp. 237, 238 (Kaia).

Eremomela elegans OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127.

Eremomela elegans canescens SCLATER AND M.-PRAED, 1918, Ibis, p. 672 (Meridi; Mt. Baginzi; Tembura; Yei). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 123. BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 69 (upper Kemo R.).

Eremomela pusilla tessmanni GROTE, 1921, Ornith. Monatsber., p. 84 (type locality: between Nola and Mbaiki, French Equatorial Africa); 1924, Jour. Ornith., p. 502. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 539 ("Ubangi and Uelle rivers"). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 591 (Fort Sibut; Gounguru).

Eremomela pusilla canescens SCLATER, 1930, Systema avium Aethiopicarum,

[1] 1940, Ibis, p. 627.

[2] 1930, The birds of Nyasaland, p. 233.

pt. 2, p. 539 (Bahr-el-Ghazal to L. Albert). BOWEN, 1931, Catalogue of Sudan birds, vol. 2, p. 33. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 121 (Faradje; Dramba; Mauda; Mahagi Port); 1941, Rev. Zool. Bot. Africaines, vol. 34, p. 266. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 567 (Kasenyi). JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 1080.

Eremomela canescens canescens GRANT AND M.-PRAED, 1941, Bull. Brit. Ornith. Club, vol. 61, p. 14.

SPECIMENS: Nzoro, male, April 16. Faradje, two males, March 14, December 28; immature male, October 25; three females, February 20, April 29, December 27. Garamba, female, July 13.

ADULTS: Iris buffy yellow to light yellowish brown, bill black, feet buff.

DISTRIBUTION OF THE SPECIES: Sennar Province and southern Abyssinia west to the eastern border of the Cameroon and south to the Uelle, Lake Albert, and the Kavirondo District.

In the grasslands of western Africa its place is taken by *E. pusilla* Hartlaub, which reaches the Cameroon plateau and Yaunde, and has been said to intergrade with *E. canescens*. According to Bannerman (1939) the race *tessmanni*, supposedly intermediate between them, is really not distinguishable from *canescens*. Reichenow's record of *E. pusilla* from Leopoldville must be erroneous, especially as Grote[1] made no mention of the Congo when stating the range of *E. p. prosphora*.

The races of *E. canescens* are four: *E. c. elegans* Heuglin of the Blue Nile region of the Sudan, rather light colored; *E. c. abyssinica* Bannerman, with upperparts deeper in color, in southern Abyssinia; *E. c. canescens*, crown not quite so dark gray as in *abyssinica*, more yellowish on back and very bright yellow beneath, Shari Basin to northwestern Uganda; and *E. c. elgonensis* Van Someren, rather similar to *elegans* in color, but larger, in highlands of Kenya Colony west of the Great Rift.

As for *tessmanni*, I can only say that I have examined three specimens from near the great bend of the Ubangi and found them very similar to the nominate race, but possibly a little paler gray on the crowns.[2]

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[1] 1925, Jour. Ornith., p. 97.

[2] Two specimens collected in 1952 just west of Fort Archambault convince me that *tessmanni* is valid and that *canescens* is conspecific with *E. pusilla*.

The range of *canescens* extends across the savannas north of the equatorial forest from eastern French Equatorial Africa to the Upper Uelle, Darfur, Mongalla Province, the Acholi country, and Unyoro in Uganda. In the northern Congo it may occur in grasslands of the Ubangi District, and it is well known in those of the Upper Uelle and along the western shore of Lake Albert.

In the northeastern Uelle District we found this warbler common in the dry savanna, where companies of four to six search diligently for insects and their larvae amid the foliage of the gnarled and stunted trees. A short, hoarse call note would be given incessantly. With them, especially about Garamba, we often found associated a family party of *Hyliota f. flavigaster*, two or three creepers (*Salpornis*), a few short-tailed *Sylvietta brachyura*, and less commonly titmice (*Parus niger guineensis*) or other small insectivorous birds. The whole company would travel through the bush in the same general direction and might be compared with the winter association of the downy woodpecker, nuthatch, and chickadee in the eastern United States. In two stomachs examined I noted four or five small caterpillars each time, as well as harder bits of insects in one of them.

Our dissections indicated that *Eremomela canescens* bred at the end of the dry season, for in the Uelle we found birds with enlarged gonads only in February, March, and April. The nest of this race appears not to have been found, but that of the nearly related *elgonensis* is a shallow cup composed of mosses, leaf fragments, and thin twigs, the whole being bound together with cobwebs. It is placed in a bush, about 6 feet from the ground either in a fork or suspended between twigs. One egg may possibly be a complete set. The one described by MacInnes[1] was bright blue green, with a zone of brown spots toward the large end.

Eremomela scotops congensis Reichenow

Eremomela congensis REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 639 (type locality: Leopoldville, Belgian Congo).

Eremomela mentalis REICHENOW, 1887, Jour. Ornith., p. 306 (in part. Leopoldville); 1891, idem, p. 63; 1905, Die Vögel Afrikas, vol. 3, p. 639 (in part. Leopoldville).

Eremomela scotops mentalis SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11,

[1] 1933, Jour. East Africa Uganda Nat. Hist. Soc., nos. 47–48, p. 132.

pp. 335, 397 (Kabambaie; Ngombe in Kasai; Tshisika; Basongo; Macaco; Dumbi; Tshikapa; Kwamouth); 1924, idem, vol. 12, p. 270.

Eremomela scotops congensis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 540. BANNERMAN, 1937, Bull. Brit. Ornith. Club, vol. 57, p. 112; 1939, The birds of tropical West Africa, vol. 5, p. 124. LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 81 (Luluabourg).

DISTRIBUTION OF THE SPECIES: From Natal and Transvaal north to Kenya Colony, the Kagera River, grasslands of the Manyema, and Stanley Pool. About eight races seem recognizable. *E. s. scotops* Sundevall of southeastern Africa, north to southern Nyasaland and southwest Tanganyika Territory has the light yellow of its breast continuing down as a wash over the abdomen; back gray with scarcely a tinge of green. *E. s. occipitalis* (Fischer and Reichenow) of Tanganyika Territory and coastal Kenya Colony is rather similar but smaller, and *E. s. kikuyuensis* Van Someren, like nominate *scotops* but brighter yellow on chest, is restricted to central Kenya Colony.

Eremomela scotops pulchra of southern Angola and the southeastern Congo differs in having the whitish abdomen and lower breast sharply separated from the yellow upper breast, and crown washed with light green, though the back is still gray. *E. s. citriniceps* of the interior of Tanganyika Territory, from South Kavirondo and Unyamwezi to Ruanda and the east shore of Tanganyika is likewise white bellied, but very yellowish over whole crown, though grayish on back.

Eremomela scotops congensis of the Kasai and Middle Congo has again more yellow pigment. Its back is washed with greenish, breast not very bright yellow, but all the lower underparts with a distinct light yellow wash.

Eremomela scotops angolensis Bannerman of northwestern Angola is like *congensis*, but with back grayer and belly a little less yellowish, as would be expected of an intermediate between *congensis* and *pulchra*. In like fashion *E. s. mentalis* tends to bridge the gap between *congensis* and *citriniceps*.

The race *congensis* is not known from the Lower Congo proper but ranges from Leopoldville to Tembo Aluma on the Kwango River and eastward across the Kasai District. It would seem to be very common in the Kasai, and even, according to Schouteden, at Kwamouth in the savanna. Lynes found the haunts and behavior of *congensis* to be similar to those of *pulchra*.

While *E. s. angolensis* might be expected to reach the southwestern Congo, a specimen collected by Ansorge on the Kwango River at latitude 7° 39′ S. is plainly *congensis*.

Eremomela scotops mentalis Reichenow

Eremomela mentalis REICHENOW, 1887, Jour. Ornith., pp. 215, 306, 309 (type locality: Kibondo, Manyema District, Belgian Congo); 1904, Die Vögel Afrikas, vol. 3, p. 639 (in part. Kibondo). O.-GRANT, 1908, Ibis, p. 293 (east of Kasongo, 3000 ft.).

Eremomela scotops mentalis BANNERMAN, 1937, Bull. Brit. Ornith. Club, vol. 57, p. 112.

DISTRIBUTION: From the northwest shore of Lake Tanganyika westward to the Lualaba or to the Lomami River. Rudolf Grauer obtained 11 specimens between Baraka and a point he noted as 300 kilometers to the westward. They do not differ greatly from *pulchra*, though perhaps showing a brighter yellow tint on face and chest. The specimen taken by Carruthers east of Kasongo must have come from the same district as some of Grauer's.

Eremomela scotops citriniceps (Reichenow)

Tricholais citriniceps REICHENOW, 1882, Jour. Ornith., p. 210 (type locality: Kakoma, western Tanganyika Territory).

Eremomela scotops citriniceps SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 540 ("northwest of L. Tanganyika"). GRANT AND M.-PRAED, 1941, Bull. Brit. Ornith. Club, vol. 61, p. 65 ("eastern Belgian Congo").

DISTRIBUTION: From Ufipa and Iringa in Tanganyika Territory north to the Kavirondo Gulf on Lake Victoria, and the Kagera Valley. It occupies the eastern shore of Lake Tanganyika and extends east to Ugogo. The yellow green cap, extending to nape, is quite distinctive, the back is gray, and lower breast white.

Rudolf Grauer collected one specimen between Usuvi and Kisaka, close to the eastern border of Ruanda, and another between the Kagera River and Nsaza, within our limits in eastern Ruanda. Doggett also secured *citriniceps* at Mulema on the southern border of Ankole. Records from the "eastern Belgian Congo," however, must be based on *mentalis* or *pulchra*.

Eremomela scotops pulchra (Bocage)

Tricholais pulchra BOCAGE, 1878, Jor. Sci. Nat. Lisboa, vol. 6, pp. 257, 275 (type locality: Caconda, Benguella, Angola).

Eremomela pulchra NEAVE, 1907, Mem. Proc. Manchester Lit. Phil. Soc., vol. 51, no. 10, p. 68 (Ndola; near Chiwali's); 1910, Ibis, p. 152 (Kambove; upper Lufira R.). DE RIEMAECKER, 1927, Rev. Zool. Africaine, vol. 14, p. 280 (Kifumanshi R.). SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 285 (Elisabethville).

Eremomela scotops pulchra SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 540 (L. Bangweolo). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 81 (Kamina; Katofio).

DISTRIBUTION: Southern Angola and the northern edge of Southwest Africa to Nyasaland, Northern Rhodesia, the Upper Katanga, and Marungu.

In the Katanga this warbler is one of the common birds in the wooded savanna, sociable in habits. Neave collected his specimens at localities between 3500 and 4500 feet and remarked that some individuals might be seen in almost every bird party. In the Marungu *pulchra* was secured by Rockefeller and Murphy at Kinia, 4000 feet, and Lubenga, 5650 feet. They noted the iris as light yellow and reported the birds as numerous and familiar, even in the trees about villages.

Winterbottom[1] found this same warbler to be by far the commonest "nucleus species" of mixed bird parties in Northern Rhodesia, present in 40 to 60 per cent of such associations. The other most usual members were *Hyliota flavigaster barbozae*, *Zosterops senegalensis anderssoni*, and *Parus niger insignis*.

In northern and western Nyasaland Benson[2] noted *E. s. pulchra* as widespread in *Brachystegia* woodland at 3500 to 5000 feet, and sometimes down to 1800 feet. Throughout the year it gives a short, loud trill, and from mid-August to October the male may repeat incessantly a two-noted call or song from the top of a tree, mainly very early in the morning. Nesting is carried on toward October in Northern Rhodesia. Except for the mention by Winterbottom of a nest as placed amid the flowers of a *Poinciana* tree in Barotseland on October 31, I can find nothing on record as to its breeding behavior.

Eremomela atricollis Bocage

Eremomela atricollis BOCAGE, 1894, Jor. Sci. Nat. Lisboa, ser. 2, vol. 3, pp. 153, 162 (type locality: Galanga, Benguella, Angola). NEAVE, 1910, Ibis, p. 152 (Dikulwe R; upper Lufira R.). SCLATER, 1930, Systema avium Aethiopicarum,

[1] 1943, Ibis, pp. 439, 441.

[2] 1940, Ibis, pp. 627, 628.

pt. 2, p. 541. SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 285 (Kafubu R.). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 82 (Katofio; Ndola).

DISTRIBUTION: Highlands of Angola eastward to Northern Rhodesia, the Upper Katanga, and Marungu. The black-collared *Eremomela* is of regular occurrence in the southern Katanga and adjacent sections of Rhodesia, at levels between 3500 and 4500 feet. In the southern Marungu, Rockefeller and Murphy obtained three specimens at Kasoko, 4100 feet, and Kampia, 4525 feet. They noted the species as an active member of mixed flocks of birds in savanna woods. The iris was dark brown, bill black, tarsi dark brown with a yellowish tinge, the toes lighter and more yellowish. Neave compared *atricollis* with *E. scotops pulchra* in habits and considered it much less common than *pulchra*. The breeding season is believed to commence toward November; nests have not been recorded.

Eremomela badiceps badiceps (Fraser)

Sylvia badiceps FRASER, 1842, Proc. Zool. Soc. London, p. 144 (type locality: Clarence, Fernando Po).

Stiphrornis badiceps REICHENOW, 1887, Jour. Ornith., p. 306 (Leopoldville).

Eremomela badiceps SHARPE, 1890, *in* Jameson, Story of the rear column, p. 402 (Yambuya). SHELLEY, 1890, Ibis, p. 160. FLOWER, 1894, Proc. Zool. Soc. London, p. 602 (Ipoto). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 641. DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Kibongo). O.-GRANT, 1908, Ibis, p. 294 (Ponthierville). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 303 (Moera; Beni; Mawambi; Ukaika); 1924, idem, vol. 38, p. 81. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 292; 1920, idem, vol. 7, p. 192 (Temvo); 1926, idem, vol. 13, p. 197.

Eremomela badiceps ituricus GYLDENSTOLPE, 1922, Bull. Brit. Ornith. Club, vol. 43, p. 33 (type locality: Simbo in Ituri forest); 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 145 (Kampi-na-Mambuti); 1926, Arkiv Zool., vol. 19A, no. 1, p. 51. MACDONALD, 1940, Ibis, p. 341.

Eremomela badiceps badiceps SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 335 (Basongo; Macaco; Belenge; Ngombe in Kasai); 1924, idem, vol. 12, p. 418 (Bikoro; Eala); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 121 (Poko; Bondo Mabe). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 541. BANNERMANN, 1939, The birds of tropical West Africa, vol. 5, p. 125 (Angu on Uelle R.; Bwande on Ubangi R.). BOUET, 1942, Ois. Rev. Française Ornith., new ser., vol. 12, p. 47 (Bangui). GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 185 (Luluabourg).

SPECIMENS: Stanleyville, male, November 22. Avakubi, two females, April 14. Bafwabaka, immature male, female, Janu-

ary 11. Gamangui, male, female, February 2. Medje, male, April 1; immature male, January 13; female, May 28.

ADULTS: Iris dark brown, bill black, feet light brownish pink with claws dark gray.

DISTRIBUTION OF THE SPECIES: From Sierra Leone, supposedly, and the Gold Coast, the island of Fernando Po, and Cameroon, east to the Imatong Mountains, southern Sudan, the Yala River in Kenya Colony, and the Manyema forest. To the southward it reaches the Kasai District and Ndala Tando in Angola.

An Upper Guinea race, *E. b. fantiensis* Macdonald,[1] is supposedly more creamy white on the middle of underparts than the nominate race of Fernando Po. I can find no consistent difference in color between the island birds and those of the Cameroon, Ituri, Kasai, and northern Angola. While the wings of Fernando Po specimens average 2 mm. longer than those of the Cameroon, Gaboon, and Ituri, they are equaled by others from the Kasai and northern Angola. The race *iturica* seems to have no standing, and I regard *E. b. badiceps* as ranging from Fernando Po to the northeastern Ituri, Semliki Valley, the Manyema and Kasai districts, and northern Angola. A single male from Oguta, Southern Nigeria, collected by Ansorge, appears to be rather small, with wing 51 mm. and tail 31 mm., yet agrees in color with Cameroon birds.

Specimens from the foothills of the Imatong Mountains[2] are said by Macdonald to be unusually white on throat and underparts, with fore crown less chestnut than in *badiceps*. But they are not *E. b. turneri*, a well-marked race of North Kavirondo, small, with bill of reduced size, and the rufous of forehead scarcely reaching the middle of the crown, though it extends back as a stripe to the temporal region.

The chestnut-capped *Eremomela* is widely distributed in forested Lower Guinea and does not invade the mountain forests. It extends far out in the gallery forests of the Kasai, but less so into those of the Uelle. Its particular habitat is about clearings in the forest, so we must regard it as a bird of second growth. In the Ituri it is a fairly common though inconspicuous bird, found in parties of four or five, hopping about the leafy boughs of trees, often

[1] 1940, Ibis, p. 341 (Prahsu, Gold Coast).

[2] Now described as *E. b. latukae* Hall. 1949. Bull. Brit. Ornith. Club. vol. 69. p. 76 (near Katire).

small trees growing close to villages and posts. Weak twittering calls are all they seem to give.

Elsewhere in the Congo the behavior is always the same. I have seen the species in the central Semliki Valley, and Schouteden has reported it from the Mayombe, the Middle Congo, and the Kasai. Father Callewaert has sent us skins from Luluabourg, and Rockefeller and Murphy collected one at Kama on the Elila River. While sociable with its own kind, this warbler is not to be seen with mixed bird parties in virgin forest. Insects provide all its food, and in one stomach we noted winged ants.

In the juvenal plumage the chest band is but faintly indicated, no darker gray than the flanks, and throat and breast are creamy yellowish. Crown, back, and wings are dull brown, slightly olivaceous. Birds in adult plumage are frequently found with skulls suggesting immaturity. Either sexual maturity is very rapidly attained, or the skull roof shares the peculiarity seen in *Vidua* and *Salpornis*.

Near the Equator nesting must continue irregularly throughout most of the year. We examined birds in condition to breed, between Stanleyville and Medje, in February, April, and late November. The nest remains unknown.

[*Eremomela badiceps turneri* Van Someren]

Eremomela badiceps turneri VAN SOMEREN, 1920, Bull. Brit. Ornith. Club, vol. 40, p. 92 (type locality: Yala River, Kavirondo District, Kenya Colony). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 541 (Nyondo Forest). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1083.

This very distinctive race is known from very few localities in the Kavirondo District, yet there is said to be one specimen in the British Museum taken by T. V. Fox in the "Nyondo forest on the Uganda-Congo border." Fox collected birds in the Rukiga district of southwestern Uganda and on the Kazinga Channel. It seems certain now that his "Nyondo" is really a forested ridge in the Kayonsa area just east of the Rutshuru Valley. The range of *turneri* would thus include some wooded country above 5000 feet in the southwest corner of Uganda, and it may well extend into the adjacent part of the Kivu District. But this race has not been found at lower levels in central Uganda. In any case, the race *turneri* seems to live in highlands near 5000 feet and should be looked for near the eastern edge of the Kivu District.

Phyllolais pulchella (Cretzschmar)

Malurus pulchellus CRETZSCHMAR, 1830, Atlas zu der Reise im nördlichen Afrika, Vögel, p. 53, p. 25 (type locality: Kordofan).

Phyllolais pulchella HARTLAUB, 1882, Abhandl. Naturwiss. Ver. Bremen, vol. 8, p. 190 (Langomeri). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 144 (Kasenyi). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 530. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 121 (Mahagi Port); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 98; 1939, Bull. Cercle Zool. Congolais, vol. 16, p. 35; 1941, Rev. Zool. Bot. Africaines, vol. 34, pp. 266, 365. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 178. JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 1069. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 105, fig. 24.

Apalis pulchella REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 610 (Nyangabo); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 363 (northeast Ruanda; Katwe). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 360 (Mokia). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 292 (Masidongo).

Phyllolais pulchellus NEUMANN, 1906, Jour. Ornith., p. 277 (L. Edward).

SPECIMENS: Faradje, three males, May 6, October 12; two immature males, October 12; three females, July 29, October 12.

ADULTS: Iris light brown, rim of eyelids pinkish buff; bill grayish pink; feet buff.

DISTRIBUTION: Northeastern Africa from Eritrea, lower parts of Abyssinia and British Somaliland to Kordofan and Lake Chad, the Upper Uelle District, Rutshuru Plain, Kavirondo District, and the base of Mt. Meru in Tanganyika Territory. Rare or absent in the arid northeastern section of Kenya Colony. There seems to be no real difference in color over this wide area.

The buff-bellied warbler is a lowland bird, occurring in Abyssinia only below 4500 feet, but reported by Van Someren from Burnt Forest in Kenya Colony, above 6000 feet. Granvik likewise found it up to 6500 feet on the base of Mt. Elgon. In the northeastern Congo it is restricted to savannas with thinly foliaged acacia trees, usually below 5000 feet.

In the Uelle we found it only in the vicinity of Faradje, Nzoro, and Aba; it occurs also along the western shore of Lake Albert, in the open woods of the upper Semliki Valley, and around the southern base of Ruwenzori. Rudolf Grauer secured five specimens on the southern shore of Lake Edward and in the Rutshuru Plain, but none has been observed in the Kivu highlands. The record by Schubotz from "northeast Ruanda" was evidently based

on a specimen from the lower Kagera Valley, east of the present boundary of Ruanda.

In the Uelle parties of from three to five would be seen hopping about in the delicate, lace-like foliage of certain thorny acacia trees—indeed I never saw them in any other kind of tree. The same was true near Kasindi, just north of Lake Edward. Usually they kept quite silent, but one was heard uttering a short, dry attempt at a trill. Emin remarked that the song was very pleasant and surprisingly loud in view of the small size of the bird.

In three stomachs we found nothing but fragments of tiny insects. The nesting season in the Uelle must coincide with the first half of the rains, for breeding individuals were taken in May and late July. Adults collected in October had ceased their sexual activity and were accompanied by fully grown young. In Karamoja, northeast Uganda, Paget-Wilkes[1] found that they bred during the rains, hanging closely woven, purse-shaped nests in thorn bushes or trees, from 4 to 30 feet up. The eggs were regularly two, light green ("eau-du-Nil") with chocolate spots mainly at the large end.

KEY TO THE SPECIES OF *Apalis* IN OR NEAR THE CONGO

1. A black or gray band across fore neck or chest; throat white, buff, or rufous. 2
   No distinct dark band across chest region, although whole throat may be dark colored. 6
2. Band across fore neck or chest gray. 3
   Chest band black. 4
3. Chest band well marked, no conspicuous white areas on tail. *A. ruwenzorii*
   Gray patch on fore neck not very distinct, conspicuous white areas on outer rectrices. *A. nigriceps*
4. Crown black, contrasting with green or yellowish back. *A. nigriceps*
   Crown gray, greenish, or brown. 5
5. Crown gray, very like back; tail at least 52 mm. long, with only 10 rectrices. *A. pulchra*
   Crown more brownish than back; tail not more than 50 mm. long, with 12 rectrices. *A. thoracica*
6. Throat black or rather dark gray, lower underparts whitish, yellow, or greenish. 7
   Throat whitish, pale gray, buffy, or chestnut. 10
7. Tail greenish, without white patches. *A. binotata*
   White areas on outer rectrices. 8
8. Throat black or gray, with a conspicuous white stripe at each side. *A. jacksoni*
   Throat whitish or gray, with no white stripe at side. 9

[1] 1938, Ibis, pp. 125, 126.

9. Whole throat and fore neck slaty gray, crown and back dark gray..... ..... *A. rufogularis*
Throat white, often a diffuse gray patch in middle of fore neck; crown gray, but back green or yellowish..... *A. nigriceps*
10. Throat cinnamon buff to chestnut..... 11
Throat white, light gray, or faintly buffy at most..... 12
11. Three or four outer pairs of rectrices largely white; lower back and rump washed with green..... *A. rufogularis*
Outer rectrices with only narrow tips of grayish white; lower back not greenish..... *A. porphyrolaema*
12. A broad yellow or greenish band across chest, sometimes with a black spot in middle; back greenish..... *A. flavida*
No yellow or greenish band across chest..... 13
13. Crown, back, and wings brownish black..... *A. rufogularis*
Upperparts not blackish..... 14
14. Crown somewhat browner than the gray back..... 15
Crown gray, back gray or dull greenish..... 16
15. Outer rectrices largely white..... *A. cinerea*
Outer rectrices only tipped with white..... *A. alticola*
16. No white areas on outer rectrices..... 17
Conspicuous white areas on outer rectrices, or some of them wholly white.. 18
17. Back dull greenish, a little greenish yellow on abdomen and under tail-coverts..... *A. schoutedeni*
Back gray, little lighter than crown; no green or yellow on abdominal region..... *A. goslingi*
18. Back gray, very like crown..... *A. argentea*
Back and rump dull grayish green, unlike gray crown..... *A. eidos*

Apalis flavida neglecta (Alexander)

Chlorodyta neglecta ALEXANDER, 1900, Bull. Brit. Ornith. Club, vol. 10, p. 17 (Southeast Africa; type from Zambesi R.).

Eremomela caniceps NEAVE, 1910, Ibis, p. 152 (Bunkeya R.).

Apalis flavida neglecta SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 285 (Kafubu R.). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 80 (Elisabethville; upper Lufira R.).

Apalis caniceps neglecta GRANT AND M.-PRAED, 1941, Bull. Brit. Ornith. Club, vol. 61, p. 44. A. W. VINCENT, 1948, Ibis, p. 290.

DISTRIBUTION OF THE SPECIES: From the savannas of Upper Guinea to Somaliland and south to the Cape Province, but not in Lower Guinea forests. The most complete recent review of the races is that by Grant and Mackworth-Praed (1941), but I cannot agree that there are two distinct species. The tail varies geographically in length and in the amount of yellow on its quills. Males of several races have a black spot in the middle of the breast, lacking in females, and not developed in males of some other races.

Apalis flavida flavida (Strickland), a brightly colored form with the yellow of its chest extending up over almost the whole throat, ranges from Ngamiland and Damaraland to southern Angola. *A. f. florisuga* (Reichenow), paler below, with whitish throat and no breast spot in the male, is found from eastern Cape Province to the upland woods of Natal. *A. f. neglecta*, with hind crown usually greenish, a slight wash of yellow on lower throat, and black breast spot in the male, extends from Zululand and the Transvaal at least to the Katanga. Its wing measures 46–55 mm., tail 39–54 mm. *A. f. tenerrima* Grote is similarly colored, but whole crown gray, wings only 45–50 mm., tail 39–45 mm. It occupies the coastal area of East Africa from Mombasa to northern Mozambique.

Apalis flavida golzi, with more yellow on outer rectrices, wing 46–55 mm., tail 45–55 mm., replaces *tenerrima* in the interior of Tanganyika Territory and about the Taita Hills. *A. f. flavocincta* (Sharpe), with more green on hind crown, wings 47–57 mm. and tail 42–60 mm., occupies the open highlands of Kenya Colony and may reach Manda Island. The race *aequatorialis*, supposed to have grayer hind crown and to live west of the Great Rift, is probably not valid.

Apalis flavida malensis Neumann is another long-tailed race of rather pale color from northwest Kenya Colony and southern Abyssinia. *A. f. viridiceps* Hawker, with long tail and greener throughout, is restricted to Somaliland. *A. f. caniceps* has a short tail, only 31–44 mm., is rather light in color, with wholly gray crown and the breast spot very faint or wanting. It seems to range from Portuguese Guinea to Uganda, also to the Gaboon and Lower Congo.

The race *neglecta* certainly occurs in the Upper Katanga, where Neave and others collected it at levels between 3000 and 4000 feet. Seven specimens taken by Rudolf Grauer near Baraka on Lake Tanganyika and in the savanna just to the west resemble *neglecta*, but the hind crown is usually without green. Males of *neglecta* have conspicuous black breast spots, wings 51.5–52.5 mm. and tails 42–45.5 mm. long, without much yellow on outer rectrices. Females have wings 46–50 mm., tails 36–39 mm.

In the Upper Katanga Lynes found *neglecta* a fairly common inhabitant of the savanna woods, and it is likely to occur in thicker

growth along streams. The song call has been described by Benson[1] as a bi-syllabic "chierrer," repeated some half dozen times, and it has a scolding alarm note.

Alfred Vincent took eggs near Elisabethville in October. In Nyasaland the breeding season seems to extend from September to May, according to Benson,[2] and the birds may use old nests of weavers, which they reline, or they may build their own deep cup in some small tree. Belcher found a set of two eggs in an old nest of *Pytilia* or some related weaver-finch.

According to Vincent, the eggs are pale bluish green rather closely speckled with brownish red and with some fine markings of violet; their dimensions are 16.9–17.1 by 11.6–11.7 mm.

Apalis flavida golzi (Fischer and Reichenow)

Euprinodes golzi FISCHER AND REICHENOW, 1884, Jour. Ornith., p. 182 (type locality: Great Arusha, Tanganyika Territory).

Apalis golzi SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 301 (Kisaka).

Apalis flavida aequatorialis VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 222 ("Kivu district"). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1057.

Apalis flavida flavocincta GRANT AND M.-PRAED, 1941, Bull. Brit. Ornith. Club, vol. 61, p. 42 (southwestern Uganda).

DISTRIBUTION: Highlands near Kilimanjaro and the Taita Hills to Iringa, Kigoma on the eastern shore of Lake Tanganyika, and apparently the Kagera Valley west of Lake Victoria.

This race has considerable yellow on outer rectrices and resembles *flavocincta* of the Kenya highlands, though it is grayer on the hind crown and not quite so long tailed. In the Rothschild collection there are one specimen taken by Emin at Bussisi on the south shore of Lake Victoria, and another, apparently of this race, collected by Grauer at Kitengule on the Kagera River. Sassi reported *golzi* from the Kisaka district, within our limits in eastern Ruanda, and the supposed records of *aequatorialis* and *flavocincta* in southwestern Uganda and the Kivu are doubtless based on similar birds. I have never seen such a bird from the Belgian Kivu.

Near the coast of Tanganyika Territory *golzi* seems characteristic of higher levels, and it ranges far to the westward, while *tenerrima*, with shorter, greener tail, is restricted to the lowlands

[1] 1937, Ibis, p. 571.

[2] 1944, Ibis, p. 466.

near the sea. In the Kivu no race is known to inhabit the higher altitudes; the basin of the Kagera is occupied by *golzi*, the Manyema savanna by *neglecta*, and the Rutshuru Valley by *caniceps*.

The song call of *golzi* in Tanganyika Territory was described by the Moreaus as a ringing "tsirri" several times repeated, the alarm note as a low-pitched "churr," almost a buzzing. A nest found by them at Mkomasi in early November was a minute cup, with one edge slightly elevated, in the head of a pollarded thorn bush. The contents were three pinkish white eggs, thickly and finely spotted with red brown, which coalesced at the blunt end in a disc.

Apalis flavida caniceps (Cassin)

Camaroptera caniceps CASSIN, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 38 (type locality: Camma R., Gaboon).

Tricholais flavotorquata HARTLAUB, 1880, Proc. Zool. Soc. London, p. 624 (type locality: Magungo, on lower Victoria Nile); 1881, Abhandl. Naturwiss. Ver. Bremen, vol. 7, p. 95.

Eremomela caniceps SHARPE, 1883, Catalogue of the birds in the British Museum, vol. 7, p. 164 (Landana). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 365. SCLATER AND M.-PRAED, 1918, Ibis, p. 673 (Tembura). PETIT, 1926, Dix années de chasses, p. 120 (near Boma).

Apalis caniceps O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 358 (Beni). SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 197 (Banana). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 93, pl. 2.

Tricholais caniceps EMIN, 1922, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 3, p. 366 (south of Tunguru on L. Albert).

Apalis flavida uamensis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 524.

Apalis flavida flavotorquata SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 120. JACKSON, 1938, The birds of Kenya Colony and ... Uganda, vol. 2, p. 1057 (Semliki and Uelle districts).

Apalis caniceps caniceps GRANT AND M.-PRAED, 1941, Bull. Brit. Ornith. Club, vol. 61, p. 43.

SPECIMEN: Nzoro, male, April 3.

ADULT MALE: Iris bright hazel brown, rim of eyelids light brown; bill black, with cutting edges of maxilla and mandible whitish; feet pinkish buff, claws dark gray.

DISTRIBUTION: Savannas of the Lower Congo and Gaboon, also those just north of the forest belt from the Gold Coast and perhaps Portuguese Guinea eastward to the Ubangi-Shari District, southern Bahr-el-Ghazal, Upper Uelle, central Uganda, and perhaps Kisumu. It extends southward, too, along the west

shore of Lake Albert, in the more open parts of the Semliki Valley, to the lower Rutshuru Plain.

There seems to be no appreciable difference between specimens from the Gaboon-Congo coast and those of the northeastern Congo and Uganda, so the names *flavotorquata* Hartlaub and *uamensis* Reichenow may be regarded as synonyms of *caniceps*. The species has never been found in the Cameroon-Congo forest, yet this race appears to have made its way along the west coast across the Equator.

My specimen from near Nzoro was the only individual I ever noticed in the Uelle. It was feeding silently among the branches in a strip of woods a few miles north of the Kibali River. In 1924 Dr. John C. Phillips brought back a pair from the Rutshuru Plain to the Museum of Comparative Zoölogy, and in May, 1927, I myself collected an adult male there, between Kalimbo and Mai-na-Ivi. The males from the Rutshuru Plain show only a faint trace of a dusky breast spot; that from Nzoro has none.

It would seem that *Apalis f. caniceps* is nowhere a common bird in the Congo. It inhabits savannas with many trees, not too densely leaved. My bird from the Rutshuru Plain was perched on an upper branch in an acacia, singing "chip-ip, chip-ip chip-ip. . ." in much the manner of *Camaroptera brevicaudata*, but each note was distinctly double. Breeding would seem to begin very early in the rains, but we know nothing as to the length of the season, and no nest of this race has been described.

Apalis goslingi goslingi Alexander

Apalis goslingi ALEXANDER, 1908, Bull. Brit. Ornith. Club, vol. 21, p. 89 (type locality: Guruba R., Uelle District, Belgian Congo).

Apalis porphyrolaema goslingi BATES, 1930, Handbook of the birds of West Africa, p. 369. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 526. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 120.

Apalis goslingi goslingi BOULTON, 1931, Ann. Carnegie Mus., vol. 21, pp. 53, 54 (Ituri R. near Penge and Avakubi; Lindi R.). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 98.

SPECIMENS: Lindi River near Stanleyville, female, September 30. Avakubi, two males, August 15, 17; three immature males, August 17, October 15; two females, February 10, October 15. Penge, female, April 27.

ADULTS: Iris light yellowish brown, rim of eyelids slightly tinged with reddish; bill black; feet pinkish buff.

IMMATURE: Iris and rim of eyelids dull greenish gray; bill dusky greenish, corners of mouth yellow; feet pale buff.

DISTRIBUTION OF THE SPECIES: Ituri and Uelle districts west to the forested Cameroon and the Ivory Coast. The nominate race is restricted to Lower Guinea, while *A. g. hardyi* Bannerman is known by only a single example from Bandama in the Ivory Coast Colony.

Apalis goslingi goslingi is a small, ashy gray warbler, darker above than on underparts, though only the throat, under wing-coverts, and middle of abdomen are whitish. The adult male differs from the female in having dusky lores and ear-coverts. Young in their first plumage have the upperparts washed with greenish, the throat and middle of underparts pale yellow. Two adult males have wing 47, 47.5 mm.; tail 40, 40.5 mm.; culmen to base 12.5, 13 mm.; metatarsus 16.5, 17 mm. Four adult females: wing, 43.5–45 mm.; tail 33–35; culmen to base, 12–13; metatarsus 15.5–16.5.

Apalis goslingi hardyi differs in being washed with olive on back and wing-coverts, while chin and throat are deep buff. *A. schoutedeni* also seems to be closely allied to *goslingi*, despite its yellow anal region and under tail-coverts.

Apalis goslingi is not a near relative of *A. porphyrolaema*, but a lowland bird which may be expected over a large part of the Upper Congo forest. Thus far it has been taken at very few places, from the Ituri River northward to the Gurba River, which flows into the Uelle from the north, near Surunga, and westward to the vicinity of Stanleyville. But since Bates collected two examples near the Ja River in Cameroon we may be sure that it ranges across the greater part of the Lower Guinea forest.

This warbler is strictly confined to wooded river banks. I found it common along the Ituri, often in small family parties. What serves as a song is a fairly loud "chwî-chwî-chwî-chwî . . . " repeated rapidly from three to seven times, often rather dry, but frequently with a decidedly ringing quality. Going down the Aruwimi by canoe, we also heard this song from time to time, but usually the bird is hidden by the foliage, and the boat goes by so quickly that a special effort is required to secure a specimen.

There is apparently a definite breeding season in the beginning and middle of the rainy season. We took adults with enlarged gonads in the Ituri District in April and August, young birds

in August and October, non-breeding adults in October and February.

The four stomachs of which I noted the contents held only insect remains and one spider. Small caterpillars (five in all) had been eaten by three of the birds, while the elytra of a small beetle and an insect egg were also noticed.

Apalis schoutedeni Chapin

Apalis schoutedeni CHAPIN, 1937, Rev. Zool. Bot. Africaines, vol. 29, p. 393 (type locality: Tshikapa in Kasai District, Belgian Congo).

This warbler is still known only from the type, apparently not yet adult, which was collected by Schouteden on October 23, 1921. It was sexed as a male. The upperparts are uniform gray, with a faint tinge of olive, the median rectices becoming faintly darker toward their tips. Along the supraloral region runs a line of pale gray, and the cheeks are lighter than the crown, their color merging gradually with the grayish white of chin and throat. Chest and flanks are somewhat grayer than the throat, the middle of lower breast whitish. Abdomen, posterior end of flanks, and under tail-coverts are pale lemon-yellow. Under wing-coverts white, inner margins of remiges grayish white. Rectrices 12; the three outer pairs with distinct small terminal spots of pale gray. Wing 47 mm.; tail 37 mm., outermost rectrices 12 mm. shorter than the median; culmen to base 12; metatarsus 16. Iris brown, beak horn-brown, feet brownish yellow.

In size and general appearance this bird is close to *Apalis g. goslingi*, differing mainly in its yellowish abdomen. More specimens will be needed before we can say whether or not it is to be regarded as conspecific. There is a gallery forest at Tshikapa, and Schouteden tells me that it may well have been collected along the river bank, and thus agree in haunts with *goslingi*.

Apalis eidos Peters and Loveridge

Apalis eidos PETERS AND LOVERIDGE, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 252 (type locality: Upper Mulinga R., Idjwi Island, L. Kivu). PETERS, 1943, Bull. Mus. Comp. Zool., vol. 92, p. 88.

DISTRIBUTION: Known only from Idjwi Island, at an elevation of 6500 feet, where there are remnants of mountain forest. Eight

specimens were collected in 1939 by Arthur Loveridge; they include adults of both sexes and one young bird.

This is a rather small grayish warbler, with three outer pairs of rectrices pure white, the fourth largely white, central ones gray. The tail has 12 quills, the outermost pair being very small. Crown and cheeks are dark gray, back and rump dull grayish green, wings grayer. Under surface whitish, shading to pale gray on sides of breast and to pale greenish on posterior flanks, under tail-coverts white. Wing 44.5–48 mm., tail 43–48.

It would not be safe to predict its occurrence on other mountains in the Kivu area, but *Apalis eidos* is most nearly related to *A. argentea* of the Kungwe highland near Lake Tanganyika.

[*Apalis argentea* Moreau]

Apalis argentea MOREAU, 1941, Bull. Brit. Ornith. Club, vol. 61, p. 47 (type locality: forest at 6900 ft., above Ujamba, Mt. Kungwe, on east shore of L. Tanganyika). ZIMMER AND MAYR, 1943, Auk, pp. 258, 261.

Known only from the Kungwe highland and the Nyamansi, Lukolansala and Katuna rivers to the eastward. *Apalis argentea* is dark ashy gray above, light gray on sides of breast, changing gradually to grayish white on throat and belly, pure white on under tail-coverts. Rectrices 12, three outermost pure white, fourth only narrowly margined with sooty on outer web. Tail rounded, and outermost quill only 24 mm. long. Wings of males 49–50 mm., tail 49–55, culmen to base 14, metatarsus 19. The species is scarcely expected to reach our limits.

Apalis porphyrolaema affinis Ogilvie-Grant

Apalis affinis OGILVIE-GRANT, 1906, Bull. Brit. Ornith. Club, vol. 16, p. 116 (type locality: Mubuku Valley, 6000 ft., east Ruwenzori); 1910, Trans. Zool. Soc. London, vol. 19, p. 358, pl. 14, fig. 2. BANNERMAN AND BATES, 1924, Ibis, p. 240.

Apalis porphyrolaema JACKSON, 1906, Ibis, p. 546 (Ruwenzori).

Apalis porphyrolaema affinis VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 221. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 526. BOULTON, 1931, Ann. Carnegie Mus., vol. 21, p. 54 (Kalongi on Ruwenzori). GRANVIK, 1934, Rev. Zool. Bot. Africaines, vol. 25, p. 96. JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 1063 (Ruwenzori; Ruchiga).

DISTRIBUTION OF THE SPECIES: Highlands of eastern Africa, from Mt. Elgon and Mt. Kenya to the Uluguru Mountains and Nyasaland, those of the eastern Congo, and of the Cameroon.

Apalis porphyrolaema porphyrolaema Reichenow and Neumann, of Kenya Colony west to Elgon and Nandi, is a long-tailed race, mostly gray, with a rufous patch restricted to chin and throat, the facial area being dark gray. *A. p. affinis* is similar, with the rufous throat patch a shade deeper; it occupies the Ruwenzori Range and probably the Kivu District. *A. p. vulcanorum*, described from a single female taken on Mt. Sabinyo in the Kivu, was supposedly tinged with olive on the back and rump. That was probably only a sign of immaturity.

Apalis porphyrolaema chapini Friedmann of the Nguru and Uluguru Mountains in Tanganyika Territory differs from the preceding races in having forehead and cheeks rich auburn, chin and upper throat pure white, lower throat and breast cinnamon buff, remaining underparts whitish. *A. p. strausae* Boulton, of Rungwe and adjacent highlands north of Lake Nyasa, differs from *chapini* mainly in having the chin and whole throat rufous instead of white. *A. p. bensoni* (Vincent), of the mountains west of Lake Nyasa, south to the Dedza district, is closely allied to *strausae*, but has the chestnut color of throat and chin deeper and richer, and the crown more rufous.

While *A. p. bamendae* Bannerman, of the Cameroon highlands, resembles *strausae* and *bensoni* in having chin, throat, and facial region rufous, it differs markedly in its shorter tail, only 37–44 mm. long. Even if *bamendae* were regarded as a valid species, I should prefer to keep the longer-tailed eastern birds with rufous cheeks as races of *A. porphyrolaema*, since their tails measure between 45 and 53 mm. The tail of nominate *porphyrolaema* varies from 49 to 66 mm.

On west Ruwenzori this warbler is not numerous, though seen occasionally in pairs or small family groups between 6900 feet near the hamlet of Kalongi and 8950 feet near the upper edge of bamboos on the Bugongo Ridge. Three of our four specimens were shot by De Witt Sage, who found them foraging among leafy boughs of trees in open spots as well as in the forest.

Adults have the iris light ochreous brown, rim of eyelids brownish pink; bill black; feet light pinkish buff, with claws dark gray. Stomachs contained only the remains of small insects. One male on November 26 was in condition to breed, and an immature bird in complete juvenal dress was taken on December 5. But I should not expect the breeding season to be a short one. The nest awaits discovery.

[*Apalis porphyrolaema vulcanorum* Gyldenstolpe]

Apalis porphyrolaema vulcanorum GYLDENSTOLPE, 1922, Bull. Brit. Ornith. Club, vol. 43, p. 34 (type locality: Mt. Sabinyo in Kivu Volcanoes, 3600 m.); 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 140; 1926, Arkiv Zool., vol. 19A, no. 1, p. 50. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 526. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 312.

Apalis porphyrolaema affinis BOULTON, 1931, Ann. Carnegie Mus., vol. 21, p. 54 (in part. Lubero).

Apalis porphyrolaema GRANVIK, 1934, Rev. Zool. Bot. Africaines, vol. 25, p. 96.

Apalis porphyroloema BERLIOZ, 1936, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 8, p. 332 (Mbwahi).

This race may prove untenable, for Granvik (1934), after examining the type, pronounced it very similar to immature specimens of *A. p. porphyrolaema*. Jackson and Sclater (1938) found that an example of the species from Ruchiga in southwestern Uganda was indistinguishable from *affinis;* and Marquess Hachisuka tells me of having collected one adult on Mt. Mikeno, above the bamboo zone. The coloration and wing length of this bird seem very like those of *affinis*.

Yet there remains a possibility that a local race may exist somewhere in the Kivu District. An adult male which I secured near Lubero on March 13, 1927, differs noticeably from any Ruwenzori specimen I have seen. It has the same dark gray forehead and facial area and deep chestnut throat, but the sides of the chest are rather darker gray, and the ruddy color of the throat continues down the middle of the upper breast as a light wash over the gray. The under tail-coverts, too, are tipped with rufous. I see no trace of olive on the dark gray upperparts.

The species occurs also on the mountains west of Lake Kivu, for Berlioz reported three males as taken by Babault at Mbwahi. He did not attempt to give a subspecific name for them. It must be uncommon on the volcanoes themselves, and I did not notice it there.

Apalis rufogularis nigrescens (Jackson)

Euprinodes nigrescens JACKSON, 1906, Bull. Brit. Ornith. Club, vol. 16, p. 90 ("Ruwenzori," but type supposedly from Toro or Ankole); 1906, Ibis, p. 547 ("Ruwenzori"). HARTERT, 1907, Bull. Brit. Ornith. Club, vol. 19, p. 94 (Mpanga Forest). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 143 (Kartushi; Kampi-na-Mambuti).

Apalis denti O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 357, pl. 14, fig. 3 (type locality: Mpanga Forest, 5000 ft., Uganda).

Apalis rufogularis denti SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 300 (Moera; Beni).

Apalis nigrescens SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 301 (Beni).

Apalis rufogularis rufogularis SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 334 (Ngombe in Kasai).

Apalis rufogularis nigrescens SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 334 (Basongo); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 120 (Kotili). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 521. JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 1052.

Euprinodes olivaceus GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 143 (Kampi-na-Mambuti).

Euprinodes rufogularis rufogularis GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 142 (Kartushi; Kampi-na-Mambuti).

SPECIMENS: Avakubi, two males, April 5, October 12. Ngayu, male, female, December 13. Medje, two males, January 13, September 4.

ADULTS OF BOTH SEXES: Iris red-brown; bill black; feet light brown, slightly reddish, claws gray.

DISTRIBUTION OF THE SPECIES: From Ilorin Province, Southern Nigeria, and the island of Fernando Po eastward to Uganda and the Kavirondo District, also south to the Amboim District of Angola and the southeastern Lulua District of the Congo.

Specimens from Fernando Po are believed not to differ from those of the adjacent mainland. In that region the males have throat and upper chest uniform gray, almost as dark as the gray of crown and back, and separated by a black margin from the buffy whitish middle of the breast. Females are so different that they were long held to be of another species. Their throat and fore neck are cinnamon rufous fading to white on lower breast; the crown is gray, and back dull greenish.

Thus *Apalis rufogularis rufogularis* may be said to range from Southern Nigeria and Fernando Po to the Gaboon and perhaps the Mayombe, also far into the Cameroon. In the Upper Congo forest males become entirely blackish brown above, with buffy whitish throats, though the bases of the feathers there are blackish. This race is *A. r. nigrescens*. The females have light rufous throats, but the crown is darker and more brownish than in the nominate race. While it is well known from the forests of Uganda, the western limit of *nigrescens* has yet to be fixed.

Apalis rufogularis angolensis of northern Angola is gray on crown and back in both sexes, the males with whitish throats,

females very pale cinnamon on that part. Its range extends to the southeastern Congo. Farther south in Angola, in the Amboim district, there appears to be another race, *A. r. brauni* Stresemann,[1] still lighter in color.

The Upper Congo race, *nigrescens*, with blackish back in males, is known from as far west as Basongo on the Kasai River, and it may possibly reach Lukolela, where a very young fledgling of the species was brought to me by natives in October, 1930. To the north it must reach the Upper Uelle District, and on the south the southern Kasai. Rather common on the edge of the forest near Irumu and Beni, it extends to the isolated forest areas of Uganda: the Budongo, Bugoma, and Mabira forests, even to the base of Mt. Elgon and suitable woodlands in North Kavirondo.

It seems certain that the specimens from North Kavirondo and Uganda are whiter on the belly and flanks than some of those from the northeastern Congo. Six Kavirondo males have wings 50–53 mm., five from the Ituri 48–50; but others from the Mpanga, Budongo, and Mabira forests are of intermediate size. Since there is no sharp line of cleavage, I see no point in naming another race.

This warbler (in my experience) is not a bird of virgin forest, but rather of tall second-growth woods below 5000 feet, where it flits about at 15 to 40 feet above the ground, showing the white areas of its tail conspicuously. Many times have I seen the black-backed male accompanied by his rufous-throated mate, and near Irumu in September, 1926, I collected both birds of such a pair. They do not form parties larger than a single family, nor do they join in mixed bird parties, although they may sometimes be noticed in the same tree with *Apalis nigriceps*. A male of *nigrescens* was once heard repeating a short, slightly sibilant "cheeping" sound.

The nesting season appeared to extend through a large part of the year, in the Ituri District, for all our specimens were in condition to breed or very near it. Males with especially large gonads were taken in January, September, and October. The single stomach examined was found to contain a small caterpillar and a beetle.

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[1] 1934, Ornith. Monatsber., p. 156 (Roça Congulu).

[*Apalis rufogularis rufogularis* (Fraser)]

Drymoica rufogularis FRASER, 1843, Proc. Zool. Soc. London, p. 17 (type locality: Clarence, Fernando Po).

The nominate race, gray-throated in males, is represented in the Rothschild Collection by a rufous-throated female taken by E. C. Bryant at Omo, Ilorin Province, Nigeria, in 1907. This example agrees with Cameroon specimens. The southern and eastern limits of distribution are not well understood. It seems to me that *A. r. rufogularis* should certainly reach the Belgian Mayombe District, although we have no record so far. Bates found it common at the River Ja, and it may be expected to reach the eastern Cameroon. Grote[1] reported this race from Mbaiki, just west of the middle Ubangi River, but he had only one immature example. In that region one might hope to find intermediates between *rufogularis* and *nigrescens*.

Apalis rufogularis angolensis (Bannerman)

Euprinodes rufigularis angolensis BANNERMAN, 1922, Bull. Brit. Ornith. Club, vol. 43, p. 30 (type locality: Ndala Tando, Angola).

Apalis rufogularis angolensis LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 80 (Kayoyo).

DISTRIBUTION: Northern Angola in the region of Canhoca, Ndala Tando, and Pungo Andongo, and reported by Lynes also from the southeastern Lulua District, where he found two females feeding in the upper foliage of big trees in a river valley. This was a great extension of range to the eastward, and it is to be hoped that some male specimens may soon be forthcoming from the southeastern Congo.

Males of *angolensis* are sometimes very dark gray on the upperparts, but the race is readily distinguishable from *rufogularis* and *nigrescens*. I doubt that it reaches the Lower Congo.

Apalis cinerea cinerea (Sharpe)

Euprinodes cinereus SHARPE, 1891, Ibis, p. 120 (type locality: Mt. Elgon).

Apalis cinerea REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 361 (northwest of L. Tanganyika, 2000 m.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 301.

Apalis cinerea brunneiceps SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 291 (Kilo).

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[1] 1924, Jour. Ornith., p. 500.

Apalis cinerea cinerea BOULTON, 1931, Ann. Carnegie Mus., vol. 21, p. 52 (Djugu). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, pp. 173, 174. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1053 (Kibirau and Chinchiji in Toro). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 87, fig. 23.

DISTRIBUTION OF THE SPECIES: Highlands from Kenya Colony to Cameroon and Fernando Po, and also the Benguella Plateau. *Apalis cinerea cinerea* is widely distributed, from Marsabit and Mt. Kenya westward to the Lendu Plateau and southern Kivu District, and also Mt. Cameroon. It is wanting at levels below 5000 feet. *A. c. grandis* Boulton of Mt. Moco and a few other high points in Angola is a little larger, a little lighter gray-brown on the crown. *A. c. sclateri* (Alexander) of the highland of Fernando Po has the underparts more distinctly washed with buff and the crown colored still more like the gray back. *A. c. funebris* Bannerman[1] of the Banso Mountains and Bamenda district in Cameroon is more sooty or dusky in color than any of the other races. It is surprising, however, that Cameroon Mountain is occupied by the nominate race.[2]

In the eastern Congo *Apalis c. cinerea* has been found at levels around 5000 to 6500 feet, but so far not on Ruwenzori or the Kivu Volcanoes. Vrydagh and I have collected specimens at Djugu on the Lendu Plateau, and there is every likelihood that Thélie's example from "Kilo" came from that plateau. Jackson obtained it in Toro, not far from the base of Ruwenzori, and Grauer collected it on the highland west of Lake Edward. It reappears in the mountains west of the Ruzizi Valley and northwest of Lake Tanganyika, where Grauer and Rockefeller and Murphy have collected a number of specimens.

These are active little warblers, frequenting the lower boughs as well as the tops of trees, showing their white tail-feathers constantly as they work through the foliage, feeding. They may form family parties, but I have not noticed any association with other species. The iris, in adults, is rufous brown, rim of eyelids dull pinkish brown; bill black; feet pinkish brown with larger scales and claws dusky brown. Nothing seems to be known of their nesting.

[1] 1936, Bull. Brit. Ornith. Club, vol. 57, p. 72 (Oku, Banso Mountains).

[2] Serle, 1950, Ibis, p. 611, denies the validity of *funebris*.

Apalis alticola (Shelley)

Cisticola alticola SHELLEY, 1899, Bull. Brit. Ornith. Club, vol. 7, p. 35 ("Nyasaland," but type from Fife, northeastern Rhodesia).

Euprinodes brunneiceps NEAVE, 1910, Ibis, p. 153 (Kambove, 4500 ft.).

Apalis alticola BOWEN, 1931, Proc. Acad. Nat. Sci. Philadelphia, vol. 83, p. 286 (upper Cuanza R. in Angola). SCLATER AND MOREAU, 1935, Bull. Brit. Ornith. Club, vol. 56, p. 18. GRANT AND M.-PRAED, 1941, Bull. Brit. Ornith. Club, vol. 61, p. 63. WHITE, 1946, Ibis, p. 92 (northern Mwinilunga District).

DISTRIBUTION: From the Mafinga and Masuku Mountains in Nyasaland to the highlands of Tanganyika Territory as far as Mt. Oldeani, also to Ufipa, the Upper Katanga, the Congo-Rhodesia border near Mwinilunga, and the upper Cuanza River near the Bihé district of Angola. The altitudinal range is from 4000 to 7200 feet.

Lynes[1] regarded the type of *alticola* as the male, and that of *brunneiceps* Reichenow, from Rupira in Ukinga, as the female of the same species. The two type localities can scarcely be more than 110 miles apart. But since the type of *alticola* from Fife has the crown and cheeks more rufous brown than in specimens from northern Nyasaland and Tanganyika Territory, Grant[2] is inclined to recognize *brunneiceps* as a valid race occupying those eastern areas. This question deserves further investigation, since few specimens are known from the countries west of Fife. Near Mwinilunga, for example, C. M. N. White finds birds with rather dark heads, not reddish.

Apalis alticola is of rather dull coloration, grayish above, with crown and face dark brown or rusty. The tail is gray, with white on outer web and tip of outermost quill, the next three quills with small white tips. Below, the coloration is whitish, becoming grayish on flanks and breast. Wing of males 57–59 mm., of females 53–55; tail of males 56–60, of females 48–50. Iris pale orange or raw sienna, bill blackish, feet pink or brown madder.

The only record from Congo territory is that from Kambove, 4500 feet, by Neave (1910), but White writes me that he has found it near the southeastern border of the Lulua District in evergreen forest. Neave obtained his Katanga specimen in dense forest on the bank of a stream.

The haunts and behavior of this warbler have been described

[1] 1934, Jour. Ornith., Sonderheft, p. 89.

[2] 1941, Bull. Brit. Ornith. Club, vol. 61, p. 63; 1942, idem, vol. 62, p. 59.

by Moreau from Tanganyika Territory and Benson from Nyasaland. It is a bird of the tree tops, and often carries its tail erect, waving it like a *Prinia*. The call is varied, surprisingly loud and percussive (Benson wrote it "chip-it, chip-it. . ."), often repeated quickly as a rattle. Moreau discovered a nest on January 3, of usual *Apalis* type, in a streamer of beard lichen, 50 feet up, but could not reach it. Breeding may be expected to begin with October in the southeastern Congo.

Apalis binotata personata Sharpe

Apalis personata SHARPE, 1902, Bull. Brit. Ornith. Club, vol. 13, p. 9 (type locality: Ruwenzori). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 608; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 362 (Rugege Forest; base of Mt. Karisimbi; west Ruwenzori, 2500 m.; northwest of L. Tanganyika). JACKSON, 1906, Ibis, p. 547. O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 359 (Mubuku Valley, 6000–9000 ft.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 300. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 291. VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 221.

Apalis adolfi-friederici REICHENOW, 1908, Ornith. Monatsber., p. 46 (type locality: Rugege Forest).

Apalis binotata personata GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 141 (Burunga). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 525. CHAPIN, 1932, Amer. Mus. Novitates, no. 570, p. 8 (Lendu Plateau). SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 312 (Nya-Muzinga; Lulenga; Kibati); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 98 (Mt. Sabinyo, 3000 m.; Kibga near Mt. Bishoke, 2400 m.). BERLIOZ, 1936, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 8, p. 332 (Mbwahi). JACKSON, 1938, The birds of Kenya Colony and. . . Uganda, vol. 2, p. 1060.

DISTRIBUTION OF THE SPECIES: From Manenguba Mountain in Cameroon to the base of Mt. Elgon and south to Marungu, also in northwestern Angola. *A. b. binotata* is locally distributed, usually at low levels, and has been found only in southern Cameroon, in Angola near Ndala Tando, in the Mpanga Forest of Uganda, and at the base of Mt. Elgon. It is small, with wings 43–52 mm., and forehead and crown dark gray. *A. b. personata* is a highland bird, scarcely occurring below 5000 feet, and is generally distributed in the forested mountains of the eastern Congo from the Lendu Plateau south to the highlands northwest of Lake Tanganyika, occurring on both sides of Ruwenzori, possibly in British Ruanda, and in Ruanda-Urundi. In this race the wings measure 51–54 mm., and the crown is entirely brownish black.

A. b. marungensis, another highland race, is known only from the Marungu. It has wings 53–57.5 mm., and differs from *personata* in being more grayish black on face and fore neck, the black of fore neck bordered with gray and sides of chest greener.

The race *personata* is usually a common warbler near the lower edges of the mountain forests, feeding in small parties in the dense crowns of small trees or the tangles of vines with which they are often draped. They attract attention by a confused chorus of hoarse "cheeping" notes. Stomach examinations showed their food to consist of small insects and caterpillars.

Adults have the iris light brown, often inclining to rufous, rim of eyelids pinkish brown; bill black, often narrowly grayish along tomia; feet brownish pink, washed with grayish on metatarsi, and claws dark gray.

The lowest level where I saw these birds was near Djugu, at about 5200 feet; they were common there. On west Ruwenzori they were scarcely noticed above 7500 feet, though Woosnam gave the range as up to 9000 feet on the eastern slopes. On that side we secured a specimen of *personata* at 6000 feet at the headwaters of the Mpanga River just before it issues from the mountains. Yet at 5000 feet along the same stream, down in the Mpanga Forest, *A. b. binotata* is a very common bird. The country between is of course open and grassy.

On the highlands west of Lake Edward and about the Kivu Volcanoes, *personata* seemed to me less numerous than on Ruwenzori. Rockefeller and Murphy collected it at 7650 feet on Mt. Kandashomwa, west of the Ruzizi, and Grauer sent back small series from the Rugege Forest in southwestern Ruanda and the highland northwest of Baraka.

The evidence as to breeding season is not very satisfactory. The high proportion of young birds with whitish throats at Djugu in August indicated that nesting there should begin toward June. Breeding birds of both sexes were taken on west Ruwenzori in mid-November, a very rainy period. The nest of this montane race has not been described.

[*Apalis binotata binotata* Reichenow]

Apalis binotata REICHENOW, 1896, Jour. Ornith., p. 41, pl. 5 (type locality: Yaunde, Cameroon). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 359 (Mpanga Forest, 5000 ft.).

Apalis binotata binotata CHAPIN, 1932, Amer. Mus. Novitates, no. 570, p. 9. JACKSON, 1938, The birds of Kenya Colony and ...Uganda, vol. 2, p. 1059. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 94, pl. 3.

DISTRIBUTION: Southern Cameroon, from Manenguba Mountain and Efulen inland to the Ja River and probably much farther. It reappears in the Mpanga Forest in western Uganda, and is also reported from the base of Mt. Elgon and from Ndala Tando in Angola.

While it might be expected to follow the northern edge of the Congo forest near the Ubangi and Uelle, or to appear here or there in the Gaboon or Lower Congo, no such records are known; so we must assume that there are gaps, and that occurrence is unusually localized. The race *binotata* is rather abundant in the Mpanga Forest up to about 5000 feet, yet on Ruwenzori and at Djugu, only a few hundred feet higher, the montane *personata* represents the species. If *binotata* occurs anywhere in the Uelle it is strange that we have not found it.

In the southern Cameroon Bates[1] found *binotata* not in virgin forest, but in old clearings, in small trees or in the tangles of vines hanging from trees, hopping and flitting from twig to twig, looking for insects. He found nests on March 2 and July 30 and a full-fledged nestling as late as September 7. The nests were hanging pockets of *Usnea* lichen, held together with cobwebs and with a very few bits of grass tops inside. The two eggs are dull greenish blue washed with rufous toward the larger end and with very small dots of light red.

Apalis binotata marungensis Chapin

Apalis binotata marungensis CHAPIN, 1932, Amer. Mus. Novitates, no. 570, p. 8 (type locality: Kasangala, 7050 ft., in Marungu, Belgian Congo; also from Sambwe, 6100 ft., and Pande, 6100 ft.).

DISTRIBUTION: Known only from the Marungu highland, southwest of Lake Tanganyika, at levels above 6000 feet. Rockefeller and Murphy secured four specimens, at Sambwe, Kasangala, Pande, and Ketendwe, all localities between 6050 and 7050 feet. From their brief field notes it is evident that this warbler inhabits patches of low, tangled woods near stream beds and is apt to escape notice.

[1] 1908, Ibis, p. 70; 1911, Ibis, p. 618.

Breeding takes place in the rainy half of the year. One male had enlarged gonads on March 4, but a fledgling with tail two-thirds grown had already left the nest by February 23.

Apalis jacksoni jacksoni Sharpe

Apalis jacksoni SHARPE, 1891, Ibis, p. 119 (type locality: Mt. Elgon). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 359 (Mpanga Forest, 5000 ft.). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 362 (Beni). SCHOUTEDEN, 1914, Rev. Zool. Africaine, vol. 3, p. 272 (Kilo); 1918, idem, vol. 5, p. 291; 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 98 (east of Rutshuru Plain). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 300 (northwest of L. Tanganyika, 2000 m.; Moera).

Apalis jacksoni jacksoni BERLIOZ, 1936, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 8, p. 332 (Mbwahi). JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 1060.

DISTRIBUTION OF THE SPECIES: From the base of Mt. Kenya and the Kikuyu District of Kenya Colony to Mt. Elgon and all the better-watered part of Uganda, to Bukoba, to the whole eastern margin of the Congo forest, and along its northern edge to the River Ja and the Bamenda district in the Cameroon. From the vicinity of Baraka near the southeastern corner of the Congo forest it appears to skip to the forested areas of northwestern Angola, in the vicinity of Ndala Tando.

The few specimens known from forested southern Cameroon are small, with wing 46–51 mm., tail 44–52 mm. These have been separated as *A. j. minor*. Nearly all the others, including those of northern Angola, have wing exceeding 50 mm. and specimens from the Bamenda and Yoko highlands of Cameroon have wing 49–55 mm. Males from northwest of Lake Tanganyika are often very blackish on the crown, while two females from northwestern Angola are decidedly light in color, with the two white throat stripes tending to fuse on the chin. It seems likely that one or two additional races may yet be recognized.[1]

Apalis jacksoni jacksoni is not strictly of montane distribution. In Kenya Colony it is rather local, not found as a rule on the higher mountains, even though it was discovered at 7000 feet on Elgon and seems to be numerous there. In Uganda it is widely distributed at levels only a little above 4000 feet, and in the eastern Congo it is characteristic of the forest edge below 5000 feet and

[1] Serle, 1949, Bull. Brit. Ornith. Club, vol. 69, p. 55, has now named *A. j. bambuluensis* from Bambulue Lake, 6000 ft., British Cameroons.

the open woods of the Semliki and Rutshuru valleys at about 3000 feet. Rudolf Grauer, however, collected specimens up to 6500 feet in the highland near Baraka, others are known from Mt. Kandashomwa at 7650 feet, and I myself took one of a pair at 7300 feet near Alimbongo, west of Lake Edward.

Very heavy forest, whether in lowlands or on mountains, seems distasteful to Jackson's warbler. It prefers the higher boughs of trees near the forest borders or open glades in them, and also rather open acacia woods. When in parties of four or five, they may represent a single family, but this warbler seems occasionally to join in mixed parties with a number of other species

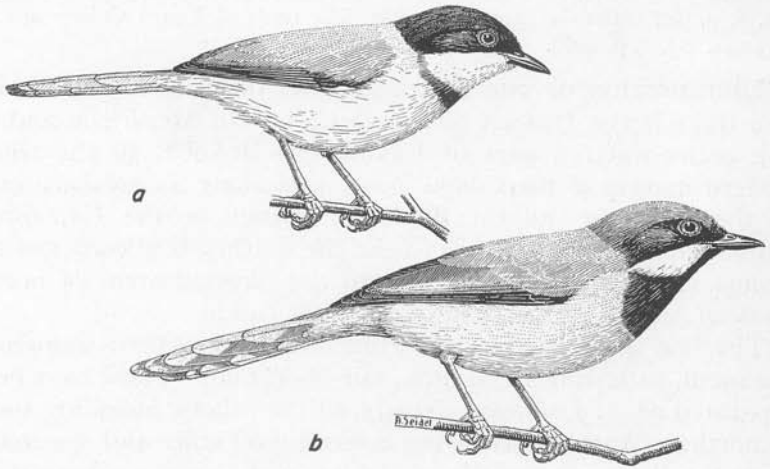

FIG. 15. A. *Apalis nigriceps collaris*, male. B. *Apalis jacksoni jacksoni*, male.

such as *Scoptelus castaneiceps, Campethera permista, Campephaga quiscalina, Apalis nigriceps, Hyliota australis, Parus funereus,* and *Anthreptes tephrolaema.*

While watching *Apalis jacksoni* in lower trees with open foliage, I noted that they gave prolonged calls, not quite musical, which I wrote "chwing-chwing-chwing. . ." These were a little confused; two birds seemed to call together, but did not time their syllables exactly, or else they seemed to answer each other from a distance. Their food consists of small insects.

Of their breeding I know nothing except that Sir Charles Belcher is reported to have found a nest being built at Entebbe,

Uganda, in April, then abandoned, and reoccupied only in June, when two eggs were laid. The nest was a deep cup or purse, built of fragments of *Usnea* lichen and spiderwebs, frail and net-like, hung in an upright fork of a scraggy shrub at the base of a termite hill. The eggs, as Belcher now recalls, were light bluish green with very small reddish spots spread evenly over them, similar to those of *Apalis flavida* but rather smaller.

Apalis jacksoni minor Ogilvie-Grant

Apalis jacksoni minor OGILVIE-GRANT, 1917, Ibis, p. 76 (type locality: Bitye, River Ja, southern Cameroon; also from Angu on the Uelle R.).

Apalis jacksoni jacksoni approaching *minor* SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 525 (Angu).

Apalis jacksoni SCHOUTEDEN, 1936, Ann. Mus. Congo, Zool., ser. 4, vol. 1, fasc. 2, p. 120.

DISTRIBUTION: Known from only a few places in southern Cameroon, especially Bitye and Esamesa, where it evidently inhabits clearings in the lowland forest, and perhaps ranging eastward to the Uelle. The wing of this race is supposed not to exceed 51 mm., or its tail 53 mm. The specimen taken by Boyd Alexander at Angu on the Uelle River was said by Sclater (1930) to be intermediate between *minor* and *jacksoni*.

It may be expected that the species will be found in more places just along the northern margin of the equatorial forest, in the Cameroon and farther east in the Congo. But it is certainly not common there, and when more specimens are forthcoming from the Uelle they may be found to differ very little from *A. j. jacksoni*. In the Cameroon Bates secured specimens from a small acacia-like tree near a village, where they were searching the foliage for insects. Angu is along a forested section of the Uelle River, but there is little reason to expect this warbler to range southward into the solid forest.

Apalis nigriceps collaris VAN SOMEREN

Apalis nigriceps collaris VAN SOMEREN, 1915, Bull. Brit. Ornith. Club, vol. 35, p. 107 (type locality: Bugoma Forest, Uganda). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 525 (Ituri District). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 120 (Bondo Mabe). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 97.

Apalis nigriceps SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 302 (Moera; Ukaika).

SPECIMENS: Nala, male, October 26. Epulu River, male, April 23.

ADULT MALE: Iris rather light reddish brown, bill black, feet pinkish buff.

DISTRIBUTION OF THE SPECIES: From eastern Sierra Leone to southern Cameroon, northern Belgian Congo, and the Mabira Forest in Uganda. *A. n. nigriceps* (Shelley), with outer tail-feathers slaty, broadly tipped with white, extends from the Upper Guinea forests to the southern Cameroon and supposedly to the vicinity of Mbaiki in the French Congo. *A. n. collaris,* with at least three pairs of outer rectrices wholly white, is known from the northeastern portion of the Upper Congo forest and various forest patches in Uganda. The boundary between the two races must be somewhere near the middle Ubangi River.

In addition to the meager published records, there are an adult female in the Rothschild Collection taken by Camburn in July, 1906, somewhere near Irumu, and two adult males which I collected in October, 1926, between Irumu and Beni. The species has never been reported from the southern edge of the equatorial forest, and I looked for it in vain at Avakubi. It is distinctly of lowland distribution, never reported from above 4500 feet.

My first specimen was secured in second growth along a road near Nala, at the edge of the forest area, but the second was one of a party of five or six, feeding amid the foliage high up in tall virgin forest. An immature male from the same party had the crown gray, and the chest band was lacking. That specimen has since been lost. Adult females have a gray crown and a faint gray patch on the fore neck.

Along the road between Irumu and Beni, at a level of about 3500 feet, the species is more frequent, sometimes in rather low trees in clearings, but also high in trees of the virgin forest, where they may be associated with mixed parties of other small birds.

The fact that my first two specimens were both in breeding condition, in April and October, gives little information as to the nesting season. The two other October birds were in their off season. The nest is unknown. Two stomachs were found to contain remains of small insects and three small caterpillars.

[*Apalis nigriceps nigriceps* (Shelley)]

Dryodromas nigriceps SHELLEY, 1873, Ibis, p. 139 (type locality: Aburi, Gold Coast Colony).

Apalis nigriceps cervicalis GROTE, 1924, Jour. Ornith., p. 500 (Nola-Mbaiki).

The Cameroon representatives, once separated as *cervicalis* Reichenow, have been found to agree with the Upper Guinea race. Grote noted no difference between Tessmann's male from the French Congo and one from Yaunde. So it may be that nominate *nigriceps* reaches the Ubangi River and even the northwestern Belgian Congo.

[*Apalis thoracica youngi* Kinnear]

Apalis thoracica youngi KINNEAR, 1936, Bull. Brit. Ornith. Club, vol. 57, p. 8 (type locality: Vipya, 6000 ft., northern Nyasaland).

The present group of bar-chested warblers is made up of at least 16 forms, some with striking color differences, which are distributed locally from Cape Province to Northern Rhodesia and the Taita and Chyulu Hills in Kenya Colony. They usually have a narrow blackish band across the chest, and large white areas on the outer rectrices. Austin Roberts[1] recognized no fewer than 11 races south of the Zambesi, and objected to the division of the group by Grant and Mackworth-Praed[2] into three species. Benson[3] regards even *flavigularis* and the black-throated *lynesi*, which have usually been considered valid species, as conspecific with *griseiceps*. They may thus be races of *A. thoracica*.

In all the tropical parts of the range these subspecies are restricted to mountain forests of limited area and thus have been greatly affected by isolation. The only race approaching the borders of the Congo is *Apalis t. youngi*, which is known from the Vipya and Nyika plateaus of northern Nyasaland and the Ufipa highland in Tanganyika Territory. It may yet be found on the Muchinga Mountains in Northern Rhodesia, but is not very likely to reach the borders of the Katanga.

It is one of the plainer colored forms, with back slaty gray, crown grayish brown, underparts whitish save for a black chest band, and with little or no greenish tinge on abdomen or tibiae.

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[1] 1940, The birds of South Africa, pp. 259–261.

[2] 1938, Ibis, pp. 528–533.

[3] 1940, Ibis, pp. 622–624.

Wing 48–53 mm., tail 45–49 mm. The tail is shorter than that of *A. pulchra murphyi* and composed of 12 instead of 10 quills.

Apalis pulchra pulchra Sharpe

Apalis pulchra SHARPE, 1891, Ibis, p. 119 (type locality: Mt. Elgon).

Apalis pulchra pulchra CHAPIN, 1932, Amer. Mus. Novitates, no. 570, p. 10 (Lendu Plateau). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 89, pl. 4.

DISTRIBUTION OF THE SPECIES: Mt. Kenya and Nairobi, across the highlands of Kenya Colony to Elgon and Nandi, reappearing on the Lendu Plateau west of Lake Albert, on the highlands near the Cameroon-Nigeria border, and in Marungu. So little difference can be found between East African and Cameroon specimens that they are all referred to *A. p. pulchra*. The representative on the Marungu highland, *A. p. murphyi*, is very distinct, lacking rufous on the flanks, which are merely pale cinnamon buff. The white areas on outer rectrices are more extensive. Strangely enough, the whole montane region between these two races is occupied by the nearly allied *Apalis ruwenzorii*, lacking white in the tail.

The presence of *A. p. pulchra* in the northeastern Congo was expected, because of its peculiar distribution, but not confirmed until 1926, when I collected one adult male at 5500 feet near Djugu on the Lendu Plateau. My friend J. M. Vrydagh has written me that he obtained another example in 1943 on Mt. Aboro, in the same district.[1] We may be sure that it occurs regularly on this highland of the eastern Ituri at points above 5000 feet. Another bird of rather similar distribution, but which has not yet been found in the Congo, is *Parus albiventris*.

The iris of *A. p. pulchra* is a warm light brown, slightly tinged with reddish in adult males; the bill blackish; and feet are dusky gray, lighter and more pinkish on the toes. This is a particularly graceful and attractive warbler, going about in pairs or family parties in patches of mountain forest, often in undergrowth close to the ground. According to Robert Newton, who studied them in the British Cameroon, they have a wide range of notes, loud, spasmodic, and singing, very energetic in comparison to the size of their maker. One distinctive call is a shrill, rapid "peet-peet-peet, peet."

[1] See Vrydagh, 1949, Gerfaut, vol. 39, p. 69, for additional notes.

Newton seems to say that in Cameroon the breeding season is in January and February, the driest months of the year, but I should expect nesting in the eastern Ituri a little later, in the early half of the rains. Eggs have been described from East Africa by Van Someren[1] as pale greenish white, with liver-colored spots.

Now, he writes me, he has found many more nests. The usual number of eggs is two, but sometimes three, and occasionally the ground color may be more pinkish. Dimensions are 17.5–18 mm. by 11–12 mm. When conditions are favorable, two broods are reared near Nairobi in the March-July period, and occasionally a pair will nest between November and January.

When the nest is built by these warblers it is domed, with side-top entrance, and composed of lichen, moss, and cobwebs, lined with feathers and vegetable down, placed from 6 to 20 feet up. But more often an old nest of *Eminia lepida* or some other warbler, a sunbird, or even weaver-bird is reconditioned and relined with feathers.

Apalis pulchra murphyi Chapin

Apalis pulchra murphyi CHAPIN, 1932, Amer. Mus. Novitates, no. 570, p. 9 (type locality: Sambwe, 6100 ft., on Marungu highland, Belgian Congo; also from Matafali).

DISTRIBUTION: Restricted to Marungu, and known so far only from Sambwe and Matafali, both localities a little above 6000 feet, where Rockefeller and Murphy secured one adult male and two females in 1929. They were in rather open woodland and in a thicket near a stream. A mated pair, both birds in condition to breed, was taken on February 28, so it is evident that nesting is carried on during the rainy season. The iris in this race is warm light brown, the bill blackish, and the feet apparently are rather dusky gray.

Apalis ruwenzorii ruwenzorii Jackson

Apalis ruwenzorii JACKSON, 1904, Bull. Brit. Ornith. Club, vol. 15, p. 11 (type locality: Ruwenzori); 1906, Ibis, p. 547. REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 606; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 362 (in part. Base of Mt. Karisimbi; "Lake Albert"). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 360, pl. 14, fig. 4 (Mubuku Valley, 6000–8000 ft.; Butagu Valley, 7000 ft.). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 291.

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[1] 1922, Novitates Zool.. vol. 29, p. 220.

CHAPIN, 1932, Amer. Mus. Novitates, no. 570, p. 10 (in part. Kivu District; Ruwenzori).

Apalis ruwenzorii catoides GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 140 (Burunga). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 98 (Kibumba, 2500 m.).

Apalis ruwenzorii ruwenzorii SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 527. JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 1064 (Mpanga Forest).

Apalis ruwenzorii catiodes SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 312 (Kibati; Burunga; Lulenga; Nya-Muzinga).

DISTRIBUTION OF THE SPECIES: Mountain forests from Mpanga and Ruwenzori to the Kivu and Ruanda highlands and those northwest of Lake Tanganyika. This range fills exactly the gap between the two races of *Apalis pulchra*, yet we hesitate to consider *ruwenzorii* as one of its subspecies, because of its shorter and wholly gray tail.

Seven specimens from the Rugege Forest in southwestern Ruanda are plainly deeper rufous on throat and flanks than those from Ruwenzori and the Kivu Volcanoes. Among nine from west of the Ruzizi Valley and northwest of Baraka, some are deeply colored, others less so. It seems best, therefore, to consider *A. r. ruwenzorii* as ranging from Ruwenzori and the highlands west of Lake Edward to the Kivu Volcanoes and the mountains west of Lake Kivu. To the south of those limits lives *A. r. catiodes*. When Gyldenstolpe (1924) argued for the validity of *catiodes* he had only one skin of the nominate race for comparison. I find specimens from the volcanoes no darker than those of Ruwenzori.

The Ruwenzori bush-warbler is seen commonly in groups of two to four, skulking low down in herbaceous undergrowth, or in thickets or low boughs and vines in mountain forest. On east Ruwenzori it ranges from 6500 feet up to 10,000 feet, according to Woosnam, and on the western slopes we saw it from 6700 up to 8800 feet, in mountain forest and bamboo zones. Low scolding notes were heard occasionally, and less often a double "tooting" sound, not loud but of a brassy tone. It is anything but a noisy bird.

The iris is bright orange-brown, perhaps more rufescent in males; bill black; feet are light pinkish brown, often washed with gray, claws rather dark gray.

I have collected specimens to the west of Lake Edward at 6000 to 8200 feet which agree closely with those of Ruwenzori, and

others on Mt. Mikeno at 7000 to 9400 feet. Three males in condition to breed were examined on west Ruwenzori between mid-November and late December, toward the end of one of the two long rainy seasons. Birds taken in the Kivu during June, a dry period of the year, were apparently not breeding. The nest remains to be discovered.

Apalis ruwenzorii catiodes Reichenow

Apalis catiodes REICHENOW, 1908, Ornith. Monatsber., pp. 46, 66 (type locality: Lugege, or Rugege Forest, Ruanda); 1908, Jour. Ornith., p. 627, pl. 2, fig. 3.

Apalis ruwenzorii REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 362 (in part. Rugege Forest; northwest of L. Tanganyika). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 301 (northwest of L. Tanganyika, 2000 m.). CHAPIN, 1932, Amer. Mus. Novitates, no. 570, p. 10 (in part. Northwest of L. Tanganyika; western Ruanda).

Apalis ruwenzorii catiodes SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 527.

DISTRIBUTION: Rugege Forest, on the highlands southeast of Lake Kivu, and mountain forests west of the Ruzizi Valley and northwest of Baraka. Grauer's specimens from Rugege in the Rothschild Collection show this to be a valid race, and it seems best to include in *catiodes* the seven examples he secured northwest of Baraka at 6000 to 6500 feet. Rockefeller and Murphy obtained two at 7650 feet on Mt. Kandashomwa which scarcely differ from nominate *ruwenzorii*. One of their birds was in breeding condition on June 21, so nesting may take place even in the dry period.

Drymocichla incana Hartlaub

Drymocichla incana HARTLAUB, 1881, Proc. Zool. Soc. London, (1880), p. 626, pl. 60, fig. 2 (type locality: Magungo, near mouth of Victoria Nile); 1881, Abhandl. Naturwiss. Ver. Bremen, vol. 7, pp. 85, 91; 1882, idem, vol. 8, p. 190 (Wandi). SCLATER AND M.-PRAED, 1918, Ibis, p. 665 (Meridi). EMIN, 1919, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 2, p. 424 (Tobbo). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pts. 2 and 3, pp. 198, 237 (southern Makraka; Tunguru; Nsabe). BOWEN, 1931, Catalogue of Sudan birds, vol. 2, p. 33 (Kajo-Kaji). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 530 (Uelle District). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 120. JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 1069. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 104.

SPECIMENS: Faradje, four males, April 14, August 18, October

14, November 5; three females, April 14, August 29, December 21; immature female, December 26.

ADULTS OF BOTH SEXES: Iris light greenish gray, bill black, feet buffy yellow, claws gray.

DISTRIBUTION: From the vicinity of the Genderu Mountains in Cameroon eastward across the Ubangi-Shari District to the southern Bahr-el-Ghazal Province, the Upper Uelle, the Nile Province of Uganda, Masindi, and the western shore of Lake Albert.

In the Uelle District I found this pale gray warbler, easily distinguished by the rufous at the base of its primaries, only in the vicinity of Faradje, where it was fairly common. In almost every little patch of woods on swampy ground a pair could be expected, but no more than two birds were ever seen together. They find a living by gleaning insects from the lower boughs of trees; my examination of three stomachs disclosed nothing but small insects.

The song is not unpleasant, though far from musical. It resembles the words "three cheers," repeated monotonously, and sounding as though the bird would like to whistle if it only knew how. Emin noted that the female answered the male softly.

The breeding season coincides roughly with the rains. Adults with enlarged gonads were taken near Faradje in April and August; sexual activity was subsiding in October and November, and by December it had ceased. At Kasenyi on Lake Albert I found a pair on September 3, 1926, about ready to breed, in a scrubby patch of low trees along a stream. In that area the species seemed confined to the lake shore.

Eminia lepida lepida Hartlaub

Eminia lepida HARTLAUB, 1881, Proc. Zool. Soc. London (1880), p. 625, pl. 60, fig. 1 (type locality: Magungo, near mouth of Victoria Nile); 1881, Abhandl. Naturwiss. Ver. Bremen, vol. 7, pp. 85, 91; 1891, idem, vol. 12, p. 10 (Kiriamo). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 613; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 363 (Kasenyi on L. Albert; Kisenyi on L. Kivu). O.-GRANT, 1910, Trans. Zool. Soc., London, vol. 19, p. 361 (Mubuku Valley, 6000–7000 ft.; Mokia; Beni, 3000 ft.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 302 (Kasindi). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 292 (Lisasa; Molekera; Talia–Semliki); 1932, idem, vol. 21, p. 312 (Ngoma; Mahagi); 1934, Bull. Cercle Zool. Congolais, vol. 11, p. 9 (Kivu District); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 120 (Mahagi Port); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 99 (Ruhengeri, 1800 m.; Rutshuru); 1940, Rev. Zool. Bot. Africaines, vol. 34, p. 60 (Kawa

Forest on L. Albert); 1942, idem, vol. 36, p. 337 (Kibingo); 1942, Bull. Cercle Zool. Congolais, vol. 17, p. 3 (Ruanda). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pts. 2, 3, pp. 199, 295 (Mswa; Nyamsansi). EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, pp. 24, 41, 56, 64. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 529. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1067.

SPECIMENS: Faradje, five males, April 28, May 6, September 8, October 11, 21; immature male, December 4; two females, May 6, August 29; immature female, August 29.

ADULTS OF BOTH SEXES: Iris dark red to reddish brown; bill black; feet pinkish buff, claws light gray. The iris of an immature male was bright brown.

DISTRIBUTION OF THE SPECIES: From the eastern Uelle District and Wadelai south along the borders of the eastern Congo forest to Lake Kivu and Astrida in southern Ruanda. Eastward it extends to Elgon, the slopes of Mt. Kenya, and the Mbulu district in Tanganyika Territory. While quite at home in suitable thickets at 2000 feet, it is also found commonly at higher levels, and may ascend mountains to 7000 or even 8000 feet if they are not too heavily wooded.

The greater part of the range seems to be occupied by *E. l. lepida*, but specimens from the Kenya highlands east of the Great Rift are really a little darker gray beneath and thus separable as *E. l. hypochlorus* Mearns.[1] As Van Someren has pointed out, many of the birds near Lake Naivasha are too pale below to be referred to the eastern race.

There is said to be a second species of *Eminia* in West Africa. But the descriptions and pictures of *E. cerviniventris* (Sharpe) suggest a much closer resemblance to *Bathmocercus rufus* Reichenow, and the blue color of the skin of its throat, as noted by G. R. Walker,[2] greatly strengthens that impression. So, too, does his description of the bird's voice.

In the Uelle District I found *Eminia lepida* only in the vicinity of Faradje. But from the Lendu Plateau and the west shore of Lake Albert to Lake Kivu it is noticed almost everywhere outside of solid forest, mainly below 5500 feet. Although known to ascend the more grassy eastern slopes of Ruwenzori to 7000 feet, it is restricted to a considerably lower level on the western

[1] 1911, Smithsonian Misc. Coll., vol. 56, no. 20, p. 10 (Wambugu, Kenya Colony).
[2] 1939, Ibis, p. 427.

side. Between Rutshuru and Kabale in southwestern Uganda it is frequently heard calling from thickets or elephant grass up to around 6700 feet. Grauer collected specimens on Idjwi Island in Lake Kivu, and J. M. Vrydagh writes me that he has found it close to Astrida. Irumu, Bogoro, Luofu, and Kalimbo in the Rutshuru Valley are localities I can add from my own observation. On the Kivu Volcanoes it was not noticed.

In the vicinity of Faradje *Eminia lepida* is a common bird in woods near water, and often found along the borders of papyrus swamps. Pairs or family parties are the rule, and they would easily be overlooked were it not for their loud, varied notes. The male has a ringing song, composed of reiterated musical whistles or trills, and he is accompanied often by hoarser notes from another bird, presumably his mate. The singing of such "duets" is not unusual among Sylviidae, *Cisticola erythrops* and *Cisticola chubbi* offering excellent parallels.

During the dry season *Eminia* was silent, and my dissections indicated that nesting took place from the beginning to the middle of the rains—or from April to August, inclusive. The juvenal plumage is surprisingly similar to that of the adult, save that the chestnut throat patch is lighter in the young. Adult males are consistently larger than females. Five stomach examinations revealed only insect remains and some insect eggs.

Nearer the Equator in the eastern Congo one may expect less seasonal regularity in singing and nesting. Certainly the voice is heard frequently from thick cover, and now and then the birds are visible in low trees. But they shun areas of open grassland.

Nests of *E. l. lepida* were found by Jackson at Entebbe, Uganda, in April and May, in the Nandi district of Kenya Colony in May, and at Elgeyu in August. They are suspended in bushes or vines, well hidden by foliage, and resemble large, rough nests of sunbirds, with a projecting portico above the lateral entrance. Sometimes placed as high as 15 feet, they may even be built in *Raphia* palms or a *Dracaena*. The materials are dry grass blades, fibrous bark, dead leaves, and spiderwebs; the lining is of finer fibers. Two eggs seem to be the rule, either pure white or with one or two spots of dark purple-brown, measuring about 18 by 12.5 mm.

Nests of *E. l. hypochlorus*, found by Serle[1] near Nairobi in April, were similar in construction. One held a set of three eggs which

were pale blue, two spotless and one with a few faint reddish brown marks. Dimensions: 17.8–21 mm. by 11.8–13.8 mm. A single egg from the other nest was white, with sparse markings of dark brown and orange-brown at the larger end.

[*Hypergerus atriceps* (Lesson)]

Moho atriceps LESSON, 1831, Traité d'ornithologie, p. 646 ("Islands of the South Seas"; corrected type locality: Gold Coast).

Hyperurgus atriceps OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127 ("Ubangi").

Hypergerus atriceps REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 669. BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 387; 1936, The birds of tropical West Africa, vol. 4, p. 102, fig. 30 (Gribingui R.). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 358. BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 71 (upper Kemo R.).

DISTRIBUTION: From the Gambia, and possibly Senegal, eastward to the grasslands of Cameroon, the Gribingui River in the Ubangi-Shari, and to the vicinity of the great bend of the Ubangi River. This would be the only point at which the "oriole babbler" reaches Congo territory. While no specimen is actually known from the Congo, Dybowski did secure one on the upper Kemo River.

It is a bird of gallery forests and bushy clearings, scarcely found in heavy rain forest, and usually shows a particular fondness for low palms. It hops about on the fronds, frequently giving a melodious whistled song of three syllables, like "peet, ch-wee, chyou!" with second and third syllables slurred. But sometimes the "peet" comes last, without its being slurred, and there are doubtless other variations.

The birds are seen singly or in pairs, feeding entirely on insects, and neither coloration nor behavior suggests a babbler or a bulbul. The impression I gained at Lagos, Nigeria, was rather that of an overgrown warbler, and comparison with *Eminia lepida* shows not a few points of similarity, though the beak, wings, and tail are all much more elongated in *Hypergerus*.

In Southern Nigeria Foulkes-Roberts watched a pair in October entering and leaving an empty nest suspended below a palm leaf, and Ansorge is reported to have found a nest with three

[1] 1943, Ibis, pp. 69, 70.

eggs in Portuguese Guinea during July. When the nest is better known it may be found to resemble that of *Eminia*.

KEY TO THE SPECIES OF *Camaroptera* IN THE CONGO

1. Upper surface of wings gray or brown, like the back, and never greenish in the adult 2
   Upper surface of wings always somewhat green 3
2. Crown and back grayish, breast not distinctly barred ..... *C. simplex*
   Crown and back dark brown, breast regularly dark-barred on a whitish ground ..... *C. fasciolata*
3. Crown and back gray or gray-brown, upper surface of wings green ..... *C. brevicaudata*
   Crown and back green or brownish olive in adults, wings likewise greenish .. 4
4. Facial region mostly yellow, under tail-coverts bright yellow .. *C. superciliaris*
   Facial region grayish, brownish, or cinnamon buff, under tail-coverts whitish ..... *C. chloronota*

Camaroptera superciliaris flavigularis Reichenow

Camaroptera flavigularis REICHENOW, 1894, Ornith. Monatsber., p. 126 (type locality: Yaunde, Cameroon).

Camaroptera superciliaris O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 364 (Mawambi); 1917, Ibis, p. 75. CHAPIN, 1921, Amer. Mus. Novitates, no. 17, p. 16 (Avakubi; Penge; Ngayu; Medje; Rungu).

Camaroptera brevicaudata pulchra ZEDLITZ, 1911, Jour. Ornith., p. 331 (in part. Kasongo).

Camaroptera superciliaris pulchra BANNERMAN, 1923, Ibis, p. 702 (Upper Congo; L. Tanganyika).

Camaroptera superciliaris rotschildi SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 81 (Moera; Beni; Mawambi–Irumu).

Camaroptera superciliaris flavigularis GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 148 (Beni; Kartushi; Kampi-na-Mambuti; Mukimbungu). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 545. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 121 (Kotili). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 567 (Saidi). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 139.

Camaroptera supercilliaris pulchra GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 185 (Luluabourg).

Camaroptera supercilliaris collerwarti GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 186 (type locality: Luluabourg, Kasai District).

SPECIMENS: Avakubi, male, August 20. Penge, male, April 20. Ngayu, male, December 12. Medje, two males, May 29, August 9; immature male, September 4; female, May 29. Rungu, immature female, June 27.

ADULTS OF BOTH SEXES: Iris dark brown; bill black, naked

skin at sides of fore neck light blue; feet pinkish buff tinged with gray or pale violet, claws dark gray.

DISTRIBUTION OF THE SPECIES: Wooded areas from Sierra Leone to the Gold Coast, Fernando Po, southern Cameroon to northwestern Angola and eastward to the Uelle, Uganda, and Manyema. *C. s. superciliaris* (Fraser) of Fernando Po is very yellowish green above, very whitish below, easily separable from mainland birds. *C. s. willoughbyi* Bannerman of Upper Guinea is grayer on the underparts, laterally at least, somewhat darker green above, and averaging slightly smaller. *C. s. flavigularis* is still darker green above and grayer on chest and flanks. It inhabits the Cameroon, Gaboon, and Lower Congo, but farther east in the equatorial forests the birds become gradually lighter and brighter again, so it is not easy to fix an eastern limit for *flavigularis*. *C. s. pulchra* Zedlitz was described from Angola on a single brightly colored female, agreeing rather closely with specimens from Uganda. *C. s. ugandae* Clarke[1] was supposed to differ from *flavigularis* not only in its brighter color but also in greater tail length. The type now seems to be the only specimen with tail over 33 mm., so that latter character is unimportant.

The difference between Ituri and Cameroon examples is really not very great. Unless some real distinction can be found for Uganda birds they must be called *pulchra*. But the male from 80 kilometers north of Kasongo, identified by Zedlitz with *pulchra*, is not separable from Ituri birds or from a female from Kitutu near the upper Elila River collected by Rockefeller and Murphy. Three specimens from Luluabourg in the Kasai have likewise seemed to me very like *flavigularis*. In view of the record from Mukimbungu there can be no doubt of the occurrence also in the Mayombe. In the Frankfurt Museum I saw an immature example, collected by Schubotz between Angu and Api in the Uelle.

Thus the range of *C. s. flavigularis* is best stated as extending from the Cameroon coast and Lower Congo to the Uelle, Semliki Valley, forested Manyema, and Luluabourg in the Kasai. It must be remembered that the throat is yellow only in juvenal dress, and this applies to all the races.

Purely a lowland bird, this warbler has not been taken above

[1] 1914, Bull. Brit. Ornith. Club, vol. 33, p. 136 (Uganda).

4000 feet in the eastern Congo. The area inhabited extends some distance beyond the border of unbroken forest, for I heard it as far north as Niangara in the Uelle District, and it inhabits the gallery forests of the Kasai.

In the Ituri it is fond of second growth, the borders of clearings, and even open sunny spots in the forest. Vine-covered trees and tangled creepers attract it, and there the male perches as he sings a low "toodle-toodle," repeated from time to time, and accompanied by a slight swelling of the neck which displays the bare areas of light blue skin. The esophagus is no doubt distended with air, in the same way perhaps as in the Neotropical *Donacobius*. A scolding call note completes the vocabulary.

The breeding season (in the Ituri) may be said to occupy the whole year. We found males with enlarged gonads in April, May, August, and December. The nest is known only of the Upper Guinea race, lined with grass fibers and plant down, sewn with spider silk between three leaves in a bush, 8 feet up. The three eggs were very pale blue, spotted and specked with dark brown.[1]

Insects and small caterpillars are the food of this bird, the four stomachs examined always containing some chitinous insect remains; but only twice were there caterpillars, and then only three in all.

[*Camaroptera superciliaris pulchra* Zedlitz]

Camaroptera brevicaudata pulchra ZEDLITZ, 1911, Jour. Ornith., p. 331 (type locality: Canhoca, northwestern Angola).

This rather bright-colored race was based on a single female specimen, now in the American Museum. Rudolf Braun has sent us an adult male from Quicolungo in northern Angola which confirms the slight racial difference. The two Angolan specimens are so like those taken in Uganda that the status of *ugandae* is very dubious.

It is not impossible that *pulchra* will yet be found in wooded locations near the Kwango River.

Camaroptera chloronota toroensis (Jackson)

Sylviella toroensis JACKSON, 1905, Bull. Brit. Ornith. Club, vol. 15, p. 38 (type

[1] Holman, 1947, Ibis, p. 648.

locality: Kibera R., Toro, Uganda). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 362 (Mpanga Forest, 5000 ft.).

Sylvietta toroensis REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 364 (Avakubi).

Camaroptera toroensis ZEDLITZ, 1911, Jour. Ornith., p. 343 ("Mauamli"). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 304 (Moera; Beni; Ukaika). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 149 (Lesse; Kampi-na-Mambuti). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 543. JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 1086.

Camaroptera chloronota toroensis SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 334 (Basongo).

SPECIMENS: Avakubi, three males, July 2, November 16, December 21; female, October 19; immature male, October 19; juvenile male, July 4. Bafwabaka, male, July 23.

ADULT MALE: Iris light brown, near hazel; bill dull gray, shading to blackish on culmen; feet brownish pink.

ADULT FEMALE: Iris light olive brown; maxilla brownish black, mandible whitish; feet buff.

DISTRIBUTION OF THE SPECIES: Eastern Sierra Leone to Southern Nigeria, Fernando Po, and from southern Cameroon to Uganda and North Kavirondo. *C. c. kelsalli* Sclater of Sierra Leone and the Gold Coast is gray-breasted with a wash of rufous buff on ear coverts and eye region. *C. c. chloronota* Reichenow, extending from Togoland to southern Cameroon, is also gray-breasted, usually with a faint wash of green on the chest, but no ruddy patch on the side of the face. Bannerman finds no evidence for the validity of *granti* Alexander, described from Fernando Po, but to me the island birds seem to have deeper gray breasts and flanks, as well as larger bills.

Camaroptera chloronota toroensis is brownish on the breast and about the face, not quite so green on back and tail as the nominate form. I expect these two races to intergrade somewhere in the region of the lower Ubangi. The range of *toroensis* includes the Upper Congo forest, south to Basongo on the Kasai, east to the Ituri, the Semliki Valley, forests of Uganda and of North Kavirondo.

Few specimens of this elusive forest warbler have thus far been collected in the Congo, and it is much better known in Uganda. Schouteden's example from Basongo appeared to be a female, with wing 49.5 mm. and the buffy color on breast which is

usually better developed in that sex. Adult males are apt to be darker brownish on the chest, and have wings 54–57 mm. long. While best assigned to the genus *Camaroptera*, this species shows no very close affinity to *C. brevicaudata* or *brachyura*.

In the region about Avakubi we found it in forest undergrowth or old, tangled, secondary woods. The male will sit concealed in some tangle of vines, 15 or 20 feet from the ground, and for several minutes without a stop will repeat over and over again a short whistled note, always in the same key, though somehow the pitch seems always to be descending slightly, and leads one to expect the finish which will not come. I wrote it "ee-ee-ee-ee-ee-ee. . ." or "pî-pî-pî-pî-, . ." This sound was heard rather often, but when I came close to its author I found it difficult to know in just what direction to look. Besides such monotonous, interminable calls, several ringing notes were sometimes delivered in quick succession. The female is silent, and our first specimen of that sex was secured after following up a singing male. Another female was later found amid low herbaceous plants along a forest path at the west base of Ruwenzori, south of Pakihoma, and additional specimens taken in the region of Irumu were an adult and a young male, the latter with yellowish throat and chest.

Near Avakubi and Bafwabaka two breeding males and a newly fledged individual were taken in July, whereas adults obtained in October, November, and December were non-breeders. The nest of *C. c. chloronota* found by Bates[1] in the Cameroon differed from that of *C. brevicaudata* only in that it was composed entirely of soft white plant down; there were some tough brown cobwebs running through and giving firmness to the soft down. The nest was attached to six leaves, three underneath forming a support, and three above forming a roof. The eggs, two in number, measured 17 and 17.5 by 12.5 mm. and were similar to those of *C. brevicaudata tincta*, though the markings were larger and more distinct.

The principal food of *C. c. toroensis* appears to be small hairless caterpillars, for they were found in three of the four stomachs we examined, up to half a dozen in one stomach. The fourth bird had eaten other small insects.

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[1] 1911, Ibis, p. 621.

[*Camaroptera chloronota chloronota* Reichenow]

Camaroptera chloronota REICHENOW, 1895, Ornith. Monatsber., p. 96 (type locality: Misahöhe, Togoland).

This race has not yet been found in the Gaboon, where it would certainly be expected, so we have no good reason for believing it to reach the Belgian Mayombe. Whether or not the nominate race reaches the lower Ubangi is also an open question. I have certainly heard the calls of the species near Lukolela but could not secure a specimen. It will be interesting to learn which race occurs there.

Camaroptera brevicaudata tincta (Cassin)

Syncopta tincta CASSIN, 1855, Proc. Acad. Nat. Sci. Philadelphia, vol. 7, p. 325 (type locality: Moonda R., Gaboon).

Camaroptera brevicaudata REICHENOW, 1887, Jour. Ornith., p. 301 (Manyanga). SHARPE, 1890, *in* Jameson, The story of the rear column, p. 402. SHELLEY, 1890, Ibis, p. 160 (Yambuya). FLOWER, 1894, Proc. Zool. Soc. London, pp. 603, 604 (Ubure; Urumbi). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Leopoldville; Umangi; Ituri). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pts. 2, 3, pp. 200, 269 (in part. Mangbetu country).

Camaroptera olivacea REICHENOW, 1887, Jour. Ornith., p. 301.

Cameroptera tincta OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127.

Camaroptera griseoviridis HARTERT, 1900, Novitates Zool., vol. 7, p. 49 (Lubilia R.). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 616. O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 364, pl. 19, fig. 10 (Mubuku Valley, 5500 ft.; Mokia). BERLIOZ, 1925, Bull. Mus. Hist. Nat. Paris, vol. 31, p. 349 (Luluabourg).

Camaroptera griseoviridis griseigula SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 304 (Rutshuru Plain; Moera; Beni; Ukaika; Mawambi).

Camaroptera griseoviridis tincta SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 292 (Lubilu). BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, pp. 370, 372. BOUET, 1934, Ois. Rev. Française Ornith., new ser., vol. 4, p. 642.

Camaroptera brevicaudata tincta SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, pp. 334, 397 (Basongo; Luebo; Macaco; Dumbi; Belenge; Tshikapa; Kwamouth); 1924, idem, vol. 12, pp. 270, 418 (Kidada; Eala; Bikoro); 1925, idem, vol. 13, p. 14 (Kunungu); 1926, idem, vol. 13, p. 197 (Temvo); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 121 (Buta; Poko; Panga; Medje; Dika; Bondo Mabe; Kotili); 1937, Bull. Cercle Zool. Congolais, vol. 13, p. 69. GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 147 (Kabare; Beni; Kartushi; Bopu; Kampi-na-Mambuti). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 544. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 567 (Kasenyi; Saidi). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 82 (Kabambaie). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 135. VERHEYEN, 1939, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 15, no. 66, p. 5 (Bambesa). GRANT AND M.-PRAED, 1941, Bull. Brit.

Ornith. Club, vol. 61, p. 68; 1945, idem, vol. 66, p. 8 (Kasulu; Kungwe-Mahare Mts.). GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 186 (Luluabourg). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 69 (Bangui).

Camaroptera brevicaudata aschani GRANVIK, 1934, Rev. Zool. Bot. Africaines, vol. 25, p. 103 (? Ruwenzori).

Camaroptera brevicaudata abessinica FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 193 (Ruwenzori). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1084.

Camaroptera brevicaudata cincta SCHOUTEDEN, 1941, Rev. Zool. Bot. Africaines, vol. 34, p. 266.

SPECIMENS: Ukaturaka, male, July 25. Avakubi, three males, May 19, November 9, December 9; immature male, October 11; female, May 16; two immature females, October 2, 5. Gamangui, immature female, February 20. Medje, female, August 4; juvenile male, September 17. Pawa, male, July 5. Niangara, female, April 27.

ADULTS OF BOTH SEXES: Iris light brown, edge of eyelids pinkish brown; bill black; feet brownish pink or pinkish buff.

YOUNG IN JUVENAL PLUMAGE: Iris light grayish brown, bill dark gray, feet light brownish.

DISTRIBUTION OF THE SPECIES: Senegal to the Red Sea Province and British Somaliland, south to Damaraland, northern Transvaal, and northeastern Zululand. In the better-watered equatorial regions the coloration is rather deep gray and green, with little or no seasonal change. The races of the Sudan and of Southern Africa, on the other hand, are of lighter coloration in the grayish breeding plumage, and much more washed with light brown in the dry season.

Camaroptera b. brevicaudata Cretzschmar is one of the lighter races, ranging from Senegal to Lake Chad, the Bahr-el-Ghazal, Kordofan, the Red Sea Province, and Eritrea. *C. b. abessinica* Zedlitz is much grayer and is believed to extend from British Somaliland and Abyssinia at least to the southern Bahr-el-Ghazal, northern Uganda, and northern Kenya Colony. *C. b. aschani* Granvik[1] is a large race (wings 52–61 mm.) with under surface almost entirely dark gray, occupying the East African highlands from the Kikuyu District to Mt. Elgon, and possibly to the shores of Lake Kivu and highlands farther south.

Camaroptera brevicaudata griseigula Sharpe, described from the

[1] 1934, Rev. Zool. Bot. Africaines, vol. 25, p. 102 (Mt. Elgon).

Voi River in Kenya Colony, is an intermediate between the dark *aschani* of the highlands and the small *C. b. erlangeri* Reichenow, with very whitish underparts, of the East Coast from the lower Juba River and Manda Island to Rabai and the vicinity of Handeni in Tanganyika Territory. The further distribution of *griseigula* and *erlangeri* in Tanganyika Territory is not well known.

Camaroptera brevicaudata tincta, of forested Upper and Lower Guinea, is a dark grayish race like *abessinica* and *aschani*, a little smaller than the latter, having wings 49–57 mm., and usually more whitish on the middle of the belly. Beyond the edges of the Congo forest it seems to intergrade gradually with the adjoining races, so there is considerable variation, not worthy of naming.

Camaroptera brevicaudata harterti Zedlitz, of northwestern Angola, has underparts almost wholly whitish, crown and back much lighter and browner than *tincta*, and tail greenish above. *C. b. sharpei* Zedlitz, of southern Angola, Damaraland, Ngamiland, and northern Transvaal, is like *harterti* but buffier, and has the tail grayish. *C. b. beirensis* Roberts, grayer on the crown in the breeding season, ranges from Portuguese East Africa and eastern Rhodesia to Nyasaland and the highlands of the southeast Congo. *C. b. marleyi* Roberts, with crown still darker gray, was described from northeastern Zululand.

The very closely allied *C. olivacea* (Vieillot),[1] with green back and tail, ranges from Cape Province along the southeast coast and northward to Vanga at the border of Kenya Colony. It may live in a few places together with *C. brevicaudata*, and it is divisible into four races.

The exact limits of *C. brevicaudata tincta* are not easy to fix. Many examples from the Upper Congo forest are not so dark gray as those of the Gaboon and southern Cameroon. Whether or not *tincta* inhabits the forests of Uganda is debatable, because of intergradation with *abessinica* and *aschani*. In the northeastern Congo specimens from the eastern Uelle and Mahagi Port are so light beneath as to agree best with *abessinica*. To the south of the forest the paler color of the belly is again evident in examples from Manyanga and Gombe Lutete, and others from Kindu and the Manyema District have the lower breast and flanks surprisingly whitish, contrasting with the grayish chest. Speci-

[1] Called *C. brachyura* by Sclater, 1930, Systema avium Aethiopicarum, pt. 2, p. 542.

mens from the shores of Lake Kivu are very gray below and closely similar to *aschani* of the Kenya highlands. It seems probable that the dark birds reported from the Kungwe highland by Moreau[1] as *tincta* will be found to resemble these Kivu birds.

For the present we may consider the range of *tincta* as extending from eastern Sierra Leone and Liberia to southern Cameroon, the Lower Congo, Ubangi, Lower Uelle, Ituri, Kivu lowlands, Manyema, southern Kasai, and probably central Uganda. This warbler, however, is never seen in the virgin forest, only in and about clearings, and in the savanna districts it is partial to strips of woodland or the densest thickets. Although I took one example at 5300 feet on Mt. Nunje near Bogoro, and noted the species as present at Luofu, 5200 feet, this wren-like warbler does not invade the mountain forests of the eastern Congo. On east Ruwenzori Woosnam reported it only up to 5500 feet, and along the western side I found it only at the very base of the range, near the villages of Nganzi and Pakihoma. Ansorge's specimen from the Lubilia River is best referred to *tincta*.

About villages in the Ituri forest it is one of the familiar birds, skulking in the bushes about houses or gardens, and reminding one of a wren by its habit of carrying the tail pointed upward. Family parties are often encountered, and they betray their presence by a short, plaintive "mă," serving as a call note. What suffices as a song for the male is an unmusical and monotonous "tship, tship, tship. . ." Sometimes I have known the males also to take short flights in the bushes, beating their wings loudly.

Perhaps in savanna areas they do not nest in the dry season; but in the Ituri breeding birds were taken in May, July, August, and December, as well as a nestling in September, so there reproduction takes place at all seasons. The nest, as described by Bates,[2] is built in the same manner as that of *Prinia* and of many other Sylviidae. Uniting the green leaves of a spray, in a variety of low trees or bushes, sometimes an *Aframomum* plant, to form the outside frame for its nest, it arches one or more leaves over it to form a roof. The other building materials consist largely of plant down, while the yellow fibers used in stitching the leaves and binding the whole together may be of spider's silk. The eggs are usually two in a set, occasionally three,

[1] 1943, Ibis, p. 403.

[2] 1909, Ibis, p. 70; 1910, Ibis, p. 619.

16–18 mm. by 11–12, and are most often pale bright greenish blue, either plain or sparingly marked all over with pale reddish brown and lilac. Others have been found that were pure white, or whitish with numerous spots of brown.

The food of this warbler, I am sure, consists exclusively of insects and their allies, though I kept notes of only two stomach examinations.

Camaroptera brevicaudata abessinica Zedlitz

Camaroptera griseoviridis abessinica ZEDLITZ, 1911, Jour. Ornith., p. 338 (type locality: Harar, Abyssinia). SCLATER AND M.-PRAED, 1918, Ibis, p. 675 (Yambio; Tembura).

Camaroptera brevicaudata SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 200 (in part. Mswa; Tunguru). EMIN, 1922, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 3, p. 375.

Camaroptera brevicaudata brevicaudata SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 543 ("Uelle district"). GRANVIK, 1934, Rev. Zool. Bot. Africaines, vol. 25, p. 103 (in part. Uelle). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 192 ("Uelle district").

Camaroptera brevicaudata abessinica SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 544 ("Ruwenzori"). BOWEN, 1931, Catalogue of Sudan birds, vol. 2, p. 31 (Kajo-Kaji).

Camaroptera brevicaudata tincta SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 121 (in part. Mauda; Mahagi Port).

SPECIMENS: Faradje, two males, February 12, October 23; immature male, October 1.

DISTRIBUTION: British Somaliland and Abyssinia south to Lake Baringo, northern Uganda, the eastern Uelle District, and southern Bahr-el-Ghazal Province. Specimens from Mauda, Faradje, and the north end of Lake Albert seem to agree best with this race, though they show no seasonal change of color. In this region they are found only in patches of woods or dense thickets, never in the open grassland.

A nest found by Cheesman[1] in Abyssinia in early August contained two russet-colored eggs, completely covered with russet spots and blotches.

Camaroptera b. brevicaudata (Cretzschmar) certainly does not reach the northern Congo, despite occasional statements to that effect.

Camaroptera brevicaudata aschani Granvik

Camaroptera brevicaudata aschani GRANVIK, 1934, Rev. Zool. Bot. Africaines,

[1] 1935, Ibis, p. 613.

vol. 25, p. 102 (type locality: northeast slope of Mt. Elgon, Kenya Colony).

Camaroptera griseoviridis REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 363 (Kwidjwi I.).

Camaroptera griseoviridis griseigula SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 304 (in part. Kisenyi on L. Kivu).

Camaroptera brevicaudata griseigula SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 311 (Ngoma). PETERS AND LOVERIDGE, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 254 (Idwji I.).

Camaroptera brevicaudata tincta SCHOUTEDEN, 1935, Rev. Zool. Bot. Africaines, vol. 27, p. 402.

DISTRIBUTION: Highlands of East Africa, from Ngong to Mt. Elgon and the shores of Lake Kivu, probably also the Kungwe highland near Lake Tanganyika. A very gray-bellied race, usually found around 5000 feet or a little higher.

Sassi (1916) noted that specimens from Kisenyi taken in May and June were grayer on the belly than those from the forest area between Beni and Mawambi. Grauer also collected four individuals for Lord Rothschild at Kisenyi and on Idjwi Island in March, October, and November which show the same characteristic. Their wings measure 56.5 to 59 mm. There is no doubt as to their close resemblance to the birds of Kenya Colony, and some examples from the forests of Uganda are of much the same coloration.

How wide an area such birds inhabit in the Kivu we do not know. Inasmuch as the lowland birds near Baraka are like *tincta* but with still paler underparts, and those near Kigoma so pale that they have been called *erlangeri*, it does not seem as though *tincta* could reappear on Mt. Kungwe. More probably the birds reported by Moreau (1943) are similar to *aschani*.

Camaroptera brevicaudata beirensis Roberts

Camaroptera brevicaudata beirensis ROBERTS, 1932, Ann. Transvaal Mus., vol. 15, p. 30 (type locality: Zimbiti, Beira, Portuguese East Africa).

Camaroptera olivacea MATSCHIE, 1887, Jour. Ornith., p. 155 (Mpala; "Lualaba" = Luvua R.).

Camaroptera sp. SCHALOW, 1887, Jour. Ornith., p. 243 (Marungu Mts.).

Camaroptera griseoviridis REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 616 (in part. "Lualaba"; Mpala).

Camaroptera sundevalli NEAVE, 1910, Ibis, p. 153 (Lualaba R.; Kambove).

Camaroptera brevicaudata noomei SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 544 (Katanga). GRANVIK, 1934, Rev. Zool. Bot. Africaines, vol. 25, p. 103. LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 82 (Kayoyo). VERHEYEN, 1947, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 23, no. 10, p. 4 (Musosa).

DISTRIBUTION: Portuguese East Africa to Nyasaland, Northern Rhodesia, the Katanga, and presumably Marungu. This is one of the races with a very brownish dry-season plumage, and few examples have been taken within our limits. I have seen no specimen from Marungu.

Neave and Lynes both found it only in thick bush near streams, not in the open savanna woods. In behavior and voice this race resembles *C. b. tincta*, and it doubtless nests in the Katanga from October to April. In South Africa nests of this or an allied race have been found sewn between several leaves in bushes, and containing two to three eggs, either pale greenish blue, unspotted, or white with coarse spotting of light reddish, and with violet-gray shell markings. Dimensions are 16.6–18.5 mm. by 11.7–12.6.

[*Camaroptera brevicaudata griseigula* Sharpe]

Camaroptera griseigula SHARPE, 1892, Ibis, p. 158 (type locality: Voi R., Kenya Colony).

It is evident from Sharpe's description that he meant to distinguish this low-country form, with gray throat and quite different brownish flanks, from the bird of Elgeyu in the highlands, with throat and flanks gray. Birds from near Voi, as Van Someren[1] pointed out, are intermediate between the coastal *erlangeri* and the highland race now called *aschani*. Friedmann (1937) believed that *griseigula* extended through eastern Kenya Colony to the south end of Lake Rudolf, and into Tanganyika Territory toward the southeast shore of Lake Victoria. It might indeed be expected that birds of this general nature would go even farther in the direction of Lake Tanganyika, especially since Grant and Mackworth-Praed[2] have reported *griseigula* from Mbulu and *erlangeri* from Kigoma.

Grauer's specimens from the vicinity of Baraka on the northwest side of Tanganyika are perhaps closer to *griseigula* than to *tincta*, so we may yet find that this eastern race reaches the northern shores of Lake Tanganyika.

[*Camaroptera brevicaudata harterti* Zedlitz]

Camaroptera griseoviridis harterti ZEDLITZ, 1911, Jour. Ornith., p. 342 (type locality: Canhoca, northwestern Angola).

[1] 1922, Novitates Zool., vol. 29, p. 227; 1932, idem, vol. 37, p. 371.

[2] 1941, Bull. Brit. Ornith. Club, vol. 61, p. 69.

This green-tailed race of northwestern Angola, in the region of Golungu Alto and Pungo Andongo, has never been taken in the Belgian Congo, but it may perhaps be looked for in wooded spots in the southern Kwango District.

Camaroptera simplex cinerea (Reichenow)

Calamonastes cinereus REICHENOW, 1887, Jour. Ornith., pp. 215, 306 (type locality: Leopoldville, Belgian Congo); 1905, Die Vögel Afrikas, vol. 3, p. 574. DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32. SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 334 (Macaco; Tshisika); 1925, idem, vol. 13, p. 14 (Kunungu). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 517 ("Lower Congo"). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 79 (Tshikapa).

Camaroptera concolor REICHENOW, 1887, Jour. Ornith., p. 306 (Leopoldville).

Camaroptera congica REICHENOW, 1891, Jour. Ornith., p. 67 (type locality: Leopoldville); 1905, Die Vögel Afrikas, vol. 3, p. 620. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 140.

Camaroptera brachyura congica ZEDLITZ, 1911, Jour. Ornith., p. 333 ("Lower Congo"). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 542.

? *Calamonastes* spec. SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 334 (Macaco).

Calamonastes cinereus cinereus BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 80, fig. 20.

Calamonastes simplex cinereus GRANT AND M.-PRAED, 1942, Bull. Brit. Ornith. Club, vol. 62, p. 59.

DISTRIBUTION OF THE SPECIES: From central Abyssinia and Somaliland south to Tanganyika Territory, then westward to Angola, the southern Congo, and the Loango Coast. *C. s. simplex* (Cabanis) of northeast Africa is a dark brownish gray bird with obscure barring on chin and abdomen. It extends southward through Kenya Colony to Lake Natron and the Pangani River. *C. s. undosa* (Reichenow) is somewhat browner above, much paler below, and more barred there, sometimes even on the chest. It ranges from the Loita district and Kagera Valley to Iringa and Ufipa. *C. s. katangae* (Neave) is grayish brown above, still lighter below, with lower breast and flanks whitish gray. The barring of its underside is very weak or mostly absent. Its range includes Marungu, the Upper Katanga, and neighboring parts of Northern Rhodesia. *C. s. cinerea* is much grayer throughout, with throat and abdomen faintly barred, the belly paler gray than any other part. It occupies the savannas from the Loango Coast to the southern Kasai District and those of northern Angola.

The wing length is 56 to 61 mm. According to Ansorge's labels, the iris in both sexes is neutral orange, rim of eyelids burnt sienna; the bill black; feet are brown-ocher.

On the Benguella Plateau live birds of similar gray color, but with wings 60 to 67 mm., and from the Mossamedes district I have seen one adult male with whitish belly, suggestive of the race *katangae*.

The type of *Camaroptera congica*, which I examined at the Berlin Museum in 1937, proved to be an immature example of *C. s. cinerea*. A second specimen labeled as *congica*, from Manyanga, was plainly *Camaroptera brevicaudata* in juvenal plumage. I can see no good reason for retaining *Calamonastes* as a valid genus.

The race *cinerea* is rather widely distributed in the southern Congo savannas and is probably not uncommon. Because of its retiring habits (it seems to inhabit thickets and to stay fairly close to the ground) it has not often been collected.

The nest of the species is known only from the observations of the Moreaus[1] on *C. s. simplex* in Usambara. It is globular, with a side entrance, placed about a foot above the ground in a low shrub. Slung between two stems, it has leaves drawn down over it with stitches, the outer surface being composed mainly of material that resembles silk from caterpillars. A fibrous cup is built inside. One nest contained three eggs, grayish white, with minute brown dots slightly concentrated in a belt around the thick end; dimensions 18.8–19.3 mm. by 12.5 mm.

The voice of this nominate race they described as a percussive and emphatic "tewp" repeated every two-thirds of a second, with beak snapping open and shut, the whole bird quivering. Another call was a soft "oo-tutututu."

Camaroptera simplex katangae (Neave)

Calamonastes katangae NEAVE, 1909, Ann. Mag. Nat. Hist., ser. 8, vol. 4, p. 130 (Katanga; type from Lufupa R.); 1910, Ibis, p. 149 (Dikulwe R.; upper Lualaba R.; Lufupa R.). SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 285 (Kafubu R.). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 517.

Calamonastes cinereus katangae BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 81.

Calamonastes simplex katangae GRANT AND M.-PRAED, 1942, Bull. Brit. Ornith. Club, vol. 62, p. 60.

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[1] 1939, Ibis, pp. 305, 306.

DISTRIBUTION: Highlands of Marungu, those of Katanga, and the Chambezi Valley east of Lake Bangweolo. This pale-bellied race is not known from any locality below 3500 feet. Neave reported that in the Katanga it is "not rare but retiring, and easily overlooked. It is particularly fond of dense thickets which are found in the woodland, on the top of large termite-mounds." Schouteden obtained five specimens along the Kafubu River near Elisabethville.

In Marungu Rockefeller and Murphy secured two males at Kasoko, 4100 feet, and a female at Kinia, 3925 feet. They found them in the more thickly wooded spots, and their color notes are similar to Neave's. The iris is light hazel to chestnut brown, rim of eyelids light brown; bill black; feet are yellowish or yellowish flesh color.

Camaroptera simplex undosa (Reichenow)

Drymoica undosa REICHENOW, 1882, Jour. Ornith., p. 211 (type locality: Kakoma, Tabora district, Tanganyika Territory).

DISTRIBUTION: Amala River, southern shores of Lake Victoria, and Kagera River, south to Iringa and to Ufipa near the southeast corner of Lake Tanganyika. On July 19, 1907, Rudolf Grauer collected a female of this race between the Kagera River and "Marienseen," a locality just to the southeast of Lake Rugwero, in the northeast corner of Urundi. There can be no doubt as to its occurrence within our eastermost limit, and there is a possibility that it may be found along the northeast shore of Lake Tanganyika.

[*Camaroptera fasciolata buttoni* (White)]

Calamonastes fasciolatus buttoni WHITE, 1947, Bull. Brit. Ornith. Club, vol. 67, p. 55 (type locality: Ndola, Northern Rhodesia).

The range of this brownish species extends from the Transvaal to the highlands of Angola, Northern Rhodesia, and the Songea district of Tanganyika Territory. *C. f. pallidior* (Hartert) of Angola is less regularly barred on breast and flanks than nominate *fasciolata* of South Africa, and *C. f. stierlingi* (Reichenow) of the Nyasa region is less rufous on the abdominal region and tail. *C. f. buttoni*, recently discovered in the vicinity of Ndola, is more closely barred beneath than *stierlingi*, less tinged with rufous above.

As a rule this warbler is found in savanna woods, feeding amid the grass and taking to the trees when alarmed. The wings often produce an audible rattle. The call note is a "maa," the song a whistled "biririt-biririt," which may be repeated five to eight times, according to Jack Vincent.

Ndola is so close to the Congo border that *C. f. buttoni* seems certain to extend into the extreme southeastern corner of the Upper Katanga.

KEY TO THE SPECIES OF *Cisticola* LIVING IN OR NEAR THE CONGO
(ADULTS AT ALL SEASONS)

1. Back not distinctly marked with blackish or dark brown, only faintly dappled at most 2
   Back streaked or mottled with black or dark brown 19
2. Larger; wing usually exceeding 52 mm. in males, or 48 mm. in females 3
   Smaller; wing usually less than 52 mm. in males, or 48 mm. in females 14
3. Crown with a distinct rufous or light brown cap, clearly differentiated from back 4
   Crown color like that of back, or with a gradual transition between them .. 10
4. Rufous outer webs of primaries forming a distinct reddish area on wing 5
   Outer webs of primaries colored much like adjacent areas of wing 7
5. Wing of male 74–78 mm., of female 59–64 mm. ..... *C. natalensis*
   Smaller and with slenderer bill 6
6. Wing of male 60–74 mm., of female 55–59 mm. ..... *C. chiniana*
   Wing of male 53–60 mm., of female 47–55 mm. ..... *C. cantans*
7. Loral feathering forms a distinct blackish patch ..... *C. chubbi*
   Loral feathering usually pale, never completely blackish 8
8. Smaller; wing of male 52–57 mm., of female 49–53 mm. ..... *C. ruficeps*
   Larger; wing of male 58–64 mm., of female 51–56 mm. 9
9. Bill mostly black, with only a little gray beneath mandible ..... *C. anonyma*
   Bill dark brown above, paler and grayish beneath ..... *C. emini*
10. Forehead and whole face light rufous, or at least rufous buff; underparts, especially flanks, buffy or rufous ..... *C. erythrops*
    Face not rufous in adults, though forehead, crown, or back may be so colored 11
11. Larger; wing of male 68–74 mm., of female 54–64 mm.; usually dappled on back ..... *C. natalensis*
    Smaller; wing of male 62–70 mm., of female 50–56 mm.; back plain or with fine dusky streaks 12
12. Back and rump grayish brown, not very dark ..... *C. bulliens*
    Back and rump dark brown, reddish brown, or rufous 13
13. Forehead and crown a little more reddish brown than back ..... *C. woosnami*
    Forehead and crown of the same brown as back, rufous only when whole upperparts are so colored ..... *C. lateralis*
14. Head top rufous, contrasting with brown or grayish back 15
    Head top not distinctly rufous unless whole upperparts are rufous 17

15. Outermost primary 14–16 mm. long; tail 35–44 mm., and never blackish ..... *C. fulvicapilla*
    Outermost primary only 8–13.5 mm. long; tail 41–55 mm. long 16
16. Next-to-outermost primary about 27 mm. long; tail-feathers very dark brown, with moderate gray tips ..... *C. angusticauda*
    Next-to-outermost primary only 19–20 mm. long; tail-feathers blackish with narrow gray tips ..... *C. pearsoni*
17. Whole upperparts, wings, and middle tail-feathers bright rufous; tail slightly rounded, outermost quills 5–6 mm. shorter than the median ones ..... *C. troglodytes*
    Upperparts grayish brown to moderately rufous brown; tail more rounded, outermost quills more than 7 mm. shorter than median 18
18. Upperparts always rather light rufous brown, more ruddy on rump; outermost primary 13–14 mm. long, with rather blunt tip ..... *C. rufa*
    Upperparts grayish brown to rather rufous brown, scarcely more ruddy on rump; outermost primary 12–14 mm., with pointed tip ..... *C. brachyptera*
19. Medium to large in size; rump colored like back or more grayish; wings of male 53–78 mm., of female 49–64 mm., tails of both sexes 34–70 mm. .. 20
    Small-sized, with a distinct area of yellowish brown or rufous on rump; wing not more than 57 mm. in males or 51 mm. in females; tail never exceeding 45 mm. 32
20. All rectrices markedly rufous, with distinct black subapical marks extending to both webs, and light tips more or less rufous; wings 51–62 mm. long ..... *C. rufilata*
    Most of the rectrices duller brown, grayish, or blackish, or else blackish markings are restricted to inner webs 21
21. Larger, thick-billed; with metatarsus over 25 mm. in males, or 23 mm. in females 22
    Smaller, with more slender bills, and metatarsus under 25 mm. in males, or 23 mm. in females 23
22. Nape and hind neck rufous, in sharp distinction to back; crown rufous, usually mottled with blackish ..... *C. robusta*
    Nape and hind neck not much more rufous than back, and differing little from crown ..... *C. natalensis*
23. Outer webs of primaries little or no more rufous than remaining wing surface 24
    Outer webs of primaries distinctly rufous 28
24. Larger; wing of male 61–74 mm., of female 51–59 mm. ..... *C. chiniana*
    Smaller; wing of male 53–62 mm., of female 49–55 mm. 25
25. Rectrices so blackish or dark brown basally that no subapical bar is visible from above, their tips broadly gray-white ..... *C. carruthersi*
    Rectrices grayer or lighter brown, often with dark subapical markings 26
26. All outer rectrices with blackish subapical bar extending to both webs .. .. *C. ruficeps*
    Rectrices brownish, with dark subapical markings reduced or restricted to inner webs 27
27. Throat and chest washed with grayish buff; most rectrices with black subapical spots, but only on inner webs ..... *C. lais*

Throat whiter; outermost rectrices brown, unspotted, while inner ones may have diffuse subapical spots on inner webs..... *C. aberrans*

28. Back so heavily striped as to appear nearly black, rump likewise very dark; bill small, culmen to base 13–14 mm..... *C. tinniens*
Back less heavily striped, rump lighter gray or brownish; culmen usually 14–16 mm..... 29

29. Dark markings on tail-feathers restricted to inner webs..... *C. lais*
Dark markings on tail-feathers extend to both webs..... 30

30. Blackish subapical bars on tail only about 5 mm. wide..... *C. chiniana*
Blackish subapical bars on tail about 7 mm. wide..... 31

31. Tail shorter, about one-fifth shorter than wing in breeding dress, or about equal to wing in off-season plumage..... *C. galactotes*
Tail longer, about equal to wing in breeding dress, or one-tenth longer in off season..... *C. pipiens*

32. Tail-feathers, as seen from below, with a black subapical bar or spot..... 33
Tail-feathers solidly blackish, even below, except for pale tips and edgings. 35

33. Dark subapical markings of outer tail-feathers also visible from above; outermost primary not very narrow, about 14 mm. long... *C. juncidis*
Dark subapical markings not distinguishable from above; outermost primary narrower, only 10–12 mm. long..... 34

34. General coloration lighter and duller; rump light yellowish brown.. *C. aridula*
General coloration darker and richer; rump rufous..... *C. eximia*

35. Tail relatively long, always 35–44 mm., black except for tips and edgings; outermost primary at least 14 mm. long..... *C. dambo*
Tail short, in breeding dress always less than 35 mm.; outermost primary 7–13 mm. long..... 36

36. Outermost primary very narrow and only 7–10 mm. long..... 37
Outermost primary less narrowed, and 10–13 mm. long..... 38

37. Larger; wing of male 54–57 mm., of female 47–51 mm..... *C. textrix*
Smaller; wing of male 46–51 mm., of female 43–47 mm..... *C. ayresii*

38. Larger; wing of male 50–56 mm., of female 49–51 mm..... *C. brunnescens*
Smaller; wing of male 46–50, of female 44–48 mm..... *C. eximia*

Because of the great number of species of *Cisticola*, the slight difference of size and proportions, general similarity in color, and marked changes due to age and season, it is extremely difficult to construct a good key to their identification. When the key has been used, and a name obtained, it is essential that this be checked against the known geographic range. It would scarcely be possible to give a key for specimens without sex, or for those in juvenal plumage.

The great work on this genus of warblers is the "Review of the genus *Cisticola*" by Lynes (1930, Ibis, Cisticola Supplement). The linear sequence there adopted was not wholly satisfactory to the author himself. On page 457 he included a "Taxonomic note" in which he discussed the possibility of placing the *brachyp-*

tera group between "the small steppe-lovers" (or *juncidis* and *textrix* groups) and "the larger savanna-lovers" (*subrufícapilla* to *natalensis*). In my opinion that procedure would have given an arrangement easier to remember and perhaps more natural.

Yet more fundamental is the question of the trend of evolution in this large genus of grass warblers. It is my firm belief that the most highly specialized, or those that depart most widely from other related genera of Sylviidae, are the little "cloud-scrapers" like *C. ayresii* which Lynes placed near the beginning of his list. The species that depart least in form and in nest building from the allied genera *Prinia* and *Camaroptera* are *C. erythrops* and *C. cantans*, with large outermost primaries and little streaking in their color schemes. They also have retained the tailor-bird method of nest construction, and the only other species of *Cisticola* now known to sew its nest between leaves is *C. rufa*.[1]

The linear order I now employ is based on the belief that the course of evolution in *Cisticola* has been always toward more complete adaptation to life in the grass, away from the bushes and coarse high grass toward open fields of finer grass, even to those that Lynes called "pastures," often marshy during the rains. On that assumption I begin with *C. erythrops*, then group many species in much the same way as Lynes, and end with *C. ayresii* and *textrix*.

Cisticola erythrops erythrops (Hartlaub)

Drymoeca erythrops HARTLAUB, 1857, System der Ornithologie Westafrica's, p. 58 (type locality: West Africa, between Cape Palmas and Calabar).

Melocichla pyrrhops CABANIS, 1875, Jour. Ornith., p. 236 (type locality: Chinchoxo, Enclave of Cabinda).

Cisticola erythrops SHARPE, 1883, Catalogue of the birds in the British Museum, vol. 7, p. 250 (Landana). JOHNSTON, 1884, The River Congo, p. 364 (Cataract region). NEUMANN, 1906, Jour. Ornith., p. 275.

Cisticola erythrops erythrops BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 367 (Ubangi R.). LYNES, 1930, Ibis, Cisticola Supplement, pp. 19, 366, 369, 630, pl. 13, fig. 55 (Boma; Kwango on Ubangi R.; upper Kemo R.). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 557. LYNES AND SCLATER, 1934, Ibis, p. 29. BOUET, 1934, Ois. Rev. Française Ornith., new ser., vol. 4, p. 642; 1945, idem, new ser., vol. 14, p. 70 (Bangui). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 182.

SPECIMEN: Boma, male, January 5.

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[1] See Holman, 1947, Ibis, p. 648.

ADULT MALE: Iris light brown, maxilla blackish, mandible light bluish gray, feet pinkish buff.

DISTRIBUTION OF THE SPECIES: From the Gambia to Abyssinia, Usambara, Natal, and the Benguella Plateau of Angola, but absent from the center of the forests in Upper and Lower Guinea. *C. e. erythrops* of the region between the Gambia and Southern Nigeria, ranging eastward to the Ubangi and perhaps south to the Congo mouth, is a very rufous race, especially in off-season plumage. *C. e. sylvia* is a little less rufous, and has no ruddy dry-season dress. It is believed to extend from the northeastern Congo and the Kasai to Uganda, the base of Mt. Kenya, Usambara, and central Tanganyika Territory. *C. e. nilotica* Madarász and *C. e. pyrrhomitra* Reichenow occupy the middle Blue Nile and Abyssinia.

Cisticola erythrops nyasa is a rather small, light-colored race, with a more buffy dress in the dry season, which lives from the southeastern Congo and southern Tanganyika Territory to Natal. *C. e. lepe* is a pale, grayish race of Angola.

The range of nominate *erythrops*, according to Lynes (1930), extends southward along the coast to Landana and the Lower Congo. There are still no records from the Gaboon or from the Cameroon south of Efulen and Bitye. Two specimens were known from Landana and Chinchoxo, I collected a male at Boma in 1915, and Lynes and Vincent took a breeding pair there in 1931. My Boma bird, however, is more whitish beneath than *sylvia*. Lynes (1934) seems to have decided that not only birds of the Lower Congo but even those of the Kasai were *C. e. erythrops*. I still feel some doubt about the Lower Congo population, and shall continue to call Kasai birds *sylvia*.

If Cameroon birds are *C. e. erythrops*, then the nominate race certainly extends eastward to the savannas of the northwest Congo near the Ubangi River, where Boyd Alexander obtained specimens, and it may include our examples from the Uelle and northern Ituri. Behavior and nesting are exactly like those of *C. e. sylvia*, described below. The species is quite common near Boma on the lower Congo, and it has been taken also at Brazzaville.

Cisticola erythrops sylvia Reichenow

Cisticola sylvia REICHENOW, 1904, Ornith. Monatsber., p. 28 (type locality:

Ulegga, eastern Congo); 1905, Die Vögel Afrikas, vol. 3, p. 563; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 357 (Ukondju).

Cisticola erythrops O -GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 348, pl. 19, fig. 11 (Mubuku Valley, 6000 ft.; Mokia, 3400 ft.; Butahu Valley, 4000 ft.). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 358. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 296 (Urundi; Usumbura; Uvira; Beni; Irumu). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 290 (Buwissa).

Cisticola lateralis SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 290 (in part. Bulaimu).

Cisticola erythrops erythrops SCLATER AND M.-PRAED, 1918, Ibis, p. 656, pl. 10, fig. 5 (Meridi; Lado district). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 136 (Tabaro; Sidabo). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 89 (Luluabourg; Leopoldville).

Cisticola erythrops sylvia LYNES, 1930, Ibis, Cisticola Supplement, pp. 19, 372, 373, 666 (Lusambo; Panga on Aruwimi R.; west of Baraka; northwest of L. Tanganyika; Luofu; Rutshuru; west of L. Edward; Medje; Mahagi Port, Poko; Arebi; Faradje; Ruanda; Kigezi). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 558. FRIEDMANN, 1930, The African Republic of Liberia and the Belgian Congo, vol. 2, p. 760 (Lulenga). SCHOUTEDEN, 1935, Rev. Zool. Bot. Africaines, vol. 27, p. 402 (Katana on L. Kivu); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 122 (Buta); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 100; 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 337 (Kibingo; Astrida). FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 274. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1109. PETERS AND LOVERIDGE, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 254 (Idjwi I.).

Drymodyta erythrops sylvia HENDRICKX, 1944, Ostrich, vol. 15, p. 206 (southwest of L. Kivu).

SPECIMENS: Medje, two males, May 19, August 12; three immature males, January 26, June 8; two females, May 22, September 12; two immature females, January 26, March 12. Niangara, female, June 14; juvenile female, November 26. Faradje, three males, May 12, September 30; three females, February 26, August 21, September 21; juvenile female, August 18.

ADULTS: Iris light brown; maxilla blackish, mandible light gray; feet pale flesh color, claws pale gray.

IMMATURE FEMALE: Iris brownish gray; maxilla dark brownish, mandible yellow basally, whitish anteriorly; feet very pale yellowish pink.

DISTRIBUTION: Borders of the Congo forest in the Uelle, Ituri, Kivu, Manyema, and Kasai, perhaps even the Middle and Lower Congo; thence eastward across Uganda and Urundi to the

base of Mt. Kenya and to Usambara. Over this great area there is some variation in color, and specimens from the Uelle and others from Kenya Colony seem to average more buffy or rufous than those of the eastern Congo border and Uganda.

Except for *anonyma*, there is no species of *Cisticola* more apt to be found in clearings within the boundaries of the lowland Congo forest than *C. erythrops*. This evidently is because of its fondness for patches of tall, coarse grasses. Yet it is not found in the inner parts of the Upper Congo forest, and I question the record from Panga, if meant for Panga on the Aruwimi. Though common at Medje and Bafwabaka, it was not noticed south of the latter station. Haunting high grass and bushes in the clearings along the northern edge of the forest, or the densest thickets in the more open savanna of the Uelle, it was always a difficult bird to see. But its presence is soon betrayed by its loud excited calls, consisting of a reiterated series of shrill notes with rising pitch and volume. In abbreviated form I wrote it: "chic-chic-chic. . ., cheep-cheep-cheep. . ., CHEER! CHEER! CHEER! . . ." Meanwhile another bird, doubtless the female, usually accompanies the song with a more rapid series of notes that are not quite so loud, or it may seem that several birds are calling simultaneously. Following up these sounds, one could often find the birds in a small party.

Along the eastern edge of the Congo the habits and voice are the same, and the birds were found from Kasenyi on the Lake Albert shore at almost every place with suitable cover, up to 6900 feet near Mukotshi on the highland northwest of Lake Edward. East of Rutshuru, too, they were noted up to around 6800 feet. Below those levels the question of vegetation was more important than the exact elevation. At the west base of Ruwenzori *sylvia* is common in the dense elephant grass, up to 5500 feet at least. A little higher up, *Cisticola chubbi* replaces it, and the two species are readily distinguished by their songs. Sooner or later *sylvia* will give the ascending series of excited "chwees" or "cheers" that is so characteristic.

In the Cameroon Bates found *Cisticola erythrops* nesting at all seasons. This may be true in the northern Ituri, but I believe that in the Uelle they do not breed in the dry season. We found two nests near Medje, in July and September, and one at Faradje in August. Dissections indicated that breeding might begin there as early as May and continue until November.

Nests are built of dry blades of grass and lined with white plant down. The entrance is at one side of the top, and the nest is supported at 2 1/2 to 3 feet from the ground by being sewn with silk between two or three green leaves of some herbaceous plant. Those we found were hidden in dense patches of grass, either *Pennisetum purpureum* (elephant grass) or *Imperata* (alang). Two eggs composed each set, being light greenish blue to pale green finely but thickly spotted with red-brown. Other eggs have been reported as of white ground color, always stippled with rusty reddish. Sets of three are frequent. Average dimensions are 17.2 by 13.0 mm.

The young when hatched are absolutely naked, pinkish with yellow bills, and with a black spot on each side of the tongue. For a long time the plumage of the young remains much browner above than that of the adults, and their rectrices seem surprisingly broad.

As with the other species of *Cisticola*, insects are practically the sole food.

Cisticola erythrops nyasa Lynes

Cisticola erythrops nyasa LYNES, 1930, Ibis, Cisticola Supplement, pp. 19, 374. 653 (type locality: Chiromo, Ruo District, Nyasaland; also from Funda Biabo; Kinda); 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 89 (upper Lufira and Lubudi rivers; Kafakumba-Kinda; Kasenga). BOWEN, 1931, Proc. Acad. Nat. Sci. Philadelphia, vol. 83, p. 289 (Bukama). LYNES AND SCLATER, 1934, Ibis, p. 29 (Elisabethville; Tenki; Lubudi R.). A. W. VINCENT, 1948, Ibis, p. 302.

Cisticola erythrops SHELLEY, 1901, Ibis, pp. 166, 170 (Kalungwisi R.). LYNES AND SCLATER, 1933, Ibis, p. 724, pl. 24 (map) (Upper Katanga).

Cisticola sylvia NEAVE, 1910, Ibis, p. 145 (in part. Dikulwe R.; Lofu R.).

DISTRIBUTION: Southeastern Congo and southern Tanganyika Territory to lower Transvaal and the coast of Natal. Within our limits it is found only in the Upper Katanga and probably some adjacent areas. A specimen from Mkuli in Marungu, however, is but little paler on face and underparts than *C. e. sylvia*.

According to Lynes, this race is found in thick bush in valleys and bottoms, and agrees with the other forms in its behavior and nesting.[1]

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[1] See also A. W. Vincent, 1948, Ibis, p. 302.

[*Cisticola erythrops lepe* Lynes]

Cisticola erythrops lepe LYNES, 1930, Ibis, Cisticola Supplement, p. 376 (type locality: Lepe Mission, 5000 feet, Benguella Province, Angola).

The very gray race of Angola, with little rufous on face or flanks, ranges north at least to Ndala Tando. Lynes found no approach to it among specimens from the Lower Congo, but perhaps birds of the southern Kwango District will be found to show such a tendency, or even to agree with *lepe*.

Cisticola cantans belli Ogilvie-Grant

Cisticola belli OGILVIE-GRANT, 1908, Bull. Brit. Ornith. Club, vol. 21, p. 71 (type locality: Muhokia, southeastern base of Ruwenzori, Uganda); 1910, Trans. Zool. Soc. London, vol. 19, p. 350.

Cisticola cinerascens SHELLEY, 1888, Proc. Zool. Soc. London, p. 23 (Tingasi). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127.

Cisticola semitorques REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 563 (in part. Tingasi); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 358. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 290 (Bulaimu).

Cisticola pictipennis O.-GRANT, 1908, Ibis, p. 295 (Mfumbiro Volcanoes, 5000 ft.). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 358.

? *Cisticola rufopileata* SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 295 (in part. Urundi; Rutshuru Plain).

Cisticola petrophila SCLATER AND M.-PRAED, 1918, Ibis, p. 654 (Uelle R.; Tingasi).

Cisticola pictipennis belli GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 135 (Butalia).

Cisticola cantans belli LYNES, 1930, Ibis, Cisticola Supplement, pp. 19, 358, 359, 620 (Mauda; Faradje; Arua; Aba; Vankerckhovenville; Mahagi Port; Djalasinda; Luofu; west of Baraka). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 557. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 311; 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 122 (Dika); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 100; 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 337 (Kibingo; Astrida). GRANVIK, 1934, Rev. Zool. Bot. Africaines, vol. 25, p. 106. CAVE, 1938, Sudan notes and records, vol. 21, p. 182 (Tambura). JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 1107.

Cisticola cantans concolor SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 556 (in part. "Uelle district").

Cisticola anonyma SCHOUTEDEN, 1935, Rev. Zool. Bot. Africaines, vol. 27, p. 402 (Mulungu; Nyanza on L. Tanganyika).

SPECIMENS: Pawa, male, July 13. Niangara, male, June 10. Dungu, male, January 27. Nzoro, female, April 8. Faradje,

two males, immature female, May 13. Aba, male, December 20. Garamba, male, June 13; female, June 23.

ADULTS: Iris rather light brown, bill black with underside of mandible bluish gray, feet pinkish buff, claws brownish gray.

DISTRIBUTION OF THE SPECIES: From the Gambia to southern Eritrea, Abyssinia, the vicinity of Mt. Kenya and Kilimanjaro, the highlands of southern Tanganyika Territory, Nyasaland, and the border between Southern Rhodesia and Portuguese East Africa. Absent from the heavy forests of Upper and Lower Guinea and, I believe, from the savannas south of the Gaboon-Congo forest.

Cisticola cantans swanzii (Sharpe) is a small, dark-colored race extending from the Gambia to Nigeria in savannas. *C. c. ada-*

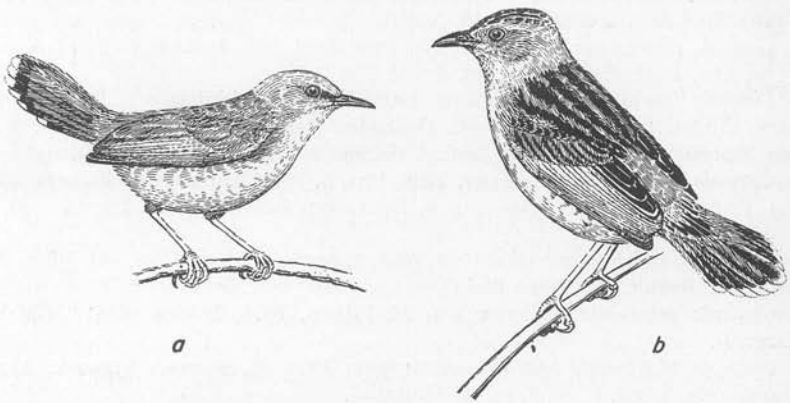

FIG. 16. A. *Cisticola cantans belli*, male. B. *Cisticola robusta nuchalis*, male.

mauae Reichenow of the Cameroon and western Ubangi-Shari is merely an intermediate form between *swanzii* and *C. c. belli*, the latter being a slightly larger and more reddish-crowned race of the northern Congo, Uganda, the Kivu region, and the country west of Lake Victoria.

Cisticola cantans concolor (Heuglin), a paler form, occupies the drier savannas from Nigeria to the White Nile. *C. c. cantans* (Heuglin) is a large race of the Abyssinian highland, in breeding dress colored like *swanzii*, but in the dry season boldly striped on the back with black. *C. c. pictipennis* Madarász of East Africa is similar to *cantans* in breeding dress and does not change with season. *C. c. münzneri* Reichenow, from southern Tangan-

yika Territory to Nyasaland and the Melsetter District, is a small, light-colored race with a distinct plumage change. In the dry season its back is rustier and faintly dappled.

Cisticola cantans belli is a familiar grass warbler in most of the northern and eastern grasslands of the Congo, south to the vicinity of Baraka. It is a lowland bird but goes up on grassy plateaus to about 5500 feet near Luofu and to about the same altitude near the Kivu Volcanoes and on the Lendu Plateau. It may extend into the grasslands a little to the west of Baraka, but it is not known from the Marungu, Katanga, or Kasai districts.

In the Uelle District *belli* is common in the uplands, especially north of the Uelle River, where the country is more open. But I heard it occasionally even as far south as Pawa, close to the forest margin. It perches in bushes more frequently than on grass stalks, often raising its tail like a wren. The loud call of the male is short and nasal or semi-metallic, repeated from time to time from a perch but not in regular series as with some other species of *Cisticola*. I tried to write it as "k-week!," "k-tăn!" or "kick-r!" There is a slight break in it, but hardly two syllables. Despite some variation, it is usually easy to recognize and differs somewhat from the note of *C. c. pictipennis* in East Africa. Lower, shorter alarm notes are of course given as well. The birds are not sociable; pairs are the rule, and the female keeps well out of sight. The young have no yellow wash on the breast. The food is exclusively of insects; occasionally small caterpillars are taken as well as various adult insects.

In the vicinity of Lake Albert and Lake Edward this warbler is seen not on the more open, arid plains but in places where the grass is higher, more mixed with bushes, trees, and even tall bracken. It occurs to the east and south of Ruwenzori but does not ascend to the mountain forest. At Luofu it lived on hillsides, not in swampy places, and near the post of Rutshuru it is common, though scarcely seen above 5000 feet in the Kivu region. Raven obtained a specimen at Nyanza on the northeast shore of Tanganyika, and Grauer collected two at 80 kilometers west of Baraka.

The breeding season in the Uelle, as shown by my dissections, is restricted to the rainy season. Most specimens from April to July, inclusive, had enlarged gonads. In the region near Lake Edward the reproductive period seemed almost over by late March, but there may well be two such periods in the year.

The nest and eggs of the race *belli* are still unknown, but in both West and East Africa the species builds in tailor-bird fashion, sewing its nest with caterpillar silk between two or three broad leaves, from 1 1/2 to 3 feet above the ground. A little dry grass is used for the walls, and the lining is of plant down. Eggs are three or four, white or very pale blue, with freckles or larger spots of reddish brown and secondary grays.

Cisticola cantans adamauae Reichenow

Cisticola adamauae REICHENOW, 1910, Ornith. Monatsber., p. 175 (type locality: Sagdshe, Adamawa, Cameroon).

Cisticola cantans adamauae LYNES, 1930, Ibis, Cisticola Supplement, pp. 19, 357, 358, 615 (upper Kemo R.; "Kabambai"; "Luluabourg"). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 557 ("western Congo basin"). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 182. BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 70 (Bangui).

This race is not easy to distinguish from *belli*, unless perhaps its crown is a little less reddish a: its back grayer. If valid, it may be expected near the great bend of the Ubangi, and it has been reported by Lynes from that district in the Ubangi-Shari. We have one very poor skin of a male, labeled as coming from Karawa in the northern Bangala District. Perhaps it was really secured closer to the Ubangi River.

But the supposed occurrences at Kabambaie and Luluabourg in the Kasai are surely inexact. As long ago as 1923 I examined Schouteden's Kabambaie specimen, a young bird with rectrices not quite fully grown. It was too rufous on head, back, and tail for the young of this species, and even had a faint wash of yellowish about cheeks and chest. I believe it may have been *C. chiniana fortis*. No Luluabourg skin has come to my notice, and when Lynes went to the Kasai he did not find any representative of *Cisticola cantans* there. Nor did he find *C. c. münzneri* anywhere in Northern Rhodesia or the Katanga, although it has been reported from Fort Jameson by Winterbottom and collected at Rungwe in southwest Tanganyika Territory by Boulton.

Cisticola anonyma (Müller)

Drymoeca anonyma J. W. VON MÜLLER, 1855, Jour. Ornith., p. 197 (type locality: Niger River mouth).

Cisticola ruficapilla SHARPE, 1890, *in* Jameson, The story of the rear column, p. 408. SHELLEY, 1890, Ibis, p. 160 (Yambuya). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127.

? *Cisticola ruficapilla* DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Leopoldville; Province Orientale).

Cisticola rufopileata REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 561 (in part. Yambuya; Stanley Falls); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 357 (in part. Avakubi). O.-GRANT, 1908, Ibis, p. 296 (Kasongo–Ponthierville); 1910, Trans. Zool. Soc. London, vol. 19, p. 352 (Mawambi). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 295 (in part. Mawambi; Mawambi–Irumu). SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 198 (in part. Temvo; Makaia Ntete). FRIEDMANN, 1930, The African Republic of Liberia and the Belgian Congo, vol. 2, p. 760 (Yalembe on Congo R.).

Cisticola rufopileata rufopileata SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 337 (in part. Luebo; Basongo); 1924, idem, vol. 12, p. 419 (Eala; Bikoro). BOUET, 1934, Ois. Rev. Française Ornith., new ser., vol. 4, p. 642.

Cisticola anonyma LYNES, 1930, Ibis, Cisticola Supplement, pp. 18, 302, 305, 617, pl. 11, fig. 44 (Leopoldville; Yambuya; La Romée; Ilando; Bumba; Buta; Angu; Bosobangi; Batama; Medje); 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 89 (Port Francqui). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 554. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 122 (Kotili; Buta). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 167.

? *Cisticola anonyma* GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 187 (Luluabourg).

SPECIMENS: Stanleyville, male, October 25. Batama, male, September 15. Avakubi, five males, June 23, October 2, 13, 15, 31. Medje, two males, January 18, September 3.

ADULT MALE: Iris light brown; bill black, slightly grayish below; feet buffy pink, claws dusky.

DISTRIBUTION: From the Niger Delta eastward across southern Cameroon to the forested Ituri, south to the Loango Coast, Belgian Mayombe, northern Kasai, and the Lualaba River near Nyangwe. No other species of *Cisticola* is so characteristic of the lowland forest belt. Any supposed record from beyond its borders is to be viewed with suspicion, and all efforts to attach races to it from other parts of Africa have failed. Records from Leopoldville need confirmation; specimens of *C. chiniana fortis* have too often been labeled "*rufopileata.*" Even at Lukolela, well wooded as it is, I never noticed *C. anonyma,* and I had to go up river to Bolengi before meeting it again. In the eastern Congo, likewise, it does not venture beyond the edge of the solid forest. I have seen it at Fataki, a village between Irumu and Beni, elevation 3400 feet, but did not notice it anywhere in the Semliki Valley.

This is not to suggest that *anonyma* really inhabits the forest. On the contrary, it lives only in clearings in the forest, most of

them man-made, where a certain amount of high grass has sprung up. In such places it is a characteristic bird all across the Congo from the Mayombe and the forested banks of the upper Congo River to the eastern Ituri and probably the forested northern Manyema. Father Wijnants has taken it at Boende near the lower Tshuapa, in the very heart of the Upper Congo forest.

From Stanleyville to Avakubi and Medje we found this grass warbler common. Roaming in pairs or family groups, cocking up its tail, and balancing itself on grass stalks or bushes, it is a familiar sight around the borders of native villages. It attracts attention by its call, a reiterated "ch! ch! ch! . . .," and other loud, hoarse notes which sometimes introduce the true song. This song is a fairly long dry trill, not at all melodious, which I thought comparable with those of *C. galactotes* and *C. emini*. Like all others of its genus, *C. anonyma* is purely insectivorous.

Breeding, as one might expect from the habitat, is carried on throughout the year. On December 20 at Avakubi we found a nest built in some tall grass in a grove of rubber trees (*Funtumia*), at 2 feet above the ground. It was roughly oval, with lateral entrance, and made of dry grass, both blades and flowering tops. The lining was of down from the *Funtumia* seed pods. The two well-grown nestlings were tinged with yellow on the throat feathering but otherwise resembled adults in color. Lynes and Vincent found a brood just out of the nest at Port Francqui on November 6. The eggs are usually two, blue or greenish blue, rather sparsely spotted or blotched with rufous and purplish brown, and with ashy violet shell marks. The dimensions are 15.7–18 by 12–13.2 mm.[1]

Cisticola emini petrophila Alexander

Cisticola petrophila ALEXANDER, 1907, Bull. Brit. Ornith. Club, vol. 19, p. 104 (type locality: Pettii, Northern Nigeria).

Cisticola emini petrophila LYNES, 1930, Ibis, Cisticola Supplement, pp. 18, 308, 311, 655, pl. 11, fig. 45 (Aba). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 555. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 122 (Dramba). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 169, fig. 30.

SPECIMENS: Aba, two males, July 18, December 20; female, December 14, immature male, December 14.

[1] Serle, 1950, Ibis, p. 614.

ADULTS: Iris light brown, maxilla very dark brown, mandible brownish gray, feet pale buff.

DISTRIBUTION OF THE SPECIES: Bare rocky hills from the French Sudan, Sierra Leone, and Northern Nigeria to Darfur and the northeast corner of the Congo, also on the southern shore of Lake Victoria, the Taita Hills in Kenya Colony, adjacent parts of Tanganyika Territory, the Benguella Plateau of Angola, southern Nyasaland, and Mozambique and Quelimane Provinces.

Cisticola emini emini Reichenow is known from only three specimens taken by Emin and by Lynes at Bussisi and Mwanza on the south shore of Lake Victoria. It is a very plain gray and brown bird, with rusty reddish crown and hind neck. *C. e. petrophila* is far better known, ranging from Northern Nigeria and central Darfur to Aba and Nzoro in the northeast Congo. It is somewhat lighter in color than nominate *emini*, with the rufous color less extensive on the hind neck.

Cisticola emini admiralis Bates[1] from the upper Niger and northern Sierra Leone is apparently more richly colored than *petrophila*. *C. e. bailunduensis* Neumann[2] of the Benguella Plateau is more whitish below than *petrophila*, though the face is very rufous. *C. e. teitensis* Van Someren is represented by the type from Sagala in the Taita District of Kenya Colony and three examples from northeastern Tanganyika Territory. It differs from *petrophila* in being more whitish on throat and belly, less rusty about the face. *C. e. lurio* Vincent[3] of southern Nyasaland and adjacent parts of Mozambique is placed provisionally as a race of *emini*, because of its rock-loving propensities. Its back is distinctly mottled, because of dark feather centers; underparts and face very whitish, and sides of throat and cheeks with dusky freckling.

The known range of this rock-loving warbler has been greatly extended in recent years, and it is likely to be found in many new localities when a thorough search is made of hills with bare rock and xerophytic vegetation. But this does not mean that it may be expected in the better-watered regions of the Congo basin.

Within our limits only *C. e. petrophila* is known, and that only in the Upper Uelle District. There we met with it on the higher

[1] 1930, Bull. Brit. Ornith. Club, vol. 51, p. 50 (Kulikoro, French Sudan).

[2] 1931, Jour. Ornith., p. 551 (Chipepe, Angola).

[3] 1933, Bull. Brit. Ornith. Club, vol. 53, p. 173 (Mirrote, Mozambique Province).

rocky hills in the neighborhood of Aba and Nzoro, at about 3600 feet. Near Aba specimens were collected on hills to the northeast and to the southward, close to the village of Ibu. It was also seen on a hill close to Mt. Gaima near Nzoro, but not collected there.

On areas of smooth stone, where grass cannot grow, small accumulations of soil would often support patches of spiky aloes, as well as clumps of a tough, vine-like plant, branching at right angles, with its green stems bare of leaves. This is a *Sarcostemma* (family Asclepiadaceae). There are many other plants peculiar to these spots, all together forming patches of dense, low vegetation which are haunted by these little brown warblers. Occasionally they venture out and go running actively over the rocks, with tails cocked up like those of wrens.

Their song distinguishes them at once from the common *C. cantans* of the lower savannas, for it is a dry trilling effort without any music in it, sometimes like that of the American chipping sparrow but magnified. The breeding season must fall in the rainy months, for only the July bird showed enlargement of the gonads. In two stomachs we noted a grasshopper and other small insects.

In Darfur Lynes noted this rock warbler about Jebel Marra from the base up to 8000 feet, but only where there was plenty of bare rock with a sprinkling of stunted bush growth, low grass, and herbage. Between November and May the birds were not nesting. On the Afu Hills in the Benue Province of Nigeria, Serle[1] obtained a female ready to breed on June 25. The altitude there was only 1000 feet.

Boyd Alexander would seem to have noticed this warbler near the Shari River in French Equatorial Africa, though he obtained no specimens there, and it may well be expected to occur in the southern Bahr-el-Ghazal Province and at other suitable spots along the northern Congo frontier.

The nest and eggs of *petrophila* remain to be discovered. Those of the races *bailunduensis* and *lurio* have been described by Lynes[2] and by Benson.[3] They build a nest of ball shape with side entrance in fairly tall grass, lining it with plant down. The eggs

[1] 1940, Ibis, p. 14.
[2] 1934, Ibis, p. 27.
[3] 1944, Ibis, p. 470.

are three in number, white with markings of reddish brown, or (in the case of *lurio* at least) sometimes pale bluish green with similar marking. Eggs of *lurio* measured 17.5–18.5 mm. by 13.0–13.5.

[*Cisticola emini bailunduensis* Neumann]

Cisticola emini bailunduensis NEUMANN, 1931, Jour. Ornith., p. 551 (type locality: Chipepe, Bailundo, Angola). LYNES AND SCLATER, 1934, Ibis, p. 27 (Namba in Mombolo district, Angola).

The Angola race of the rock warbler has thus far been taken only at Namba and Chipepe in the Bailundo district, at about 5000 feet, and on Mt. Moco, a little farther south, at around 6000 feet. But the species is not always restricted to highlands, and it would not be surprising if it occurred on bare hills in the southeastern Congo.

In like manner, it is not impossible that *C. e. emini* may range into Karagwe or even the eastern margin of Ruanda-Urundi, if there are suitable hills. The statement by Sclater (1930) that it extended to "the northern half of Belgian Congo" was manifestly in error.

Cisticola bulliens Lynes

Cisticola bulliens LYNES, 1930, Ibis, Cisticola Supplement, pp. 18, 315, 321, 622, pl. 11, fig. 46 (type locality: Lobito Bay, Angola; also from Banana; Moanda; Matadi). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 555. LYNES AND SCLATER, 1933, Ibis, pl. 32, photograph 47 (10 miles west of Matadi); 1934, Ibis, p. 28. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 173, fig. 31.

Cisticola rufopileata SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 198 (in part. Banana; Moanda).

DISTRIBUTION: From Mossamedes northward along the coast of Angola to the Congo mouth and Landana, extending inland into the valleys of the Cuanza and other rivers. On the lower Congo it is found at least up to Matadi.

Looking rather like a bleached counterpart of *C. anonyma*, this characteristic species of coastal Angola remained long without a name and was not known from the Congo until Schouteden secured specimens at Banana and Moanda. In 1931 Lynes and Vincent found the species in the vicinity of Matadi.

Near the coast "the bubbler," as Lynes has called this grass warbler, lives in numbers in brackish meadows thickly covered

with coarse grass and dotted with bushes. Farther inland it frequents dry bush country with similar grasses, or even richer "bush" and palm groves. During the breeding the male takes up a singing perch on a bush top at daybreak and is heard more or less throughout the day giving a fairly musical rippling or bubbling strophe, preceded by about three small opening notes. Lynes wrote it "di di di DRRRREEE," and stated that it may vary both in tone and in time. The bill meanwhile is opened wide, showing the black mouth, the tail is spread and flicked, but the wings are not moved. The bubbling part of the song may be given on the wing, but there are no real aerial antics.

The nesting season in the Lower Congo should be at its height from February to April. The nest is of the ball type, 1 to 3 feet above the ground, usually in high grass. The average complement of eggs is three, and sets vary greatly in color, from turquoise blue to very pale greenish blue or even white, always blotched or spotted with claret red, dark purple, or rust-brown. Average dimensions are 16.7 by 12.0 mm.

Cisticola chubbi chubbi Sharpe

Cisticola chubbi SHARPE, 1892, Ibis, p. 157 (type locality: Kimangitchi or Mangiki, Mt. Elgon). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 561 (Songa); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 357 (Kwidjwi I.; Bugoie Forest; west Ruwenzori, 2500 m.; northwest of L. Tanganyika). JACKSON, 1906, Ibis, p. 545 (Ruwenzori). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 351 (Mubuku Valley, 5000–7000 ft.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 296 (Urundi; Usumbura); 1924, idem, vol. 38, p. 80. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 290; 1935, Rev. Zool. Bot. Africaine, vol. 27, p. 402. VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 216 (Kivu). FRIEDMANN, 1930, The African Republic of Liberia and the Belgian Congo, vol. 2, p. 760 (Lulenga). LYNES, 1930, Ibis, Cisticola Supplement, pp. 18, 332, 336, 624, pl. 12, fig. 48 (Lendu; Kalongi and Karangora on Ruwenzori; Mt. Mikeno; Rutshuru; Mfumbiro; Tsisilongo; Mt. Karisimbi). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 556. FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 274. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1104.

Cisticola chubbi chubbi GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 134 (Mt. Muhavura; Mt. Sabinyo, 2700 m.; Kibati; Burunga). CHAPIN, 1932, Amer. Mus. Novitates, no. 570, p. 7. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 311 (Ngoma; Nya-Muzinga); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 101 (Mugunga, 1500 m.; Nzulu; Burunga in Mokoto; Ngesho; Tshumba; Nyarusambo; Tshamugussa; Bitashimwa; Kibumba; Kanyabayongo; Kibga, 2400 m.; Nyabirehe, 2400 m.; L. Ngando, 2400 m.); 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 285 (Mt. Wago); 1942, idem, vol. 36, p. 337 (Astrida).

DISTRIBUTION OF THE SPECIES: Wooded highlands from Mt. Elgon and Kavirondo to the Lendu Plateau, Ruwenzori, Kivu-Ruanda highlands, and the ridges west of the Albertine Rift, south to Marungu. The nominate form is regarded as occupying the greater part of this area, south to the Rugege Forest and the region of Baraka, while *C. c. marungensis* is restricted to Marungu. The latter is somewhat lighter-colored on the upperparts, and its tail is longer.

Cisticola chubbi chubbi is a common and characteristic bird on mountains, especially between 5000 and 8000 feet, but specimens have been collected by Grauer near Bukoba on Lake Victoria and supposedly in the Rutshuru Plain and at Usumbura. Some of these I have seen, and there can be no doubt as to the identity of the Bukoba specimens. In the Rutshuru Plain I never noticed the species, but I did find it on the wooded hills just to the east of the plain at 5100 feet. On one occasion, too, near the village of Nganzi at the west base of Ruwenzori, where the altitude was only 3700 feet, I watched a pair of *C. chubbi* giving their regular "duet" song performance.

The preferred haunts are in bushes and bracken, usually with some grasses, above 5500 or 6000 feet on the west slope of Ruwenzori, and up to a point where the mountain forests or bamboos close in solidly. I have heard it also near Djugu, west of Lake Albert. This warbler is not seen on the cold alpine moors of Ruwenzori or the Kivu Volcanoes. Yet I heard it at Kabara, 11,000 feet, in the saddle between Mikeno and Karisimbi, where there is a clearing in the *Hagenia* woods. Near Lubero I took a specimen at 6500 feet, and it is common on all the high ridges west of Lake Edward, wherever there are scrub and bracken. *C. erythrops* is seen there, too, as on west Ruwenzori, but that species prefers elephant grass and scarcely ascends above 6900 feet. On the mountains northwest of Lake Tanganyika *chubbi* has been found from 6200 feet up to 7650 feet, and specimens from that area show no approach to *marungensis*.

Family groups are even commoner than pairs, slipping about in thick cover so that they are often difficult to see. When they feel the impulse to sing, however, they cannot be overlooked. One bird makes most of the noise, the other bird or birds chiming in with shorter notes. The "leader," no doubt an adult male, may repeat his single phrase 10 to 20 times or more. It is com-

posed of three or of four syllables and varies considerably with different individuals. One will sing "which-cherry," another "see-which-cherry," or a third "y' must-believe-us." When visible, the birds are bobbing excitedly up and down, with tails spread, bowing to each other. For these reasons Woosnam called the species the "duet grass-warbler." In all these points of voice and behavior *C. chubbi* is rather like *C. hunteri* of the East African mountains. While the male of *hunteri* calls "sweet-beer," another bird at the same time utters a more prolonged dry trill.

The truth is that *C. hunteri*, *C. chubbi*, *C. nigriloris*, and *C. discolor* are all so closely allied that they might perhaps be regarded as races of a single montane species, scattered all the way from the Cameroon mountains to those of Nyasaland and southern Tanganyika Territory. But on Elgon the plain-backed *chubbi* occupies the montane slopes from 6000 to 9000 feet, while *C. hunteri masaba*, a much darker bird, is found from 9000 or 10,000 feet to the summit. On both Kenya and Kilimanjaro, specimens of *hunteri* from the alpine meadows above 10,000 feet are apt to be of duskier coloration throughout than those taken lower down.[1]

It is doubtful if any special breeding season is observed by *C. c. chubbi*, living only in the moist equatorial belt. A nest was found by Woosnam on east Ruwenzori in January, placed in a bunch of dead grass about 5 feet from the ground. It was domed and composed of dry blades of grass and roots, lined with finer grass and roots. The eggs were two, pale blue, very finely marked all over with light red, more thickly around the larger end. Measurements were about 18.9 by 13.5 mm. Granvik[2] found nests on Elgon on April 29 and May 2. One at least was 2 meters up in a low tree and was lined with feathers. His two sets were of three eggs each, pale bluish green with reddish brown spotting, and they measured 18–19 mm. by 12–14 mm.

Cisticola chubbi marungensis Chapin

Cisticola chubbi marungensis CHAPIN, 1932, Amer. Mus. Novitates, no. 570, p. 6 (type locality: Ketendwe, 6050 ft., Marungu highland, Belgian Congo).

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[1] See especially Moreau and Lynes, 1939, Rev. Zool. Bot. Africaines, vol. 33, pp. 9. 10; Rand, 1949, Nat. Hist. Misc., Chicago, no. 43, pp. 1–8.

[2] 1934, Rev. Zool. Bot. Africaines, vol. 25, p. 105.

DISTRIBUTION: Known only from Ketendwe, but doubtless occupying other spots of similar elevation in Marungu. The four adults were taken by Rockefeller and Murphy in late February and must therefore be in breeding plumage, although dissection showed none actually breeding at the time. They noted only that it was a bird of high grass, but there is every reason to suppose that in voice and behavior it resembles *C. c. chubbi*. Despite the proximity of Marungu to Ufipa and the highlands north of Lake Nyasa, there is no tendency in *marungensis* to approach the brighter coloration of *C. nigriloris*.

Cisticola woosnami woosnami Ogilvie-Grant

Cisticola woosnami OGILVIE-GRANT, 1908, Bull. Brit. Ornith. Club, vol. 21, p. 72 (type locality: Mokia, southeast base of Ruwenzori, Uganda). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 135 (Makora; Masidongo).

Cisticola cinerascens HARTERT, 1900, Novitates Zool., vol. 7, p. 48 (Karimia).

Cisticola rufopileata REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 561 (in part. Ukondju); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 357 (in part. Beni).

Cisticola semitorques REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 563 (in part. Karimia).

Cisticola emini O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 349.

? *Cisticola sylvia* SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 295 (Kasindi–Beni).

Cisticola rufopileata emini SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 290.

Cisticola lateralis SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 290 (in part. Old Mission St. Gustave).

Cisticola woosnami woosnami LYNES, 1930, Ibis, Cisticola Supplement, pp. 18, 296, 298, 672, pl. 11, fig. 43 (Katwe; Kigezi; Molekera; Kasindi; west side of L. Edward; Kitenguru; Kisaka; Marienseen; Niakamaga). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 554. JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 1103. SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 100 (Molindi R., 1000 m.).

DISTRIBUTION OF THE SPECIES: From the Buganda Province to the upper Semliki Valley, south to the base of Kilimanjaro, Uluguru, Iringa, northeastern Rhodesia, and northern Nyasaland. Three races were distinguished by Lynes, but admittedly they are much alike in breeding plumage. *C. w. woosnami* of Uganda, the eastern Congo south to the Kivu District, Urundi, and Iringa, has no distinct dry-season dress. *C. w. lufira*, from the Manyema and Marungu to the Katanga and Northern

Rhodesia, is not quite so dark above in breeding plumage, more washed with rufous in off season. *C. w. schusteri* Reichenow, of Tanganyika Territory from Mwanza and Moshi to Uluguru, is just a few millimeters smaller than *woosnami*, and is not known to have a dry-season dress.

Although the ranges of *C. w. woosnami* and *C. lateralis antinorii* overlap somewhat in central Uganda, they scarcely meet in the eastern Congo. I do not know of any occurrence of *woosnami* in the Congo north of the Semliki Forest. From the plain of the upper Semliki River and the south end of Ruwenzori it is found frequently in the lowlands south to the vicinity of Rutshuru, also in the Kagera Valley, but not in the highlands of the Kivu.

As dried skins, *woosnami* and *antinorii* have often been confused, but in life their voices make them easily distinguishable. *C. w. woosnami* is usually met with in parties of four or five in and near open groves of trees, acacias or others, with grass growing beneath them. I have seen them in the Lubilia Valley, in the Semliki Valley just west of Kasindi, at Lower Kabasha on the western edge of the Ruindi Plain, and near Mai-na-Ivi in the eastern Rutshuru Plain. The birds would get up from the grass or low bushes, uttering a scolding "cha-cha-cha. . . ," and take to the lower boughs of the trees. One male even sat on a bough and called "chwet, chwet, chwet. . ," but that is not its most characteristic song. In these same places one will also hear a faint but persistent repetition of a high, insect-like note, which to my ears is most difficult to locate. One might doubt it was made by a bird, and give the credit to a cicada. But as Woosnam first pointed out, this is the true song of the male, a long-drawn trilling sound continuous for three to five seconds or more, given as the bird sits with upraised beak on some dead upper bough of a tree. It may be repeated again and again. Surely it has none of the volume or the musical quality of that of *C. lateralis*.

The principal breeding season in the eastern Congo is probably from March to May or June, with perhaps another one toward September-October. January, at any rate, seemed an off season near Lake Edward, yet the birds wore no special plumage. The nest is globular, like that of *C. lateralis*, and placed low down in grass ingrown with a shrub or two. The eggs are two in a set, turquoise blue, finely marked with dull Indian red or purple.

Cisticola woosnami lufira Lynes

Cisticola woosnami lufira LYNES, 1930, Ibis, Cisticola Supplement, pp. 18, 300, 643 (type locality: upper Lufira R., Belgian Congo; also from Luapula R.; Dikulwe valley; Fungurume; Elisabethville; Kapiri; Tembwe; Dogodo; Kalungwisi Valley); 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 88. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 554. LYNES AND SCLATER, 1934, Ibis, p. 26 (Tenki). A. W. VINCENT, 1948, Ibis, p. 301.

Cisticola rufo-pileata NEAVE, 1910, Ibis, p. 144 (in part. Upper Lufira R.; valley of Luapula R.).

Cisticola sylvia NEAVE, 1910, Ibis, p. 145 (in part. ?Upper Lufira R.; ?Bunkeya R.; Kalungwisi Valley).

Cisticola woosnami SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 285. LYNES AND SCLATER, 1933, Ibis, p. 724, pl. 24.

DISTRIBUTION: From the grasslands of the Manyema and Tembwe on the west shore of Lake Tanganyika south through the Katanga, northeastern Rhodesia, and Ufipa, perhaps to northern Nyasaland, though Benson[1] considered Nyasaland birds to be *C. w. woosnami.*

In the Upper Katanga Lynes found it living in savanna woods, behaving like the nominate race, and trilling from December on. It molts from off-season dress to breeding plumage in mid-November. In northern Nyasaland Benson heard its trilling only from November to mid-March. There it inhabits *Brachystegia* woodland above 5000 feet. Eggs found by Lynes at Tenke in December were pale blue, with scattered markings of light reddish and secondary grays; average dimensions 17.5 by 13.0 mm.[2]

Cisticola lateralis lateralis (Fraser)

Drymoica lateralis FRASER, 1843, Proc. Zool. Soc. London, p. 16 (type locality: Cape Palmas, Liberia).

Cisticola lateralis lateralis LYNES, 1930, Ibis, Cisticola Supplement, pp. 17, 283, 287, 642, pl. 11, fig. 41 (Gribingui R.; Yakota near Krebedje; Nola to Mbaiki).

DISTRIBUTION OF THE SPECIES: From the Gambia eastward to the Bahr-el-Ghazal, Uganda, and the base of Elgon; absent from the Congo forest, but south of it from the Loango Coast and northern Angola east to the Manyema and Katanga.

Cisticola lateralis lateralis is the Upper Guinea form, and supposedly it extends to the Cameroon and even the Ubangi River. *C. l. antinorii* of the region between the Bahr-el-Ghazal

[1] 1937, Ibis, p. 572; 1941, idem, p. 3.

[2] See also A. W. Vincent, 1948, Ibis, p. 301.

and Uganda is a browner race, with males never quite so blackish above as are many examples of *lateralis*. *C. l. modesta* of the savannas of the Lower and Middle Congo is similar to *antinorii*, but usually more grayish on the crown. The character ascribed by Lynes to *modesta*, more rufous coloration on flanks, legs, and under tail-coverts, is not noticeable in specimens from Stanley Pool, Kwamouth, and Lukolela. It is well shown by those from northern Angola and the Kasai, so the latter birds may be in need of another subspecific name.

In the whole species *lateralis* the females are strikingly smaller than males, about 20 per cent less in linear measurements, and immature birds are often bright reddish brown above. In Angola the adults have a distinct dry-season plumage that is rufous brown on the back.

Cisticola lateralis lateralis has been reported from between Nola and Mbaiki in the French Congo and from Yakota north of the Ubangi River. It should therefore occur in the Belgian Ubangi District. But the transition between this nominate race and *antinorii* is believed to be very gradual, and it remains to be seen whether or not those identifications are justified. The voice and behavior of the species are discussed under *antinorii*.

Cisticola lateralis antinorii (Heuglin)

Drymoeca antinorii HEUGLIN, 1869, Ibis, p. 102 (type locality: Djur, Bahr-el-Ghazal Province).

Cisticola lateralis SHELLEY, 1888, Proc. Zool. Soc. London, p. 23 (Abiambana near Tingasi). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 562 (in part. Abiambana); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 357. O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 348 (lower Semliki Valley). BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 365; 1923, Ibis, p. 699.

Cisticola wellsi O.-GRANT, 1907, Bull. Brit. Ornith. Club, vol. 21, p. 17 (type locality: Pongo R., Bahr-el-Ghazal Province). SCLATER AND M.-PRAED, 1918, Ibis, p. 654 (Kajo-Kaji).

Cisticola sp. SCLATER AND M.-PRAED, 1918, Ibis, p. 654 (Yambio; Mt. Baginzi; Uelle R.).

Cisticola lateralis antinorii LYNES, 1930, Ibis, Cisticola Supplement, pp. 17, 287, 290, 618, pl. 11, fig. 42 (L. George; Dramba; Mahagi; Mahagi Port; Mauda near Doruma; Arua; Faradje; Poko; Rungu; Niangara; Garamba; Tingasi; Gwangi; Angba; Angu). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 554. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 122 (Niarembe). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 567 (Ekibondo). JACKSON, 1938, Th. birds of Kenya Colony and... Uganda, vol. 2, p. 1102.

SPECIMENS: Rungu, male, October 28; female, July 2; immature female, July 2. Niangara, five males, March 16, April 25, May 9, 10, June 19; immature male, January 18. Dungu, immature female, February 23. Faradje, immature male, April 27. Garamba, male, June 16.

ADULT MALE: Iris light brown, bill blackish with base of mandible light gray, feet pinkish buff.

IMMATURE MALE: Iris light brown, maxilla dusky brownish, mandible yellowish buff, feet pinkish buff.

DISTRIBUTION: From near the upper Ubangi River eastward to the Bahr-el-Ghazal Province, the Upper Uelle District, shores of Lake Albert, and lower Semliki Valley, Uganda, the base of Elgon, and the vicinity of Kakamega. In the Upper Uelle we met with it commonly from Rungu on the Bomokandi River to Aba and Garamba, and heard its pleasant calls at Kasenyi on Lake Albert. But it is not known from the upper Semliki or the Rutshuru Valley.

While it seems never to invade clearings in the northern edge of the forest belt, it is fond of high-grass savannas with many bushes and trees, and goes usually in small parties of four or five—a pair of adults with two or three young. From the top of a bush or even well up in a tree the male gives his spirited song, a rapid outpouring of loud musical notes, with little change of pitch. The rest of his family remains hidden meanwhile lower down amid the bushes, often uttering short plaintive call notes. The song seems not to be given during the dry season but is so pleasant and so frequent at other times that one cannot possibly overlook it.

The breeding season in the Uelle is rather long, lasting throughout the greater part of the rains, or from May until November, as evidenced by our dissections. Insects are about the only food. In five stomachs I found many pieces of beetles, large winged termites in two cases, and other insects.

Nests of this species are known to be of oval form, with lateral entrance, placed in low bushes amid grass. They are built of dry grasses, strengthened with cobwebs, and lined with plant down. Lynes and Osmaston found one near Arua on June 20 with two eggs, plain pale turquoise blue, average size 15.5 by 12.9 mm. In West Africa the eggs of *C. l. lateralis* are sometimes more greenish, three in a set, and speckled with brown.

Cisticola lateralis modesta (Bocage)

Drymoica (Cisticola) modesta BOCAGE, 1880, Jor. Sci. Nat. Lisboa, vol. 8, no. 29, p. 57 (type locality: Cayo, Loeme R., French Congo).

Cisticola lateralis SHARPE, 1883, Catalogue of the birds in the British Museum, vol. 7, p. 251 (Condé). REICHENOW, 1887, Jour. Ornith., pp. 301, 306 (Manyanga; Leopoldville); 1905, Die Vögel Afrikas, vol. 3, p. 562 (in part. Condé; Manyanga; Leopoldville). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32. LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 18. SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, pp. 336, 397 (Macaco; Kamaiembi; Makumbi; Tshikapa; Tshisika; Kwamouth); 1924, idem, vol. 12, p. 270 (Kisantu); 1925, idem, vol. 13, p. 15 (region of Bolobo); 1926, idem, vol. 13, p. 198 (Lukula; Makaia Ntete). CHAPIN, 1931, Nat. Hist., vol. 31, p. 600 (Lukolela). LYNES AND SCLATER, 1933, Ibis, p. 724, pl. 24, map (from Kayoyo to Dilolo).

Cisticola rufo-pileata NEAVE, 1910, Ibis, p. 144 (in part. Dikulwe R.; Lufupa R.).

Cisticola lateralis modesta LYNES, 1930, Ibis, Cisticola Supplement, pp. 17, 290, 292, 648 (Luluabourg; Lusambo; west of Baraka; Kinda); 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 88 (Kamina; Kabambaie; Luebo). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 554. LYNES AND SCLATER, 1934, Ibis, p. 26. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 166. GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 187.

SPECIMEN: Kwamouth, male, December 19.

DISTRIBUTION: From the Loango Coast to the Middle Congo, up the river at least to Lukolela. Specimens from this area have very little buff on flanks and under tail-coverts, and the name *modesta* should evidently be applied to them. Farther south and east, from northern Angola to the Kasai, and presumably to the Katanga, the back and rump are much more rufous brown, and flanks and under tail-coverts heavily washed with cinnamon buff. This form appears to be in need of a new subspecific name.

From Lukolela and Bolobo down to Stanley Pool and Boma *C. l. modesta* is a common bird in savannas with fairly high grass and many bushes and small trees. At Lukolela, in a small grassy plain well back from the river, it sang even in late July, during the dry season, and kept on lustily till late February at least. Sometimes the rapid phrase of liquid whistled notes sounded like "fee-fee-three-three-fee-too," but the exact accents varied. Five or six syllables were the rule; sometimes there was a short hesitation after the first, and the abrupt ending was characteristic. Nesting must take place there from September on through the rains, yet specimens taken in October showed only slight enlargement of the gonads.

Birds from Luluabourg in the Kasai and two which Rudolf Grauer collected 150 kilometers west of Baraka are much more rufous about the flanks and under tail-coverts. Lynes found in the Kasai that the breeding season was from October to May, and there seemed to be no special off-season plumage. In the Katanga nesting began a month later, and the mode of dress was seasonal, as in Angola.

A nest of the Angola form was found by R. H. Braun near Malanje in December, and another by Lynes at Missão de Luz in February. They were said to be like those of *lateralis* and *antinorii*, and Lynes's nest held two eggs, white, strongly marked with spots and small blotches of reds and secondary grays, 17.5 by 11.8 mm. The ground color of Braun's eggs was described as bluish gray, and there were dark markings.

[*Cisticola ruficeps mongalla* Lynes]

Cisticola ruficeps mongalla LYNES, 1930, Ibis, Cisticola Supplement, pp. 23, 541, 648, pl. 18, fig. 79 (type locality: Malek, Mongalla Province, Anglo-Egyptian Sudan; also from 15 miles west of Redjaf).

Cisticola ruficeps scotoptera SCLATER AND M.-PRAED, 1918, Ibis, p. 650, pl. 10, figs. 8–11 (in part. Chak-Chak; Moyen; Mongalla).

The species occupies the whole Sudanese belt from the Gambia to northern Abyssinia and Eritrea. Lynes distinguished four races: *guinea*, from the western limits to the western edge of the Ubangi-Shari; *ruficeps*, from Lake Chad to Kordofan; *scotoptera* in the valleys of the White and Blue Niles and to Eritrea; *mongalla*, from the Bahr-el-Zeraf to the Bahr-el-Ghazal Province and the Northern Province of Uganda.

The last-named is a dark-colored form of the species, with rich dark red-brown head top, the back very faintly dappled with dark smoke gray in the rainy season but heavily streaked with blackish during the drought. This very pronounced change of dress makes the birds look like two distinct species, as was well explained by Sclater and Mackworth-Praed in 1918.

The savannas of the northern Congo are just a little too bushy and too closely packed with grass to suit the taste of this *Cisticola*, though it is one of the common birds of the Lado area and the northern Bahr-el-Ghazal. Since it has been taken at Yei, only about 30 miles beyond our northeastern border, it must be mentioned as a possibility in the region near Aba.

Cisticola tinniens perpulla Hartert

Cisticola tinniens perpulla HARTERT, 1920, Novitates Zool., vol. 27, p. 466 (type locality: Bailundo, Angola).

Cisticola tinniens LYNES AND SCLATER, 1933, Ibis, pl. 24, map (Kayoyo).

Cisticola tinniens tinniens ≷ *perpulla* LYNES AND SCLATER, 1934, Ibis, p. 35 (Kayoyo).

Cisticola tinniens nr. *perpulla* LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 94.

DISTRIBUTION OF THE SPECIES: From Cape Province and Natal north to Southern Rhodesia, also on the Benguella Plateau of Angola, the Upper Katanga, Lake Young in Northern Rhodesia, mountains west of the Ruzizi Valley, and at high levels in Kenya Colony. *C. t. tinniens* (Lichtenstein), of South Africa including Southern Rhodesia, is moderately well pigmented, with rusty reddish crown and back heavily mottled with black. *C. t. perpulla* of Angola, Northern Rhodesia, and the southeastern Congo is very heavily pigmented, darker on the crown, blacker on the back. *C. t. oreophila* Van Someren of Kenya Colony is again more like nominate *tinniens*, with a little more rufous, and lacking a distinct off-season dress.

North of the Zambesi this species is restricted to highlands and thus has a very discontinuous range. In Kenya Colony *oreophila* is found above 6000 feet, and the darker *perpulla* is scarcely found below 3500 feet. In northeastern Rhodesia Lynes (1934) collected several at Shiwa Ngandu on Lake Young, at 5000 feet, and he met with it again at Kayoyo, 3500 feet, in the southeastern Lulua District of the Congo.

The only other known occurrences within our limits are on the summits of Mt. Kandashomwa, west of the Ruzizi Valley at 9000 feet, and Mt. Muhi near 11,300 feet. On Kandashomwa Rockefeller and Murphy obtained two males and a female in July, 1929. The birds were found in open grassy spaces along the ridge, which we have called Kandashomwa, amid the bamboo growth that covers much of the upper level. *Cisticola brunnescens* lives there in the same places. A pair of *perpulla* was collected on Mt. Muhi, only a little farther north, by Fred Hendrickx in July, 1948.

It seemed to me that the Kandashomwa specimens were a little more grayish on throat and chest than those of Angola, but Lynes concluded that like his Kayoyo birds they were best kept as *perpulla*. His Lake Young specimens showed only a faint depar-

ture toward nominate *tinniens*. They have been named *C. t. shiwae* by White.[1]

As a rule *C. tinniens* dwells on sedgy gound near the edges of marshes, and should breed in the southeastern Congo from November to March. The season on Kandashomwa cannot differ greatly, for there the July birds had small gonads and very long tails. The nest is globular, placed low down in fairly high grass. Grasses are used in its building, with a little cobweb binding and a lining of plant down. The outside is apt to be covered with fine rootlets. Sets are of three eggs, those of *C. t. perpulla* being greenish white with rust-red freckling almost all over, or with spotting of reddish, brown-madder, and gray; otherwise the ground color may be either white or turquoise blue, with blotches of reddish brown. Average dimensions are 15.9 by 11.9 mm.

Cisticola galactotes amphilecta Reichenow

Cisticola amphilecta REICHENOW, 1875, Jour. Ornith., p. 44 (type locality: Accra, Gold Coast).

Cisticola lugubris SHARPE, 1883, Catalogue of the birds in the British Museum, vol. 7, p. 280 (Landana). SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 336 (Basongo); 1925, idem, vol. 13, p. 15 (Kunungu); 1926, idem, vol. 13, p. 198 (Banc d'Anvers near Boma).

? *Cisticola subrufícapilla* DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (Kisantu).

Cisticola lugubris amphilecta NEUMANN, 1906, Jour. Ornith., pp. 272, 273. FRIEDMANN, 1930, The African Republic of Liberia and the Belgian Congo, vol. 2, p. 759 (Bumba).

Cisticola lugubris compilector SCHOUTEDEN, 1924, Rev. Zool. Africaine, vol. 12, p. 418 (Eala; Basongo).

Cisticola galactotes amphilecta ≷ *nyansae* LYNES, 1930, Ibis, Cisticola Supplement, pp. 392, 394 (Boma; Leopoldville; Basongo: Coquilhatville; Eala).

Cisticola galactotes amphilecta SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 558. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 186.

Cisticola galactotes nyansae LYNES, 1930, Ibis, Cisticola Supplement, p. 396 (in part. Stanleyville).

SPECIMENS: Coquilhatville, male, December 15. Stanleyville, two males, August 5, November 27; immature male, November 8; two females, August 5, November 14.

ADULTS OF BOTH SEXES: Iris light brown; bill dark brown along culmen, shading to light gray beneath; feet pinkish buff.

[1] 1947, Ostrich, vol. 18, p. 174.

IMMATURE MALE: Iris light grayish brown; bill dark brown above, changing gradually to buffy yellow beneath; feet pale pinkish brown.

DISTRIBUTION OF THE SPECIES: Senegal to Lake Chad and Abyssinia, south to the southern Congo, the Okavango River, and Natal. Within the forest belt it is limited to open grassy spots near rivers, and it often avoids highlands where vegetation is unsuitable, although it ascends to over 8000 feet in Abyssinia.

In the rainy equatorial belt there may be no perceptible change of plumage with the seasons. Elsewhere the dry-season dress is markedly different, much more rufous, and much more boldly striped with black above. Lynes in 1930 recognized eight races, and in 1933 added one more. *C. g. amphilecta* of Upper Guinea and the western Congo basin has only a little rufous on the fore crown at most, during its breeding season, while *C. g. nyansae* of Kenya Colony, Uganda, and part of the eastern Congo has a much more rufous head top. The fusion of these two forms is so gradual that it is not easy to decide which name to use for specimens from the central Congo Basin and even the Uelle District.

The birds of the Kasai seem to me closer to *nyansae* than to *amphilecta* because of their rather ruddy crowns. Those of Stanleyville, on the other hand, I shall refer to *amphilecta*. Birds from the Uelle are called *nyansae*, but it must be admitted that they do not conform so well as those of the region around Lake Edward.

Cisticola galactotes suahelica is another race, grayish in its breeding plumage, which ranges from the interior of Tanganyika Territory to the Lualaba River near Kabalo. *C. g. luapula* of the region around lakes Bangweolo and Moero is similar to *C. g. galactotes* (Temminck) of southeastern Africa, but has the head top more reddish in the breeding dress, the back pattern more varied with buff. The remaining races, none of which reaches the Congo, are *C. g. zalingei* Lynes of east central Sudan, *C. g. marginata* (Heuglin) of the White Nile region, *C. g. lugubris* (Rüppell) of Abyssinia, and *C. g. haematocephala* Cabanis of the East African coastlands.

The race *amphilecta* extends from well-watered regions of West Africa into the forested areas of the Cameroon, Gaboon, and western Congo wherever there are suitable grassy clearings, more

or less wet during part of the year, generally along the banks of the larger rivers. It ascends the Congo at least to Stanley Falls, and probably occurs along many other rivers and in the grasslands of the Loango Coast and Lower Congo. But it always retains a fondness for grassy marshes or the proximity of water and is not to be expected elsewhere.

We found this warbler rather common in the high grass and bushes near the marshy banks of the river at Stanleyville, and it seemed to stray out into high grass on drier ground. The same was true at Coquilhatville, and at Lukolela some were seen in a grassy marsh. At Leopoldville and Boma there is much more room for them. Along smaller forest rivers such as the Ituri they were not to be seen, but as larger clearings are made they may be expected to appear. No adult dry-season plumage was observed at Stanleyville. A breeding female was taken there in August, and a young bird perhaps two months old in November. The voice was like that of *C. g. nyansae*, to be described below.

The nest, as described by Serle[1] from Nigeria, is domed, with large lateral entrance, built of dry grass blades and lined with vegetable down. It was placed amid coarse grasses close to a flooded rice field, about 2 feet up, and contained three eggs. Ansorge collected a set of four in the Gaboon. Ground color pinkish white or salmon pink, thickly spotted all over with reddish brown and sometimes orange-brown, and with gray shell markings. Dimensions are 16.5–18.3 by 12.4–12.9 mm. Reddish color is characteristic of the eggs of this species, and of those of *C. pipiens* and *C. carruthersi* as well.

Cisticola galactotes nyansae Neumann

Cisticola lugubris nyansae NEUMANN, 1905, Ornith. Monatsber., p. 78 (type locality: Sesse Islands, Lake Victoria). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 132 (Angi).

Cisticola naevia HARTLAUB, 1882, Abhandl. Naturwiss. Ver. Bremen, vol. 8, p. 189 (Wandi; Langomeri).

Cisticola lugubris REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 552; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 356 (west shore of L. Edward). O.-GRANT, 1908, Ibis, p. 298 (north end of L. Edward); 1910, Trans. Zool. Soc. London, vol. 19, p. 352 (Mokia; Beni).

Cisticola erythrogenis djamdjamensis REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 356 (L. Mohasi; Kasindi).

[1] 1943, Ibis, p. 423.

Cisticola galactotes nyansae LYNES, 1930, Ibis, Cisticola Supplement, pp. 20, 394, 396, 652, pl. 14, fig. 57 (west of Baraka; Usumbura; Rutshuru Plain; Djalasinda; Hululu R.; Semliki Valley; Katwe; Niangara; Faradje). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 559. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 122; 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 102 (Rutshuru; Kibati). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 203. JACKSON, 1938, The birds of Keyna Colony and . . . Uganda, vol. 2, p. 1110.

Cisticola galactotes amphilecta ≷ *nyansae* LYNES, 1930, Ibis, Cisticola Supplement, p. 394 (in part. Luluabourg); 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 91 (Lutshatsha R.; Tshikapa; Kilembe; Loange R.; Luebo; Port Francqui).

Cisticola galactotes nyanzae SCHOUTEDEN, 1941, Rev. Zool. Bot. Africaines, vol. 34, p. 266 (Kasenyi).

Cisticola galactotes amphilecta GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 187 (Luluabourg).

SPECIMENS: Nala, male, October 25. Niangara, male, May 6. Faradje, three males, March 9, August 11, 13; female, November 22. Garamba, female, July 12.

ADULTS: Iris rather light brown; maxilla blackish, mandible light gray with dusky tip; feet pinkish buff, claws gray.

DISTRIBUTION: From Kitui and Makindu near the edge of the Kenya highlands westward to Uganda, the grasslands of the Upper Uelle, eastern Ituri, Kivu, Manyema, and Kasai districts. Over this great area there is of course considerable variation in color, but it seems better not to admit any more races at present.

Specimens in breeding plumage from the Kasai and Uelle are not so rufous over the whole crown as those from just west of Baraka, from Usumbura, or the Kivu District. A dry-season dress is certainly assumed in the Uelle, and it is rather deep in color.

In the Uelle grasslands this warbler is seen only about rather open swamps, feeding amid the grass in pairs or small parties. The song is a dry, monotonous attempt at a trill, recalling that of *C. emini petrophila*, but occasionally it changes to a more pleasant, ringing "chwee chwee chwee chwee. . ." Little is seen or heard of the birds during the dry season, when they are apt to hide in tall grass. Nesting is carried on during the rains, in the Uelle from June to November, inclusive. Only two stomachs were examined in detail. They contained insects, including in each case a small green grasshopper.

The birds we saw on the shores of Lake Albert, at Butiaba and Kasenyi, appear to be *nyansae* and not *marginata* of the White

Nile. In the upper Semliki Valley, at the southwest base of Ruwenzori, I was surprised to find these warblers living in the large areas of elephant grass, and their notes sounded louder and more excited than those I had heard in the Uelle. One male was collected as he sat on a tall stalk of the cane-like grass, giving a series of six or seven loud chirps: "chwep, chwep, chwep. . ." At the Mission near the old post of Beni the birds called loudly and came to the hedges close to the mission buildings. But at Kabare on Lake Edward they were close to the marshy shores, just as might be expected. *Cisticola carruthersi* was there in addition, and seemed to live farther out in the fringing reeds, where the water was deeper. In British Ruanda *nyansae* has been reported from Lake Mutanda, near 6000 feet, but it is rare at such elevations in the Kivu. The lower Ruzizi Valley offers more congenial surroundings; Grauer collected it at Usumbura and 80 kilometers west of Baraka. In the Kasai, birds that show considerable resemblance to *nyansae* are well known, as the result of collecting by Callewaert and by Lynes. There breeding commences toward September.

Eggs of *nyansae* from eastern Africa are three or four to the set, varying from medium brick-red or terra cotta to pinkish white, nearly plain, or somewhat clouded, or spotted or blotched with dark brownish or purplish reds and secondary grays. Average dimensions are around 16.5 by 12.4 mm. Nests are of the ball type, placed 2 to 4 feet up in coarse grassess, in or near swamps.

Cisticola galactotes suahelica Neumann

Cisticola lugubris suahelica NEUMANN, 1905, Ornith. Monatsber., p. 78 (type locality: Begu, northern Useguha, Tanganyika Territory).

Cisticola hartlaubi DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, no. 3, p. 148 (L. Tanganyika).

? *Cisticola haematocephala* DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, p. 148.

Cisticola galactotes suahelica $\gtrless$ *galactotes* LYNES, 1930, Ibis, Cisticola Supplement, pp. 20, 399, 401 (in part. Kabalo; Katobwe).

Cisticola galactotes suahelica FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 275.

DISTRIBUTION: From the lowlands near Kilimanjaro westward across Unyamwezi to the Lualaba River near Kabalo, to Lake Rukwa, and to Iringa. In breeding plumage the crown is much grayer than that of *nyansae*, and the dimensions are slightly smaller.

Lynes listed specimens from three localities on the Lualaba. A male bird which I collected at Kabalo in August agrees well with specimens from Tabora, so I am convinced that this region is occupied by *suahelica*. But a male bird which I took at Kiabo a few days later, though listed by Lynes under this same race, has a much more rufous crown, not streaked as one might expect at that season; I believed it to represent *C. pipiens congo*, which Lynes had not yet described when he examined my bird.

At Kabalo the birds lived along the marshy river bank, and their behavior did not differ from that of the other races. Nests were found by Lynes at Iringa in Tanganyika Territory during February and March, and at Tabora in April. They were of ball type, built amid rank grass, herbaceous plants, and bushes. Some cobweb was used as binding, and there was a soft lining. Sets were of three or four eggs, pale salmon pink thickly marked with dark red-brown or liver color and a few grays. Average dimensions are 16.6 by 12.5 mm.

Cisticola galactotes luapula Lynes

Cisticola galactotes luapula LYNES, 1933, Bull. Brit. Ornith. Club, vol. 53, p. 169 (type locality: north shore of L. Bangweolo, Northern Rhodesia); 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 129. LYNES AND SCLATER, 1934, Ibis, p. 29. WHITE, 1944, Ibis, p. 149 (Luapula R.).

Cisticola lugubris NEAVE, 1910, Ibis, p. 147 (Bunkeya R., 3000 ft.).

Cisticola galactotes galactotes LYNES, 1930, Ibis, Cisticola Supplement, pp. 20, 401, 403, 634 (L. Bangweolo).

Cisticola galactotes LYNES AND SCLATER, 1933, Ibis, pp. 719, 724, pl. 24, map; pl. 26, photograph 7; pl. 27, photographs 13, 14, 16 (L. Moero; west of Tenki).

Cisticola galactotes nr. *suahelica* LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 90 (upper Lufira Valley; Kasenga).

DISTRIBUTION: Northeastern Rhodesia near Lake Moero and Lake Bangweolo, westward at least to the Bunkeya River and Kando in the Katanga. In fresh breeding plumage this race is said to have a more rufous crown than *suahelica* or even *galactotes* of southeastern Africa. But wear soon reduces that color to such an extent that even Lynes was puzzled. He finally decided, however, that *luapula* was a well-characterized race, with a distinct dry-season plumage, limited to the southeast corner of the Congo basin.

Near Bangweolo and Moero this warbler is common by the lake sides, and through all its range it inhabits valley-bottom

flats, partly dry in the dry season, but swampy and flooded during the rains. It nests from November to February and probably somewhat longer, in the shortish marsh grasses. At Bangweolo Lynes watched *C. galactotes luapula* and *C. pipiens congo* breeding near each other, and remarked on the relatively mild courtship behavior of the former. He had no trouble distinguishing between the two kinds of birds, *luapula* seeming more gray-backed, with more conspicuous white tips on its tail.

The eggs of *luapula* are in sets of three or four, very glossy, plain deep brick red, or sometimes salmon pink spotted with dark red-brown. Average dimensions are 16.2 by 12.1 mm.

Cisticola pipiens congo Lynes

Cisticola pipiens congo LYNES, 1936, Bull. Brit. Ornith. Club, vol. 56, p. 110 (type locality: Elisabethville, Katanga); 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 92 (Sandoa; Kafakumba; Kasenga). A. W. VINCENT, 1948, Ibis, p. 303.

Cisticola galoctotes suahelica ≷ *galactotes* LYNES, 1930, Ibis, Cisticola Supplement, p. 399 (in part. Kiabo).

Cisticola pipiens LYNES AND SCLATER, 1933, Ibis, p. 719, pl. 24, map; pl. 26, photographs 7, 10; pl. 28, photograph 19 (L. Moero; L. Bangweolo; Tenki; Kayoyo); 1934, Ibis, p. 30.

DISTRIBUTION OF THE SPECIES: From Ndala Tando and the Benguella Plateau near Huambo eastward to the Upper Katanga, Marungu, and northeastern Rhodesia to the vicinity of Abercorn. *C. pipiens* is deceptively similar in pattern and color to *C. galactotes*, both being dwellers in swamps. *C. galactotes* is as yet unknown from central Angola, and it is safe to say that if Lynes had not found the two species nesting near together in the Bangweolo region, most of us would be content to consider *pipiens* as just one more race of *C. galactotes*.

Cisticola pipiens pipiens Lynes, still known only from Angola, is a large race, the wing of males measuring 63–68 mm. *C. p. congo* is a slightly smaller form, wing of males 60–66 mm., ranging from Saurimo in the Lunda District of Angola eastward to the Katanga, Marungu, and Northern Rhodesia. The adult breeding plumage of *congo* is slightly more boldly mottled above, more suffused with buff below, than that of nominate *pipiens*.

Using one of Lynes's Huambo specimens for comparison, I have decided that there are two examples of *C. p. congo* in the American Museum collection. One is an adult male from Kiabo on the Lualaba River, August 10, 1927, which was listed in the

Cisticola Supplement of 1930 among the records of *C. galactotes suahelica*. The other is a male taken by Rockefeller and Murphy at Mkuli, 5225 feet, in Marungu on February 20, 1929, and noted as having gonads enlarged for breeding. These two birds show the subspecific characters cited by Lynes, and they are surprisingly alike when one considers that the August bird must be in its off-season dress. It has none of the light buff streaking on the back that should adorn *C. g. luapula* in the middle of the dry season and no perceptible dusky streaking on the crown. This Kiabo bird was one of two or three seen on level grassy land back from the river, where there were lower spots with coarse grasses and a few bushes, evidently marshy at high-water time.

During the breeding season, according to Lynes, *C. pipiens* frequents water-logged swamps filled with reeds, sedges, or coarse grass, and male birds sit up at the top of a tall reed to give their song, a harsh, almost craking or twanging strophe of four syllables, "trrit trrrit trree-trreeeee. . ." This is repeated at intervals, and may also be given on the wing, the tail meanwhile slightly spread and flirted. A louder gabbled piping, "HWEET HWEET HWEET. . ." was heard only once. The behavior of males is more demonstrative than with *C. galactotes*.

The nesting season of *C. p. congo* begins in October and continues until February or later. Nests are placed in long marsh grasses, and resemble those of *C. galactotes*, of ball type, well lined, and decorated externally with cocoons or bits of plants. They hold three or four eggs. Those of *C. p. pipiens* are glossy rich salmon pink, profusely marbled and clouded with terra cotta, averaging 17.0 by 12.7 mm.

Cisticola carruthersi Ogilvie-Grant

Cisticola carruthersi OGILVIE-GRANT, 1909, Bull. Brit. Ornith. Club, vol. 23, p. 94 (type locality: Mokia, southeast of Ruwenzori, Uganda); 1910, Trans. Zool. Soc. London, vol. 19, p. 347. LYNES, 1930, Ibis, Cisticola Supplement, pp. 20, 408, 410, 623, pl. 14, fig. 59 (L. Mutanda; Kabare). VAN SOMEREN, 1932, Novitates Zool., vol. 37, p. 365 (L. George). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 102. JACKSON, 1938, The birds of Kenya Colony and. . . Uganda, vol. 2, p. 1113.

DISTRIBUTION: In swamps, from Kisumu in western Kenya Colony to Wadelai, the Lendu Plateau west of Lake Albert, Lake Edward, and Lake Mutanda in British Ruanda.

Carruthers' warbler is much more easily distinguished from *C. galactotes* than is *C. pipiens*. Its general coloration is darker, the tail-feathers from above seeming wholly brownish black except at the tips. The bill of *carruthersi* is noticeably more slender, the feet are weaker, but toes longer. Its wing measures 56–62 in males, 52–55 in females.

Scarcely more than 15 specimens have so far been taken, but the birds are not rare in suitable places, and they may well be expected in marshes on the shores of Lake Kivu. My first encounter with this warbler was at Masikini, 5000 feet, on the Lendu Plateau. Two were seen low down amid papyrus and coarse grass in an opening cut in a fair-sized swamp. No calls were heard, and the birds seemed not to be breeding, though it was in August.

The following April, as I waited in a papyrus swamp near Lake Mutanda at 6100 feet, hoping to catch a glimpse of *Bradypterus baboecala*, a single male *Cisticola carruthersi* passed by, flitting from one papyrus stalk to another. This was a breeding male, but again I heard no song.

Both the above localities were in highlands, but the birds are known to inhabit the shores of Lake Edward and Lake George at 3000 feet. Near the village of Kabare in May I found a male and a female. The former was perched on the top of a tall *Scirpus* growing in about 4 feet of water along the lake shore; the latter skulked lower down amid some tufts of *Phragmites* near by. But I never heard the song.

This warbler has no special dry-season plumage and may be expected to nest at almost any time of year, provided the marsh vegetation is not dried out. The only nest so far reported was found at Kisumu by Van Someren[1] on July 2, 1912. It was placed in grass or a stunted shrub, built of grass blades, cotton, and vegetable down, with a cottony lining. The eggs, probably four, were pale pink with brick-red and liver-colored spots. Both parents were collected, and while mistaken at first for "*lugubris*," they were later identified as *carruthersi*. It is worthy of note that *galactotes*, *pipiens*, and *carruthersi* are all apt to lay reddish eggs.

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[1] 1916, Ibis, p. 454. Additional notes on nests found in Bwamba are to be found in Van Someren, 1949, Uganda Jour., vol. 13, suppl., p. 68.

Cisticola robusta nuchalis Reichenow

Cisticola nuchalis REICHENOW, 1903, Ornith. Monatsber., p. 61 (type locality: Kagera R., northwestern Tanganyika Territory). O.-GRANT, 1908, Ibis, p. 297 (north of L. Edward; Mfumbiro Volcanoes, 5000 ft.); 1910, Trans. Zool. Soc. London, vol. 19, p. 352 (Fort Portal, 5000 ft.).

Cisticola robusta nuchalis NEUMANN, 1906, Jour. Ornith., p. 265. REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 356. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 297 (Kisaka; Urundi; Usumbura; Rutshuru Plain). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 289 (old Mission St. Gustave; Mai-na-Kwenda); 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 311; 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 102 (Mabenga); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 338 (Kibingo). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 132 (Ngoma; Makora; Zombia; Beni). LYNES, 1930, Ibis, Cisticola Supplement, pp. 21, 426, 427, 652 (Rutshuru Valley; L. Mohasi; Kabare; Nsaza; Mkingo–Mwulera; Kisenyi; northwest of L. Tanganyika; Luofu; Kasindi; Mt. Karimia; L. Mutanda; Kigezi). JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 1116.

Cisticola robusta LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 29 (Rutshuru).

Drymodyta robusta HENDRICKX, 1944, Ostrich, vol. 15, p. 205 (southwest of L. Kivu).

DISTRIBUTION OF THE SPECIES: From southern Eritrea and Abyssinia to the vicinity of Kilimanjaro, westward to the highlands of the Cameroon, the grasslands of the eastern Congo, Ufipa, Katanga, and Northern Rhodesia, and also in the highlands of Angola.

Cisticola robusta schraderi Neumann is a little-known race of southern Eritrea; most of the highlands of Abyssinia are occupied by *C. r. robusta* (Rüppell), but in southern Abyssinia the latter is replaced by *C. r. omo* Neumann and Lynes, a darker, richly colored form. *C. r. ambigua* Sharpe is smaller than the foregoing, less heavily mottled above than *robusta*, nape brighter rufous. It occupies a large part of Kenya Colony and northeastern Tanganyika Territory, but not the coastlands. *C. r. aberdare* Lynes is a dark-colored form, localized in high levels of the Aberdare Mountains.

Cisticola robusta nuchalis is very like *ambigua*, but slightly smaller, with wings of males 64–68 mm., those of females 55–59 mm. It is found from the Sotik and the slopes of Mt. Elgon across Uganda to the base of Ruwenzori, the highlands of the Kivu District, Karagwe, Ruanda, Urundi, and grasslands near the northern end of Tanganyika.

Cisticola robusta awemba Lynes of Ufipa, northeastern Rhodesia, and the adjacent section of the Upper Katanga, is slightly larger again; wings of males 69–73 mm., of females 58–62 mm. In fresh breeding dress it is perhaps a little more rufous above and more buffy below than *nuchalis*. In the southern Lulua District *awemba* intergrades with *C. r. angolensis* (Bocage), a still larger, more richly colored form inhabiting the whole highland area of central Angola.

Cisticola robusta santae Bates of the Cameroon highlands is small, with dimensions as in *nuchalis*, but the coloration rather like that of *angolensis*. One young bird from the vicinity of Bolobo near the middle Congo River is the only evidence of the occurrence of the species in that area. Until adults are collected its racial status cannot be determined.

Although in many parts of its range *C. robusta* is a highland bird, *C. r. nuchalis* is by no means restricted to montane levels. Strangely absent from all the grasslands about Lake Albert, it is common in those near Lake Edward, from the upper Semliki Valley and the eastern and southern base of Ruwenzori to the Rutshuru Plain, Luofu, grassy highlands about Lake Kivu, Ruanda, Urundi, and the eastern Manyema. Rudolf Grauer secured one male in fresh, richly colored dress during July in grassland 120 kilometers west of Baraka.

Despite its general resemblance in form to *C. natalensis*, this large grass warbler is easily distinguished in life by its ruddy nape and its quieter demeanor even during the breeding season. I have never known *robusta* to deliver a noisy flight song. In the lowlands around Lake Edward *C. robusta nuchalis* and *C. natalensis valida* are both common birds, living in areas of rather high grass. Near Kasindi I have seen them within 20 yards of each other, and they live side by side in the lower Rutshuru Plain. In this region *nuchalis* ascends fairly high, and it is abundant at 5400 feet near Luofu, on hillsides as well as in damp bottom-lands. It was seen about the post of Rutshuru, also near Kinanira in British Ruanda at 5800 feet, and around the shores of Lake Kivu it lives at 5000 feet. It doubtless occurs in the Ruzizi Valley and even ranges some distance to the west of Baraka.

During most of the year this is a very quiet bird, attracting notice only because of its size. The song of the male is described

as a piping ripple, "sri sri SRRRRRRRR," a tremolo sound of pea-whistle tone, given usually from the top of a low bush or a stout grass stalk. Other calls may be given as warnings of danger.

In the region of Toro and Lake Edward the annual molt takes place toward January, and nesting may be expected toward March and April, then again in October and November. In Karagwe the molt of adults seems to come in July, and young with breasts still yellowish have been taken there in that same month. Nesting coincides no doubt with the two rainy periods of the year.

The nest is of ball form, placed very low down in a clump of grass, with living green blades bent down and woven into a bower covering or enclosing the nest. Eggs are usually three in a set, light greenish blue to white, spotted or mottled with reddish brown to dull blackish.

Cisticola robusta awemba Lynes

Cisticola robusta awemba LYNES, 1933, Bull. Brit. Ornith. Club, vol. 53, p. 169 (type locality: Luwingu, 4600 ft., northeastern Rhodesia).

Cisticola robusta, southeastern race, LYNES, 1930, Ibis, Cisticola Supplement, p. 431 (Luena district, 4000 ft.; Luwingu).

DISTRIBUTION: From southern Ufipa and Marungu across northeastern Rhodesia and the Upper Katanga to the southern Lulua District, where it intergrades with *C. r. angolensis*.

Six specimens collected in Marungu by Rockefeller and Murphy have wings slightly longer than those of *nuchalis* and must be referred to *awemba*, though in color they scarcely differ at all from *nuchalis*. They were secured at Ketendwe, Sambwe, and Pande, between 5800 and 6100 feet above sea level. Three were noted as in full breeding condition during the last week of February.

The species does not seem to have been collected near the Kundelungu or Biano plateaus, where it might be expected. To the westward, near the upper Lubudi River, the transition to *C. r. angolensis* is already in progress.

So far as appearance and behavior are concerned, the race *awemba* must resemble *nuchalis* closely, except that it is said to have a distinct off-season dress. At Luwingu in Northern Rhodesia Lynes found a nest with complete set of two eggs in December.

Cisticola robusta angolensis (Bocage)

Drymoica angolensis BOCAGE, 1877, Jor. Sci. Nat. Lisboa, vol. 6, p. 160 (type locality: Caconda, Benguella Province, Angola).

Cisticola robusta LYNES AND SCLATER, 1933, Ibis, pl. 24, map (between Lubudi R. and Luashi).

Cisticola robusta awemba ≷ *angolensis* LYNES AND SCLATER, 1934, Ibis, p. 32 (Chababa; Luashi).

Cisticola robusta angolensis LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 92 (Kayoyo).

DISTRIBUTION: From the southern Lulua District of the Congo westward to the Benguella Plateau. It is restricted to highlands above 3500 feet and seems not to enter the Kasai District.

The favorite haunts are open stretches of grass, often slightly moist, between the patches of savanna woods or near edges of open marshy ground. Breeding goes on from November to May. Nests are of ball type, low down in rather fine grass. Bent-over and interwoven green grass blades surround the nest, which itself is composed of fine dry grass and a little cobweb, usually with a lining of plant down. Eggs are usually two, plain light blue or white, or with variable spotting of reddish; average dimensions are 18.1 by 13.6 mm.

As I have already stated, Lynes[1] has identified a young bird from Kunungu near Bolobo as belonging to the present species, but it has not been possible to determine the race. This is all the more remarkable since Lynes failed to find *C. robusta* anywhere in the Kasai, nor is it known from the lowlands of northern Angola.

Cisticola natalensis valida (Heuglin)

Drymoeca valida HEUGLIN, 1864, Jour. Ornith., p. 258 (type locality: Wau, Bahr-el-Ghazal Province, Sudan).

Cisticola strangii SHELLEY, 1888, Proc. Zool. Soc. London, p. 24 (Tingasi).

Cisticola strangei REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 545 (in part. Tingasi). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 353 (Mokia). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 297 (Usumbura; Kasindi; Irumu). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 289 (Kamabo; Maina-Kwenda; Lufungula, old Mission St. Gustave; Masidongo; Boga).

Cisticola natalensis REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 549 (Buesa; Nyangabo); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 355 (Beni).

Cisticola natalensis malzacii SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 298.

[1] 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 92.

Cisticola natalensis pachyrhynchus VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 211 (L. Albert).

Cisticola natalensis subsp. GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 131 (Kasindi; Makora; Masidongo; Zombia; Malabo; Sidabo).

Cisticola natalensis valida LYNES, 1930, Ibis, Cisticola Supplement, pp. 21, 453, 456, 670 (in part. Faradje; Niangara; Adra; northwest of L. Albert, 6000 ft.; Bungulu; Mahagi; Mahagi Port; Djalasinda; Ukondju; Ndussuma; Semliki Valley; west side of L. Edward; Rutshuru Plain; Uvira; L. Kivu). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 562. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 567 (Vube in Ituri; Bunia). FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 276. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1118. SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 102 (Bushenda on Rutshuru R., 1700 m.); 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 285 (Mt. Wago).

Cisticola natalensis kapistra SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 122 (Niarembe).

SPECIMENS: Pawa, two males, July 11, October 21. Niangara, three males, May 7, 28, December 16; immature male, January 20; three females, May 18, June 1; subadult female, May 7. Faradje, four males, January 8, February 20, April 23, September 4; female, October 13; immature male, September 20. Garamba, male, June 12.

ADULTS IN RAINY SEASON: Iris light brown; bill blackish above, lower mandible light bluish (male) to grayish pink (female), generally with darker tip; feet pinkish buff to pale buff, claws gray. Adults of both sexes in dry-season plumage have the bill lighter and browner above, and pinkish gray to whitish beneath. The young at that season are similar.

DISTRIBUTION OF THE SPECIES: From northeastern Cape Province to southern Eritrea, and westward to the greater part of Angola, except the coast, and to Portuguese Guinea, or perhaps Senegal. It is wanting, however, in all the solid forest areas of Lower and Upper Guinea, and except in Abyssinia it is scarcely found above 7500 feet.

Lynes (1930) recognized nine races and emphasized the difficulty in drawing limits for them. In equatorial Africa there is usually no dry-season dress, while elsewhere that plumage is so conspicuously different that it was often mistaken for a distinct species. The very ruddy coloration of all plumages in the Angolan area is another striking feature, while unusually pale forms are found in arid regions near the Nile and the lower Juba River.

Cisticola natalensis natalensis (Smith) ranges from Pondoland north to Nyasaland and is replaced in Tanganyika Territory, Uganda, and much of the northeastern Congo by *C. n. valida*, which is smaller and often lacks a dry-season dress. But *valida* is so variable that already two more races have been proposed, *matengorum* Meise[1] from northeast of Lake Nyasa, and *littoralis* Van Someren[2] from the coastal area of East Africa.

Cisticola natalensis huambo Lynes of Angola is much more rufous than *natalensis*, especially in off-season dress, and *C. n. katanga* Lynes of the southeastern Congo and Northern Rhodesia is intermediate between them. *C. n. strangei* (Fraser), the West African representative, is very like nominate *natalensis*, but smaller.

Additional forms not reaching the Congo are *kapitensis* Mearns of central Kenya Colony, *inexpectata* Neumann of Abyssinia, *argentea* Reichenow of southeastern Somaliland, and *tonga* Lynes of the White and Blue Niles.

In a privately printed "Cisticola check-list" of 1928 Lynes proposed the name *kapistra* for a Uganda race, but soon he enlarged its range and adopted Heuglin's name *valida* instead. Under this he listed specimens all the way from the Bahr-el-Ghazal and Northern Province of Uganda to the Mara River in Kenya Colony, the Morogoro and Iringa districts of Tanganyika Territory, and the Kasai District of the Congo. By 1938 Lynes revised that opinion and referred Kasai birds to *katanga*. Specimens taken by Grauer at Usumbura and Uvira are best called *valida*, but others from the grasslands of the Manyema resemble those of the Kasai.

Cisticola natalensis valida is common and conspicuous in the grasslands of the Uelle. It differs but little from *C. n. strangei* of West Africa, which is believed to reach the great bend of the Ubangi. We cannot yet say just where these two races meet. On the west side of Lake Albert *valida* was seen at Kasenyi, and it was much more in evidence on the Lendu Plateau, where I found it up to 5900 feet near Mt. Avu. *C. robusta* is not known to occur on that highland. In the grasslands around Lake Edward, however, both these large cisticolas are resident, and *C. natalensis valida* ascends the southern end of Ruwenzori to around

[1] 1934, Ornith. Monatsber., p. 117 (Nambunchu, southwest Tanganyika Territory).

[2] 1943, Bull. Brit. Ornith. Club, vol. 64, p. 23 (Rabai, Kenya Colony).

5000 feet. It was noted at Karebumba, about 5200 feet, on the west side of the Semliki Valley, and up to 5500 feet in the highland just east of Rutshuru. About the shores of Lake Kivu it seems to be unknown, though it inhabits the Kagera and lower Ruzizi valleys and the northeast shore of Tanganyika near Nyanza.

In all those districts it is a common bird of the high grass, especially conspicuous during the rainy part of the year. High overhead a brown bird may be flying about, and then it begins to repeat a strident guttural or even gurgling sound. This is a male *C. natalensis* displaying. Down he comes obliquely, sometimes in swoops, calling loudly all the while, his tuneless notes suggesting transliterations like "krrrk, krrrk. . ." or "klunk, klunk. . .," until finally he alights in a conspicuous position on some tree or bush. Rather similar calls may also be given from a perch, but always the male is the noisy bird.

The smaller females are more apt to be skulking in the high grass, uttering only short scolding notes. Dissections showed that in the Uelle District breeding takes place in April and May, and again in October, whereas four adults collected in June, July, and September showed little development of the gonads. Van Someren has found two rather similar breeding seasons in Uganda. Of course there is no nesting in the greater dry season, when many adults in the Uelle assume a streaked plumage. But here there is not the same regularity in the alternation of plumages that one might expect in regions farther from the Equator.

Adults regularly retained their nuptial dress until November. We took adult males in streaked dry-season plumage on December 16 and January 8, but one male at Faradje was found in grayish nuptial dress on February 20. On the other hand an adult female at Niangara on May 18 was still in dry-season dress while the ovary was enlarged, ready for laying. The last two birds were exceptional; the majority seen in the months between December and April were in streaked plumage and silent. It is only natural that they used to be mistaken for a distinct species.

In the region of Lake Edward adults were in nuptial dress in January, and there they perhaps have no dry-season change. The two nesting periods may be more evenly balanced. Toward Karagwe and the north end of Tanganyika one may expect some adults to assume a streaked dress toward July. The young are always heavily striped.

The nest of *C. natalensis* is like that of *C. robusta*, close to the ground in a bunch of tall grasses, with many of the green blades woven together over its dome. Eggs are two or three, white with spotting of dull light purple madder, or sometimes perhaps with pale blue ground color; dimensions are about 17.5–18 by 12.5 mm.

With the exception of a single spider, the stomachs of 14 individuals of *Cisticola n. valida* held nothing but insects, most often small beetles, but eight of the birds had also taken grasshoppers, one of which was large enough to fill the whole stomach, even though rolled tightly up. One hemipter and one caterpillar were also noted.

Cisticola natalensis strangei (Fraser)

Drymoica strangei FRASER, 1843, Proc. Zool. Soc. London, p. 16 (type locality: Accra, Gold Coast).

Cisticola strangei SHARPE, 1883, Catalogue of the birds in the British Museum, vol. 7, p. 276 (Landana). REICHENOW, 1887, Jour. Ornith., pp. 306, 307 (Leopoldville; "Stanleyville"); 1905, Die Vögel Afrikas, vol. 3, p. 545 (in part. Leopoldville; "Stanley Falls"). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127; 1904, Bull. Mus. Hist. Nat. Paris, vol. 10, p. 540 (Brazzaville; upper Kemo R.). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (in part. Leopoldville).

Cisticola natalensis strangei SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 397 (Kwamouth); 1924, idem, vol. 12, p. 271 (Kidada); 1925, idem, vol. 13, p. 15 (Bolobo; Kunungu). LYNES, 1930, Ibis, Cisticola Supplement, pp. 21, 445, 446, 664. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 561. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 193. BOUET, 1942, Ois. Rev. Française Ornith., new ser., vol. 12, p. 50.

Cisticola natalensis valida LYNES, 1930, Ibis, Cisticola Supplement, pp. 453, 456 (in part. Lukolela; Leopoldville; Kidada; Kunungu; Kisantu; Bolobo; Kwamouth).

Cisticola natalensis nr. *strangei* LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 93 (Leopoldville; Lower Congo).

SPECIMENS: Lukolela, immature male, July 17. Leopoldville, male, December 21.

DISTRIBUTION: Portuguese Guinea, and possibly Senegal, through the grasslands of Upper Guinea to the Cameroon, the Shari River, and the great bend of the Ubangi; also south of the equatorial forest from the Loango Coast to the Middle Congo district, Lukolela, and the lower Kasai River.

This race differs but slightly from *valida*, being a little less mottled with blackish above in the breeding plumage. Speci-

mens from around Stanley Pool agree with West African birds and are isolated from *valida* by the race *katanga* to the eastward. We know very little about the occurrence of *strangei* in the Ubangi District of the Belgian Congo, north of the forest, but it is a common bird near Boma and Leopoldville and in the grasslands just a few miles south of Lukolela. In haunts, behavior, and voice it is exactly like *C. n. valida*, but acts as though breeding between September and April or May.

The nest has been well described from Nigeria[1] and is elliptical, domed, with lateral entrance. Dry grass blades are used, with a lining of grass tops and plant down, while over and around the nest growing green grass blades are interlaced to form a bower. The site is low down in rank grass. Eggs number two or three, white with spots and dots of various shades of brown, even dull claret, or sky-blue thinly speckled with deep lilac, yellowish brown, and dark brown. The markings are most numerous around the blunt end. Dimensions are 16.6–20 mm. by 13.5–14.3.

Cisticola natalensis katanga Lynes

Cisticola natalensis katanga LYNES, 1930, Ibis, Cisticola Supplement, p. 443 (type locality: Kambove, Upper Katanga, Belgian Congo; also from L. Bangweolo; Lofu R.; Lualaba Valley, 4000 ft.; L. Musolo); 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 92 (Elisabethville; Biano Plateau; Sandoa; Kamina; Kaulu; Kilembe; Banda; Kabambaie; Petianga). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 561. LYNES AND SCLATER, 1934, Ibis, p. 33 (Tenki; Nasondoye; Dilolo). MEISE, 1937, Mitt. Zool. Mus. Berlin, vol. 22, p. 134. WHITE, 1946, Ibis, p. 95 (Mwinilunga).

Cisticola strangei DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (in part. "Kibongo").

Cisticola strangii NEAVE, 1910, Ibis, p. 147 (Kambove; upper Lufira R.; Bunkeya R.).

Cisticola natalensis SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 337 (Macaco; Tshikapa). LYNES AND SCLATER, 1933, Ibis, pl. 24, map; pl. 28, photo 22 (from Luapula R. west to Dilolo).

Cisticola natalensis valida LYNES, 1930, Ibis, Cisticola Supplement, pp. 453, 456 (in part. West of Baraka; Kabalo; Tshikapa; Macaco; Luluabourg). GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 188 (Luluabourg).

Cisticola natalensis natalensis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 561 (in part. "Southern Congo basin").

DISTRIBUTION: From the Kasai District to the Manyema grasslands, Marungu, Upper Katanga, and northeastern Rhodesia to

[1] Shuel, 1938, Ibis, p. 240; Serle, 1940, Ibis, p. 15.

Abercorn and Isoka. The race *katanga* is best distinguished from *valida* by the fainter dark markings on crown and back, and the more rufous brown coloration on those areas. This ruddier color also differentiates it from *strangei* in breeding dress.

Three males from the Manyema, between 140 and 220 miles west of Baraka, show these racial characters in varying degree. In four males from Marungu, all in worn breeding dress, collected by Rockefeller and Murphy, the rufous coloration is not well shown, but on geographic grounds I refer them to *katanga*. They come from Baudouinville, Lake Suzi, and Mkuli, the last-named locality at 5225 feet. The condition of the plumage may account for their grayness. Specimens from the Kasai, on the other hand, are clearly referable to *katanga*, despite the doubts which Lynes felt in 1930. By 1938 he was thoroughly convinced.

The behavior of this race is the same as that of other forms already discussed. It lives in a wide variety of situations, but fairly high thick grass, often growing near swamps, is a prime requisite. The breeding season comes between December and April in the Katanga[1] and begins a month or two earlier in the Kasai and Manyema. Lynes found two nests, each with two eggs, at Banda, in the Kasai, in October.

Cisticola natalensis huambo Lynes

Cisticola natalensis huambo LYNES, 1930, Ibis, Cisticola Supplement, p. 441, pl. 15, fig. 64 (type locality: Lepe, 4900 ft., Benguella District; also from Kwango R.).

Cisticola strangei REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 545 (in part. Kwango R.).

DISTRIBUTION: Central and northern Angola, but not on the coast. Not restricted to high levels, for it comes down into the Cuanza Valley and ranges northward to the region of Duque de Bragança and the upper Kwango River. It surely reaches the southern Kwango District of the Belgian Congo, for Ansorge obtained two examples at Fort Don Carlos, now called Tembo Aluma, at the confluence of the Cambo with the Kwango River. This is just across the river from Belgian territory.

In addition to its ruddier coloration, best shown in the off-season plumage, this race is a large one, with wings of males 74–

[1] A. W. Vincent, 1948, Ibis, p. 305.

78 mm., of females 57–64 mm. Its behavior is typical of the species, and the breeding season begins in November or December, continuing until March or April. The nest is placed in clumps of grass only about 6 inches above the ground, sheltered by a bower of green blades. The eggs, so far as known, are three, white lightly speckled with light purple-madder, about 20 by 13 mm.

Cisticola chiniana simplex (Heuglin)

Drymoeca simplex HEUGLIN, 1869, Ibis, p. 105 (type locality: country of Kitsch Negroes, Upper Nile).

Cisticola cheniana simplex SCLATER AND M.-PRAED, 1918, Ibis, p. 649 (Yei). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 553 (L. Albert). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 122; 1941, Rev. Zool. Bot. Africaines, vol. 34, p. 266. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 567.

Cisticola chiniana simplex LYNES, 1930, Ibis, Cisticola Supplement, pp. 17, 273, 275, 663 (Kasenyi; Mahagi Port). BOWEN, 1931, Catalogue of Sudan birds, vol. 2, p. 42 (Yei). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1101.

DISTRIBUTION OF THE SPECIES: Natal, southern Bechuanaland, and Damaraland, north to Stanley Pool, the Kasai, the Ruzizi Valley, upper White Nile, and southern Abyssinia. Eleven races were recognized by Lynes (1930), and a few years later he decided that *fortis* was merely a twelfth. Another name, *emendata*, was proposed by Vincent[1] for the birds Lynes had called *procera*. Not more than four subspecies are at all likely to occur in the Congo, so the others need not be discussed at length.

The crown is more or less rufous, least so in northeast Africa; the back is mostly streaked with blackish, though the dark stripes are all but wanting in *C. c. fortis* of Angola, the southern Congo, and northeast Rhodesia. *C. c. fischeri* of central and northwestern Tanganyika Territory, on the other hand, is well streaked on the back, dull reddish brown on crown and often with some dark streaking there as well. That race reaches the northern end of Lake Tanganyika. *C. c. victoria* Lynes, of the eastern and southern shores of Lake Victoria, is slightly larger than *fischeri* and still more heavily striped above. It is believed to extend around the southwest side of the lake and to reach the Kagera

[1] 1944, Bull. Brit. Ornith. Club, vol. 64, p. 63 (Mirrote, northern Portuguese East Africa).

Valley. *C. c. simplex* is again less streaked above, dull in color, and ranges from Lake Albert north to the sudd of the White Nile and eastward to Mt. Moroto.

Within our limits *simplex* is restricted to the shores of Lake Albert. Common at Kasenyi and Mahagi Port, it is not to be seen above the escarpment near Bogoro or in the Upper Uelle District. Christy is said to have taken a specimen at Yei which is now in the Khartoum Museum, but otherwise the species is not known to range so far west of the Bahr-el-Jebel.

This is a conspicuous bird wherever found. During the nesting season the male takes station on some thin elevated branch of a bush or low tree, there to jump up and down excitedly on his perch, beating the wings up and down and flitting the tail up above his back. With open beak he pours forth a medley of "chwees," often followed by a longer bubbling sound or trill that has little music to it. Despite all his enthusiasm, he never performs in the air as does *C. natalensis*. His alarm note is a brief churring call. The female is distinctly shy and elusive.

The breeding period around Lake Albert is believed to last from March or April to August. The nest is doubtless like that of the East African races, an upright oval with lateral entrance, placed in grass at a height of about a foot. Materials are mainly dry grass blades, bound together and attached with silken fibers. Eggs have been taken on the eastern shore of Lake Albert by Pitman, and they are supposedly bluish white or light blue with red-brown and purple-gray spotting.

Cisticola chiniana victoria Lynes

Cisticola chiniana victoria LYNES, 1930, Ibis, Cisticola Supplement, p. 264 (type locality: Kisumu, Lake Victoria; also from Kanyonza on Kagera R.).

Cisticola chiniana REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 546 (Mpororo); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 355.

DISTRIBUTION: Basin of Lake Victoria, from the North Kavirondo District around the eastern and southern shores, including Ukerewe Island, to Karagwe and the Kagera Valley. The record from Kanyonza on the Kagera shows that it must certainly occur in the lowlands of northeastern Ruanda.

Cisticola chiniana victoria is more heavily striped above, on the back and even the crown, than *simplex*, and has no distinct off-season dress. Like *simplex* and *fischeri*, it avoids highlands,

and has seldom been found above 5000 feet. Living close to the Equator, it may have two breeding periods in the year, during rainy months. Nests have been reported by MacInnes from the Kavirondo District between April and June.

Cisticola chiniana fischeri Reichenow

Cisticola fischeri REICHENOW, 1891, Jour. Ornith., p. 162 (type locality: Tura, Tabora District, Tanganyika Territory).

Cisticola chiniana fischeri LYNES, 1930, Ibis, Cisticola Supplement, pp. 17, 262, 264 (Usumbura).

DISTRIBUTION: Interior of Tanganyika Territory, from the vicinity of Kilimanjaro and Iringa to Usumbura at the northern end of Tanganyika. From within our limits I have seen only a single female from Usumbura, which still shows signs of immaturity in its wings. It was identified by Lynes. This eastern race may therefore be expected on the lower Ruzizi Plain and the northeast shore of Tanganyika. In the savannas west of Baraka *C. s. fortis* takes its place. In habits *fischeri* is similar to *simplex* and may be expected to nest during the southern rainy season, or between November and May.

Cisticola chiniana fortis Lynes

Cisticola fortis LYNES, 1930, Ibis, Cisticola Supplement, pp. 18, 321, 324, 632, pl. 11, fig. 47 (type locality: Pedreira, Bihé District, Angola; also from Leopoldville; Kabambaie; Luluabourg; Lusambo; 50 miles west of Baraka; Elisabethville). SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 285. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 555 ("central and northern Belgian Congo").

Cisticola ruficapilla REICHENOW, 1887, Jour. Ornith., p. 306 (Leopoldville).

Cisticola rufopileata REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 561 (in part. Leopoldville).

Cisticola emini O.-GRANT, 1908, Ibis, p. 297 (west of Baraka, 2500 ft.).

Cisticola rufopileata emini REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 357 (in part. West of Baraka).

Cisticola rufopileata rufopileata SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 337 (in part. Kabambaie; Tshikapa; Ngombe in Kasai).

? *Cisticola* sp. SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 337 (Kabambaie).

? *Cisticola semitorques* SCHOUTEDEN, 1924, Rev. Zool. Africaine, vol. 12, p. 418 (Kabambaie).

Cisticola chiniana LYNES AND SCLATER, 1933, Ibis, pl. 24, map (between Elisabethville and Dilolo).

Cisticola chiniana fortis LYNES AND SCLATER, 1934, Ibis, p. 24 (Tenki).

LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 87 (Biano; Luluabourg; Idiofa; Petianga).

DISTRIBUTION: The Benguella Plateau of Angola, north to Stanley Pool, Lusambo, and the Manyema District in the Congo, east to the Marungu highland and to Abercorn in northeastern Rhodesia.

Specimens from the Kasai puzzled us for years, because they looked so like *C. anonyma* and yet had distinctly longer wings. Ansorge had collected a series in Angola, and they were referred to *C. obscura*, a name now regarded as synonymous with *C. chiniana campestris* of Natal. Lynes at first considered *fortis* a valid species, but after making its acquaintance in life he recognized that it was simply an extreme race of *C. chiniana*, with the dark gray-brown back only faintly dappled with blackish. The rufous outer margins of the primaries and the longer wings distinguished it from *C. anonyma*.

Unlike the races already mentioned, *fortis* is not a purely lowland bird, but lives from about 1000 feet, as at Leopoldville, up to around 5600 feet in the Marungu. Moreover, it frequents open savanna woods and their borders rather than plains bordering on rivers or lakes. Rockefeller and Murphy collected it at Lubenga, Kasoko, Kampia, and Kinia in Marungu, between 3900 and 5650 feet, and Carruthers and Grauer took two specimens at 50 and 100 miles west of Baraka in the Manyema. In most of its behavior it agrees with the other races of *chiniana*.

Nesting is carried on during the rains, from September to March, but may be retarded by any delay in their arrival. On the other hand, a few pairs may begin in the Kasai in August. The nest is of the ball type, built of grass and lined with finer grass and plant down. It is normally placed in grass, low down, but occasionally in a shrub. The eggs are three to the set, white with reddish spots, or pale turquoise-green with black, dark brown, and maroon spots, chiefly in a ring about the blunt end. Dimensions are 16.5–17.6 mm. by 12.9–13.0 mm.

Cisticola rufilata ansorgei Neumann

Cisticola ansorgei NEUMANN, 1906, Bull. Brit. Ornith. Club, vol. 16, p. 114 (type locality: Caconda, Benguella District, Angola).

Cisticola rufilata LYNES AND SCLATER, 1933, Ibis, pl. 24, map (Katanga).

Cisticola rufilata ansorgei LYNES AND SCLATER, 1934, Ibis, p. 23 (Kawambwa;

L. Bangweolo; Luwingu in northeastern Rhodesia; and Mocussueze in Angola). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 87 (Nasondoye, 3600 ft.; Biano, 5200 ft.).

DISTRIBUTION OF THE SPECIES: Transvaal, Bechuanaland and Damaraland, north to the highlands of Angola, the Upper Katanga, and northeastern Rhodesia. *C. r. rufilata* (Hartlaub), of the regions south of the Zambesi and of Damara and Ovamboland, is a little lighter in color than *C. r. ansorgei* of Angola, the southeastern Congo, and Northern Rhodesia. Nyasaland birds seem close to *ansorgei*.

In addition to the reddish crown, the markings on the streaked back are more reddish than in allied species, and the tail is largely bright rufous, with rather narrow quills.

This is a bird of light savanna woodland and its outer edges. Shy and elusive in behavior, it has been found at only a few localities in the southeastern corner of the Congo. The male gives a song consisting of a number of tinkling, bell-like notes during the breeding season, and when alarmed both sexes utter a strophe of high twittering notes.

Nesting, in Angola and Northern Rhodesia, is in progress from November to February, inclusive. The nest is of ball shape, placed low down in some green shrub surrounded by grass. It is built of dry grass blades, with extra bits of plants on the outside and a lining of plant down. The eggs are two or three, very pale greenish blue to turquoise, freckled or blotched with purplish claret; dimensions average 16.3 by 12.0 mm.

[*Cisticola lais semifasciata* Reichenow]

Cisticola semifasciata REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 544 (type locality: Tandalla, southwestern Tanganyika Territory).

Cisticola lais semifasciata LYNES, 1930, Ibis, Cisticola Supplement, p. 230, pl. 10, fig. 33.

Cisticola lais (Finsch and Hartlaub) is a medium-sized species ranging from the Cape Province to the highlands of northern Nyasaland, southwest Tanganyika Territory, and central Angola. Of its six or seven races, this one reaches the Masuku Mountains of northern Nyasaland and inhabits short grass downlands at 5000 to 7000 feet. The back is streaked with blackish, the crown is rufous brown with small dusky streaks, and the rectrices have rather small, blackish subterminal markings on inner webs only.

There seems to be little probability that *semifasciata* reaches the Katanga.

On the Rungwe highlands north of Lake Nyasa and the Nyika Plateau in Nyasaland, above 7000 feet, lives *C. njombe mariae* Benson,[1] rather similar in appearance to *semifasciata* but now believed to belong to a distinct species. It does not seem possible that this bird can reach our limits.

[*Cisticola aberrans nyika* Lynes]

Cisticola aberrans nyika LYNES, 1930, Ibis, Cisticola Supplement, pp. 23, 564, 653, pl. 17, fig. 74 (type locality: Nyika Plateau, 6500 ft., northern Nyasaland); 1934, Ibis, p. 36 (Mt. Sunzu, 6700 ft., near Abercorn).

Although reported from Mt. Sunzu near Abercorn, only about 85 miles from the Congo border near Moliro, this warbler may not reach our limits. North of the Zambesi the species is restricted to rather high areas in Nyasaland and Northern Rhodesia at 4500 to 6000 feet, but it extends to sea level in eastern Cape Province. *C. a. nyika* is known from Portuguese East Africa and Southern Rhodesia north to Mt. Sunzu and differs from the two southern races in having dark subterminal spots on the inner webs of most of its rectrices.

Cisticola fulvicapilla dispar Sousa

Cisticola dispar J. A. DE SOUSA, 1887, Jor. Sci. Nat. Lisboa, vol. 12, pp. 98, 106 (type locality: Caconda, Angola).

Cisticola fulvicapilla dispar LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 94 (Leopoldville).

DISTRIBUTION OF THE SPECIES: Cape Province north to central Tanganyika Territory, Northern Rhodesia, and Stanley Pool on the Congo River. *C. f. fulvicapilla* (Vieillot) is gray-breasted, with dark reddish brown cap and tail plain brown without any blackish markings. It inhabits the coastal districts of much of the Cape Province and the adjacent country of Natal. In southwestern Cape Province it is replaced by the still darker *C. f. silberbaueri* (Roberts). *C. f. ruficapilla* (A. Smith) is brighter in color than the nominate race, buffy rather than gray beneath, and ranges from the Orange Free State, Transvaal, and Southern Rhodesia to Damaraland. *C. f. muelleri* Alexander, from Gazaland and Mozambique to Northern Rhodesia and Kilosa in Tan-

[1] 1945, Bull. Brit. Ornith. Club, vol. 66, p. 16; 1948, idem, vol. 68, pp. 122, 123.

ganyika Territory, differs from the more southern races in having a restricted fan pattern on the tail. *C. f. dispar* is more richly colored than *muelleri*, with similar subterminal spotting on the tail, and it inhabits most of Angola except the coast, ranging northwestward to Kinshasa on Stanley Pool and Kinkala in the French Congo.

Ever since Lynes and Vincent found this small *Cisticola* near Leopoldville in 1933, it has been clear that it must be expected here and there in the Kwango District. The species *fulvicapilla* is somewhat like the much commoner *C. brachyptera* in behavior, though more apt to live among the trees of light savanna woods. During the breeding season the male occupies an elevated perch on a bush, tree top, or telegraph wire, singing his weak monotonous "clock-ticking" song all through the day. This period coincides with the early rains and lasts from October to January for *dispar* in Angola and the southwestern Congo.

The nest is presumably of the ball type, placed quite low in the grass or in a shrub ingrown with grass. In other races the eggs number three or four to a set and are extremely variable in color. Those of *C. f. dispar* are still unknown.

[*Cisticola fulvicapilla muelleri* Alexander]

Cisticola muelleri ALEXANDER, 1899, Bull. Brit. Ornith. Club, vol. 8, p. 49 (type locality: Mesanangue, Zambesi R.).

Cisticola fulvicapilla muelleri LYNES, 1930, Ibis, Cisticola Supplement, pp. 22, 513, 515, 649 (Chambezi Valley, 4000 ft.). WHITE, 1941, Ostrich, vol. 11, p. 99 (Nchanga).

Cisticola fulvicapilla LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 94 (Broken Hill).

Cisticola fulvicapilla dispar WHITE, 1946, Ibis, p. 95 (Mwinilunga).

While not yet reported from within our limits, this subspecies has long been known from the Chambezi Valley east of Lake Bangweolo, also from Broken Hill. More recently White has secured a female at Nchanga in Northern Rhodesia, only 20 kilometers from the Katanga border near Tshinsenda, and a male close to the frontier northeast of Mwinilunga. We may therefore be certain that it occurs in the Upper Katanga.

Cisticola angusticauda Reichenow

Cisticola augusticauda (*sic*) REICHENOW, 1891, Jour. Ornith., p. 69 (type locality: Gonda, or Igonda, Tabora District, Tanganyika Territory).

Apalis pearsoni SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 285 (Kafubu R.).

Cisticola angusticauda LYNES, 1936, Bull. Brit. Ornith. Club, vol. 56, pp. 112, 114 (from Elisabethville, 80 miles to northeast and northwest; Ndola); 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 94 (Katofio).

DISTRIBUTION: From South Kavirondo, the vicinity of Tabora, and Lake Burigi south to the Rovuma River, Marungu, and the Upper Katanga. In addition to the specimens reported from Katofio and the vicinity of Elisabethville, some of which were at first confused with *C. pearsoni*, a male and two females were taken in Marungu at Kinia, 3925 feet, and Kasoko, 4100 feet, by Rockefeller and Murphy in 1929. An undoubted specimen of *angusticauda* in the Rothschild Collection was also collected by Rudolf Grauer in June, 1907, between Lake Burigi and Usuvi, to the southwest of Lake Victoria. So this small warbler may perhaps reach the upper Kagera Valley.

The long blackish brown tail, usually with blackish subterminal markings visible from below, is very distinctive. After long hesitation Lynes in 1936 finally admitted it to the genus *Cisticola*, as an ally of *C. fulvicapilla*. The outermost primary is usually less than half as long as the next quill, narrow, and acute. In a male from Kasoko it is only 9 mm. long and 2 mm. wide. Iris light yellowish brown; bill light brown, only slightly darker on culmen; feet flesh color, sometimes tinged with yellowish.

The species lives mostly in light woodland, at levels between 3500 and 5500 feet, usually in pairs. According to Böhm its wing beats may be decidedly noisy. Breeding takes place in the rains, between December and April, at which time the male will take station on a bare twig at the very top of a tree. Movements of the tiny bill show that he is singing, but only an acute ear will catch its metallic clicking notes. These Lynes found very like the song call of *C. fulvicapilla*, and in my opinion the relationship with that species is closer than so far admitted. The seasonal change in plumage is slight; the rectrices in breeding dress are only about 3 mm. shorter than those of the off season.

The nest is of the ball-shaped type, placed low down in the grass, and holds three to four eggs. A set from Elisabethville in January was described by Lynes as white with small Indian red spots and freckles; the eggs measure 14.0–14.8 mm. by 11 mm.

Cisticola pearsoni (Neave)

Dryodromas pearsoni NEAVE, 1909, Ann. Mag. Nat. Hist., ser. 8, vol. 4, p. 130 (type locality: Lufupa R., 4000 ft., western Katanga); 1910, Ibis, p. 150, pl. 2.

Apalis pearsoni SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 528. LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 80 (near Nasondoye). WHITE, 1947, Bull. Brit. Ornith. Club, vol. 68, p. 35 (Ndola district).

DISTRIBUTION: Known only from Ndola district near Kipushi and the upper Lufupa Valley, unless, as I suspect, it may prove to be conspecific with *Dryodromas melanurus* Cabanis,[1] which was discovered by Otto Schütt somewhere in northern Angola. Lynes[2] examined the type of *melanurus* but decided it was not a *Cisticola* and did not compare it with *pearsoni*.

The descriptions show no important point of difference: both are rufous-capped, whitish beneath, and with graduated tails largely black in color. The back may be grayer in the bird from Angola, more reddish brown in that of the Katanga. The wings of *pearsoni* measure 44–51 mm., tails 42–51. The type of *melanurus* had the wing 47 mm., tail 55.

The main arguments against including this species in the genus *Cisticola* have been taken from the shape and color of its tail and the unusual reduction of its outer primaries. The outermost primary is only about 8 mm. long, the next one only 19 or 20 mm. But an approach to this condition is seen in *C. angusticauda*, and the resemblance in general coloration to *Cisticola* is very pronounced. The genus *Dryodromas* Finsch and Hartlaub, of which the type is *fulvicapilla* Vieillot, is best united with *Cisticola*, and I cannot agree that *pearsoni* shows any close resemblance to the genus *Apalis*.

Little is known of its life history. Neave, in late October, noted *C. pearsoni* as not uncommon on the upper Lufupa, usually in pairs. It frequented rather tall trees, not bushes, in the woodland, and flew with a loud clicking as though going by clockwork. Lynes, on the other hand, saw it feeding in low bushes beneath trees, in two's or slightly larger groups. This was in August, when they were certainly not breeding.

Cisticola brachyptera brachyptera (Sharpe)

Drymoeca brachyptera SHARPE, 1870, Ibis, p. 476, pl. 24, fig. 1 (type locality: Volta R., Gold Coast Colony).

[1] 1882, Jour. Ornith., p. 349 (Angola).

[2] 1930, Ibis, Cisticola Supplement, p. 647.

Cisticola brachyptera SHARPE AND BOUVIER, 1877, Bull. Soc. Zool. France, vol. 2, p. 476 (Lukula R.). HARTLAUB, 1882, Abhandl. Naturwiss. Ver. Bremen, vol. 8, p. 190 (Congo).

Cisticola rufa SHARPE, 1883, Catalogue of the birds in the British Museum, vol. 7, p. 252 (Condé). REICHENOW, 1887, Jour. Ornith., p. 306 (Leopoldville); 1905, Die Vögel Afrikas, vol. 3, p. 567 (in part. Condé to Leopoldville). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (Lower Congo). SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 397 (Kwamouth); 1926, idem, vol. 13, p. 198 (Moanda).

Cisticola ferruginea REICHENOW, 1887, Jour. Ornith., p. 306. DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (in part. Leopoldville).

Cisticola brachyptera brachyptera BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 365 (Ubangi R.); 1939, The birds of tropical West Africa, vol. 5, p. 197. LYNES, 1930, Ibis, Cisticola Supplement, pp. 21, 470, 472, 621, pl. 16, fig. 67 (Luma I. and Kwango on Ubangi R.; Panga on Aruwimi R.; Pompari; Mahagi; Lufungula; Irumu; Ambelokudi; Dungu; Faradje; Poko; Oka; Yei); 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 94. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 562. LYNES AND SCLATER, 1934, Ibis, p. 34 (Boma; Matadi). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 123 (Mahagi Port). BOUET, 1942, Ois. Rev. Française Ornith., new ser., vol. 12, p. 49.

Cisticola rufa brachyptera SCHOUTEDEN, 1924, Rev. Zool. Africaine, vol. 12, p. 270 (Kisantu); 1925, idem, vol. 13, p. 15 (Bolobo).

SPECIMENS: Bolobo, two males, December 18. Pawa, male, October 18. Niangara, male, May 28. Dungu, immature male, January 27. Faradje, three males, May 13, 14; immature male, December 6; female, November 22.

ADULTS OF BOTH SEXES: Iris light brown; maxilla blackish brown, mandible pinkish with dusky tip; feet light buff.

DISTRIBUTION OF THE SPECIES: Senegal to the Bahr-el-Ghazal and Eritrea, and south to the highlands of Angola, Melsetter in Southern Rhodesia, and Beira in Portuguese East Africa, but it is absent from the equatorial rain forests and many arid districts in eastern Africa.

Nine races were admitted by Lynes, of which four occupy parts of the Congo. *C. b. brachyptera*, a rather grayish brown form, ranges from Senegal to Tonga on the White Nile and the vicinity of the Bahr-el-Jebel. It reappears in the region of the Lower Congo. *C. b. hypoxantha*, with a little more dark mottling on the back, is the bird of northern and central Uganda to the base of Mt. Elgon and the Kavirondo District. *C. b. kericho* Lynes, with exceptionally large outermost primary, is known only from the vicinity of Kericho in southwestern Kenya Colony.

Cisticola brachyptera zedlitzi Reichenow, of southern Eritrea and

the less arid parts of Abyssinia, is a rather large bird with rusty crown and some dark striping on back, still more striped above in the dry season. *C. b. katonae* Madarász, of the Kenya highlands and Kilimanjaro district, is like the preceding race, but "perennial" in dress, with well-striped back. *C. b. reichenowi* Mearns, from lower Juba River and eastern Kenya Colony, is a smaller, perennial-dressed race, colored rather like *katonae*.

Cisticola brachyptera ankole, a brownish race with only very diffuse striping on the back in adults and no seasonal change, occupies southwestern Uganda, the Kivu District, and northwestern Tanganyika Territory. *C. b. loanda* of Angola, from much of the southern Congo and Northern Rhodesia, is a small, plain, brownish race, with a distinct dry-season plumage that has but faint striping on the back. *C. b. isabellina* Reichenow, likewise with yellowish brown crown and back somewhat striped in dry season, ranges from central Tanganyika and Nyasaland to Portuguese East Africa.

In brief, the species shows a tendency to grayness with rather plain back in the north and west, a more heavily striped back in the east, and generally browner coloration in the south. In equatorial latitudes the adults have only a single style of plumage.

The nominate race, *brachyptera*, occupies the northern grasslands of the Congo, right up to the edge of solid forest, and eastward to the Uganda frontier. It is surprising, too, that it is found south of the forest belt in the French Congo, near the Congo mouth, and up the Congo to Bolobo. Yet it is never seen in clearings in the equatorial forest; I feel that the supposed record from Panga must be erroneous. Schubotz took specimens at Duma on the Ubangi and Angu on the Uelle. Boyd Alexander likewise collected it along the Ubangi.

From Pawa to the northern border of the Upper Uelle District it is one of the common grass warblers, silent during the drought but heard on all sides during the wetter part of the year. From some slightly elevated perch, such as a small tree or a stalk of grass on the top of a termite hill, the male bird sings in a weak, high-pitched voice. His monotonous "wee-tree wee-tree wee-tree. . ." is repeated continuously. From the weather conditions while they sang, I often thought it would be better remembered by the words "wet-feet."

Frequently, too, they fly aloft, sometimes in a wide spiral,

progressing slowly and making no sound with either wings or throat. Then they may come shooting down from a height of 100 feet with a loud swish of wings. Once I watched one dart vertically downward from a height of 70 feet and turn up again as in a letter U or J. A native fable among the Mangbetu relates that the bird is feared by elephants because of a fatal accident to one of their kind. Hearing the swish of the descending bird, the elephant raised its trunk. The tiny *tîtî*, as the bird is called, shot into the open nostril and pierced the brain, with mortal result to the elephant.

The breeding season in the Uelle lasts from the middle of May to the beginning of December; and south of the forest, on the middle and lower Congo, it is reversed. A nest found at Faradje on November 22 was relatively large and spherical, with lateral entrance. Composed of strips of dry grass, lined with plant down, it was attached by strands of silk to a green herbaceous plant and some neighboring grasses at a height of 2 feet. The leaves were too small to give protection from rain. The two eggs were pinkish white (white when blown), with fine rufous specks forming a wreath about the larger end. The nest was well concealed in the grass (*Imperata cylindrica*), the female bird incubating. Neither she nor her mate made any sound near the nest. Females of this small bird are adept at escaping observation. The food observed in four stomachs consisted entirely of insects and included three small grasshoppers.

Nests similar to the above have been found in Nigeria between early June and October 22.[1] All were placed in grass tufts between a few inches and 3 feet above the ground, the sets usually consisting of three eggs. These were either white or very pale bluish or bluish green, with spots of varying size pale orange-brown, reddish brown, or still deeper. The markings were apt to be thickest around the blunt end. Measurements were 14.25–15.9 mm. by 11–11.75.

Cisticola brachyptera hypoxantha Hartlaub

Cisticola hypoxantha HARTLAUB, 1880, Proc. Zool. Soc. London, p. 624 (type locality: Magungo on lower Victoria Nile).

Cisticola katonae SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 297 (Irumu).

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[1] Shuel, 1938, Ibis, p. 239. Serle, 1940, Ibis, p. 15. Marchant, 1942, Ibis, p. 175.

Cisticola rufa subsp. HARTERT, 1920, Novitates Zool., vol. 27, p. 467.

Cisticola brachyptera brachyptera GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 128 (Tabaro; Irumu; Kunabo; Malabo).

Cisticola brachyptera hypoxantha LYNES, 1930, Ibis, Cisticola Supplement, pp. 21, 474, 476, 637 (Arua; Mahagi).

DISTRIBUTION: Northern Uganda, from the Eastern Province and Elgon to Lake Albert, perhaps also the grasslands of the eastern Ituri. From the vicinity of Mahagi Lynes reported both *brachyptera* and *hypoxantha*, and it is not likely that specimens from Magungo differ much from those of Mahagi.

Although I shall call the birds living just west of Lake Albert *hypoxantha*, I am not certain that they differ sufficiently from nominate *brachyptera*. The species is common on the Lendu Plateau at Bogoro and also at Irumu, behaving exactly as in the Uelle, but I did not see it down on the lake shore at Kasenyi. This race is supposedly a trifle larger and more mottled on the back than *brachyptera*.

Cisticola brachyptera ankole Lynes

Cisticola brachyptera ankole LYNES, 1930, Ibis, Cisticola Supplement, pp. 22, 489, 491, 617, pl. 16, fig. 68 (type locality: Lutoto, Ankole District, Uganda; also from Kasenyi in Toro; Lubilia Valley; Kigezi). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 100 (L. Bunyoni; L. Edward).

Cisticola rufa REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 567 (in part. Karevia); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 358 (northwest of L. Tanganyika). O.-GRANT, 1908, Ibis, p. 296 (north and northwest of L. Tanganyika; east of Kasongo); 1910, Trans. Zool. Soc. London, vol. 19, p. 347 (Fort Portal, 5000 ft.; Mokia). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 296 (Uvira; Usumbura). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 290 (Lufungula). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 127 (Kibati).

Cisticola rufa subsp. VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 209. SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 80.

Cisticola brachyptera loanda LYNES, 1930, Ibis, Cisticola Supplement, pp. 486, 489 (in part. Ruzizi R.; Kisaka; Ngoma; Ukondju; Biogo). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 100 (Mugunga; Rutshuru).

Cisticola brachyptera loandae SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 311.

Cisticola brachyptera SCHOUTEDEN, 1935, Rev. Zool. Bot. Africaines, vol. 27, p. 402 (Katana on L. Kivu).

Neocisticola brachyptera HENDRICKX, 1944, Ostrich, vol. 15, p. 197 (southwest of L. Kivu).

DISTRIBUTION: Southwestern Uganda to Karagwe, the Kivu District, and the north end of Lake Tanganyika. This is a rather brownish race, as compared with *brachyptera*, and while it may become slightly grayish as a result of plumage wear, it has no distinct dry-season dress. Even the young show only a trace of darker streaking on the back.

It occupies the grasslands around Lake Edward and up to Karebumba, at 4800 feet, south of Beni and to Luofu at 5300 feet. Reported from the shores of Lake Kivu and still higher at Kibati, it is common even in the "Red-hot Poker Valley" at 7900 feet, between Behungi and Lake Bunyoni in British Ruanda. There it lives in a cool marsh amid tussocks of sedges and grasses, flowering kniphofias, and tall lobelias.

The more usual habitat is in bushy savannas with fairly high grass at lower levels. The behavior is like that of *C. b. brachyptera*, with occasional spiraling up into the air, and no wing snapping. The breeding season is not easy to understand and probably coincides with the rainy periods wherever the birds happen to live.

The brownish birds of the lower Ruzizi Valley, the northeastern shore of Tanganyika, and the country near Baraka may show a transition from *ankole* to the southern race *loanda*. As Lynes explained, it is hard to know where to draw the lines of demarcation, and he believed that birds from the vicinity of Lake Edward showed some affinity to *C. b. loanda*.

Cisticola brachyptera loanda Lynes

Cisticola brachyptera loanda LYNES, 1930, Ibis, Cisticola Supplement, pp. 22, 486, 643, pl. 16, fig. 69 (type locality: Lepe, Benguella District, Angola; also from Fort Don Carlos; Luluabourg; Lusambo; Kinda; upper Lufira R.; Bunkeya R.; Kabengere; Kabalo; Tembwe); 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 93 (Nasondoye; Kamina; Kapanga; Kilembe; Banda; Idiofa; Luebo; Petianga; L. Mukamba). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 563. LYNES AND SCLATER, 1934, Ibis, p. 33 (Elisabethville; Tenki). GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 187.

Cisticola ferruginea REICHENOW, 1887, Jour. Ornith., p. 309 (Kasongo).

Cisticola rufa REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 567 (in part. Kasongo). SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 337 (Luebo; Macaco; Kamaiembi; Belenge; Kabambaie; Tshikapa; Tshisika; Ngombe in Kasai).

Neocisticola brachyptera PAGET-WILKES, 1926, South African Jour. Nat. Hist., vol. 6, p. 64 (upper Kafue R.).

Cisticola brachyptera loandae SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 285 (Elisabethville).

Cisticola brachyptera LYNES AND SCLATER, 1933, Ibis, pl. 24, map (Luapula R. west to Dilolo).

Cysticola brachyptera loandae VERHEYEN, 1941, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 17, no. 16, p. 5 (Kiambi).

DISTRIBUTION: Central and northern Angola but not on the coast, the major part of the southern Congo, and the neighboring areas of Northern Rhodesia. Within our limits it appears to range from the southern Kwango District across the whole Kasai to Lusambo, the Manyema, Marungu, and the Katanga. Specimens from the region between Baraka and Kasongo must have puzzled Lynes. He first marked many of them, collected by Grauer, as *ankole*, and yet he listed them in 1930 under *loanda*. But in spite of the intergradation which he emphasized, I believe the range of *loanda* should not be extended into the Kivu District. The change from *loanda* to *isabellina*, Lynes believed, must take place near Lake Tanganyika and in Northern Rhodesia.

Like *brachyptera* in the north, *loanda* occupies the grasslands right in to the edge of the forest belt. It does not shun the highlands, and in the open Marungu it was collected by Rockefe ler and Murphy at Baudouinville, Mlonde, Mukuli, Lubenga, Kasoko, Kakonde, and Ketendwe. The last two localities are 6000 feet above sea level.

Although the adults molt into a new dry-season plumage after breeding, this is not perceptibly streaked on the back, nor are the yellowish-breasted young noticeably striped above. The breeding season in the southern Congo begins in October and may last until June. The singing and spiraling of the males at that time are like those of the northern race; no wing snaps are produced. During the dry season the birds are extremely silent.

Nests found by Lynes and Vincent contained two and three eggs, either white or pale greenish blue, finely marked with rusty reds in considerable variety of pattern and hue; average size was 15.8 by 11.6 mm.

Cisticola troglodytes troglodytes (Antinori)

Drymoica troglodytes ANTINORI, 1864, Catalogo descrittivo, p. 38 (type locality: Djur, Bahr-el-Ghazal Province).

Cisticola ferruginea DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (in part. "Ituri").

Cisticola troglodytes troglodytes SCLATER AND M.-PRAED, 1918, Ibis, p. 653 ("upper Uelle River"). GROTE, 1924, Jour. Ornith., p. 499 (Nola-Mbaiki). LYNES, 1930, Ibis, Cisticola Supplement, pp. 22, 498, 501, 669, pl. 16, fig. 71 (Mahagi Port; Rhino camp; Kajo-Kaji; Wau). BOWEN, 1931, Catalogue of Sudan birds, vol. 2, p. 43. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 123. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 203, fig. 33.

DISTRIBUTION OF THE SPECIES: From Bozum in the western Ubangi-Shari to western and southern Abyssinia, southward to Lake Albert and the Cherangani district of Kenya Colony. *C. t. troglodytes* occupies the greater part of this area, from French Equatorial Africa to northwest Kenya Colony and the Nuba Mountains, while *C. t. ferruginea* Heuglin, a little larger and less rufous throughout, is restricted to the Blue Nile and parts of Abyssinia.

Although *C. t. troglodytes* has been reported from the region of Mbaiki, just north of the solid forest near Bangui, this warbler seems usually to avoid the grasslands bordering on the forest, and I can find no reliable record from the savannas of the Ubangi or the Uelle within the boundaries of the Belgian colony.

The name *ferruginea* was formerly applied erroneously to other very different species of this genus, and only the specimen reported by Dubois from the "Ituri" really belonged to the present species. It was contained in a collection made by Millo-Ribotti, and I am convinced that it was obtained in the Lado Enclave.

The only authentic specimens from Congo territory are two males secured by C. F. Camburn in the vicinity of Mahagi in 1906, and several more subsequently collected near Mahagi Port by Schouteden and by Vrydagh. This seems to be a common bird along the Bahr-el-Jebel, and it occupies the eastern shore of Lake Albert at least to Butiaba. Lynes found it rather locally distributed to the west of the Bahr-el-Jebel, living as much in the trees as in the grass. Almost the only sound it made was an occasional song call by a male up on a small tree top, wispy little notes of the "tsee tsee" type. Breeding is believed to take place during the rains, but the nest is unknown.

Cisticola rufa (Fraser), which looks so like a duller, browner race of the same group as *C. troglodytes*, is not expected to reach the grasslands of the northwestern Congo. It ranges from the Shari River in French Equatorial Africa to the Gambia and is said to occur with *troglodytes* on the Shari River.

Cisticola juncidis perennia Lynes

Cisticola juncidis perennia LYNES, 1930, Ibis, Cisticola Supplement, pp. 14, 105, 108, 655 (type locality: Mokia, western Uganda; also from Katwe; Vitshumbi; Kabare; Kasenyi; Arua). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 547 ("Ruwenzori"). HARTERT AND STEINBACHER, 1934, Die Vögel der paläarktischen Fauna, suppl. vol., p. 282 ("upper Uelle and Ituri districts"). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 122; 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 99 (Katanda); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 337 (Kibingo). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 196 ("Uelle district"). JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 1091.

Cisticola terrestris O.-GRANT, 1908, Ibis, p. 296 (north of L. Tanganyika, 3000 ft.); 1910, Trans. Zool. Soc. London, vol. 19, p. 347 (Mokia).

Cisticola cisticola uropygialis REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 356. GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 126 (Kabare).

? *Cisticola ayresii* EMIN, *in* Stuhlmann, 1927, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 128 (Tunguru on L. Albert).

? *Cisticola podopygia* EMIN, *in* Stuhlmann, 1927, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 128 (Tunguru).

? *Cisticola ayersii entebbe* SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 122.

DISTRIBUTION OF THE SPECIES: From Portugal to China and Japan, the Sunda Islands and northern Australia; also over a large part of the African continent, south to the Albany District of Cape Province, but not in the equatorial forest region.

Lynes (1930) recognized 13 subspecies, of which only three occur in tropical Africa, and I restrict my discussion to these three. *C. j. uropygialis* (Fraser) ranges from Senegal across the Sudan to Abyssinia and southwestern Arabia. It is a rather bright, sandy race with distinct plumage change in the dry season. *C. j. perennia* is not very different from the preceding in breeding plumage, but adults molt only once a year and keep that same style of dress. It is known to occur from the valley of the Bahr-el-Jebel, Lake Albert, and the lowlands near Lake Edward to the coast of Kenya Colony, northern Tanganyika Territory, Zanzibar, and Pemba Island.

Cisticola juncidis terrestris (Smith) is somewhat darker than either of the foregoing, and has a distinct dry-season plumage, at least to the south of latitude 6° S. This southern subspecies is widely distributed in South Africa and comes northward to the Gaboon, the Kasai, the Ruzizi Valley, and Urundi. I do not find that birds from the Gaboon or Lower Congo show any approach

to *uropygialis*, nor do I think the ranges of *terrestris* and *uropygialis* meet anywhere in West Africa. The forested Cameroon appears to form a complete barrier.

In the case of *perennia* in eastern Africa, there may be complete intergradation with the races to the north and to the south. Moreover, on Pemba Island *C. j. perennia* has a dark erythristic color-phase which interbreeds freely with the "normal" phase.[1]

The race *perennia* in the eastern Congo occupies the grassy lowlands about Lake Albert and Lake Edward, south to the Rutshuru Plain. It probably occupies the Kagera Valley but has not been taken in the highlands near Lake Kivu. Neither has it ever been found in the Uelle District where I searched diligently for it, although it is known from Arua, just across the boundary in the Nile Province of Uganda. Along the western shore of Lake Albert this fantail warbler is very common, but I never saw it above the escarpment to the west. It lives at Kasenyi in grass of moderate height, which would not suit any of the true "cloud-scrapers," yet on the plains north of Lake Edward one finds it in the same localities as *C. ayresii entebbe*. Their behavior at first seems much the same, but the male of *C. juncidis* indulges in no very high cruising flights, and its squeaky voice is accompanied by no loud wing snapping. I have, however, noticed it giving a few loud wing beats as it flew over the grass, annoyed perhaps by my intrusion. In the lower leg of *juncidis* there are no ossified tendons such are found in *C. ayresii*.

At Kasenyi I believed nesting had begun before the middle of August, and at Butiaba, across the lake, Pitman in that same month collected sets of three and of four eggs. One set was pale turquoise-blue finely speckled with dark rust-red; the other white with spotting of rust-red, reddish brown, and a little gray. The average size of the seven eggs was 14.4 by 10.8 mm. The nest of this species, according to Lynes, is always of the deep "soda-bottle" type, opening directly skyward, and woven of cobwebs between upright green grass blades. There may be some dead grass in the base; the lining is of plant down.

Cisticola juncidis terrestris (Smith)

Drymoica terrestris A. SMITH, 1842, Illustrations of the zoology of South Africa, Aves, pl. 74, fig. 2 (type locality: near Kurrichane, British Bechuanaland).

[1] Pakenham, 1939, Ibis, pp. 547, 548; 1943, idem, pp. 185–187.

Cisticola cisticola SHARPE, 1883, Catalogue of the birds in the British Museum, vol. 7, p. 259 (Nimboo = Nemlao ?).

Cisticola terrestris NEAVE, 1910, Ibis, p. 146 (in part. Kalungwisi R.; Mansya R.).

Cisticola cisticola uropygialis BERLIOZ, 1925, Bull. Mus. Hist. Nat. Paris, vol. 31, p. 350 (Luluabourg). SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 198 (Moanda; Vista; Banana). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 148 (in part. Mouth of Congo R.).

Cisticola juncidis terrestris LYNES, 1930, Ibis, Cisticola Supplement, pp. 14, 108, 111, 667, pl. 1 (Kalungwisi R.; Baraka; Usumbura; Ruzizi Valley; Lakama in southern Kwango District; Lusambo); 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 84 (Elisabethville; upper Lufira R.; Kayoyo; Sandoa; Dibaya; Banda; Petianga; Leopoldville; L. Mukamba). HARTERT AND STEINBACHER, 1934, Die Vögel der paläarktischen Fauna, suppl. vol., p. 282. LYNES AND SCLATER, 1934, Ibis, p. 20 (Nasondoye).

Cisticola juncidis LYNES AND SCLATER, 1933, Ibis, p. 723, pl. 24, map; pl. 28, photograph 22.

SPECIMEN: Boma, female, January 2.

ADULTS: Iris rather light brown; bill dusky brown above, pale flesh-color below; feet pinkish buff.

DISTRIBUTION: Cape Province, except extreme south and southwest, north to Nyasaland, northeastern Rhodesia, the Ruzizi Valley, Kasai, Lower Congo, and Gaboon; also in Damaraland and Angola. On the north its range is limited by the equatorial forest and the highlands of the Kivu area; it seems scarcely at home above 4000 feet.

In the Lower Congo this fantail warbler is common in relatively dry grasslands, where *Cisticola brachyptera* is also found. Near Kinshasa I have seen it in a broad marshy plain, and in the Kasai District it is of frequent occurrence. In the lower Ruzizi Valley it is as characteristic a bird as is *perennia* on Lake Albert, and examples in the streaked plumage from these two areas look very much the same. Even in breeding dress they do not differ greatly.

Across the southern Congo the breeding season begins about September and may continue until March; at Port Gentil in the Gaboon Lynes found a nest even in May. The nest is of course of the "soda-bottle" type, and eggs number three or four, possibly sometimes five. These are either white or light blue, with markings of reddish or brown and a few secondary grays; average dimensions are 15.2 by 11.3 mm.

[*Cisticola juncidis uropygialis* (Fraser)]

Drymoica uropygialis FRASER, 1843, Proc. Zool. Soc. London, p. 17 (type locality: Accra, Gold Coast).

Cisticola juncidis uropygialis LYNES, 1930, Ibis, Cisticola Supplement, pp. 14, 102, 104, 670 (Busso on Shari R.). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 148, fig. 25 (in part. Ubangi-Shari).

This light-colored Sudanese race is not believed to range southward into the northern Congo. Except in Upper Guinea, it does not approach the equatorial forest as closely as *terrestris* does on the south. Yet birds from the upper Bahr-el-Jebel may prove to be more like *uropygialis* than Lynes believed, and perhaps they do have a distinct dry-season plumage.

[*Cisticola aridula tanganyika* Lynes]

Cisticola aridula tanganyika LYNES, 1930, Ibis, Cisticola Supplement, p. 126 (type locality: Morogoro, Tanganyika Territory).

Cisticola terrestris NEAVE, 1910, Ibis, p. 146 (in part. Lower Chambezi Valley).

Cisticola aridula lobito LYNES, 1930, Ibis, Cisticola Supplement, p. 125 (in part. Chambezi Valley).

Cisticola aridula "darkest race" LYNES AND SCLATER, 1934, Ibis, p. 20 (Mocussueze in northeastern Angola).

Cisticola aridula nr. *tanganyika* LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 85 (Missão de Luz, Angola).

The range of this species encircles a large part of the Congo, from the upper Niger River to the White Nile, then southward through eastern Africa to northeastern Cape Province, and westward to Damaraland and Angola. But it prefers grasslands that are drier than most of those in the Congo and thus far has not been discovered within our limits.

In more ways than one, *C. aridula* seems intermediate between *C. juncidis* and the "cloud-scrapers" like *C. ayresii*. On its breeding grounds it is sure to be noticed because of its habit of flying about over the grass, or even up to 30 and 40 yards in the air, snapping its wings for short spells (though not so loudly as *ayresii*) or else giving a weak, whistled "pee-pee-pee-pee" four to six times in succession. The males may perch on grass stalks, bushes, or even boughs of small trees, but more often hide in the grass. Of the five races now recognized, *C. a. aridula* Witherby occupies the arid belt of the Sudan and does not approach the northern Congo. *C. a. tanganyika*, on the other hand, extends from southern Kenya Colony and Tanganyika Territory to the Chambezi Valley east of Lake Bangweolo and to Missão de Luz in Angola.[1] With such a distribution, this rather dark race is very

[1] Because of slight differences in the off-season dress, White (1947, Ostrich, vol. 18, p. 174) proposes the name *perplexa* for Northern Rhodesian birds.

likely to occur somewhere in the southeastern corner of the Congo.

Cisticola aridula lobito Lynes is slightly lighter in color and apparently restricted to the coast of Angola. It is known to range northward to St. Paul de Loanda, but we cannot say that it is to be expected near the Congo mouth. *Cisticola aridula* seems to have no ossification of the tendons in the lower leg; at least I noted none in *C. a. tanganyika* in Kenya Colony.

Cisticola eximia eximia (Heuglin)

Drymoeca eximia HEUGLIN, 1869, Ibis, p. 106, pl. 3, fig. 3 (type locality: Bahr-el-Ghazal).

Cisticola eximia eximia LYNES, 1930, Ibis, Cisticola Supplement, pp. 15, 174, 178, 631, pl. 7, fig. 20 (Amadi on Uelle R.). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 550. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 122. JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 1096.

DISTRIBUTION OF THE SPECIES: Eritrea and Abyssinia, west to Portuguese Guinea and south to Uganda and North Kavirondo. *C. e. exima* occupies all the eastern regions, as far westward perhaps as the Shari Basin. *C. e. occidens* Lynes, from Nigeria to Bissao, Portuguese Guinea, is little different in breeding dress but distinctly more rufous above in dry-season plumage. *C. e. winneba* Lynes[1] is a very pale form of the species known only from the dry eastern section of the Gold Coast.

This small "cloud-scraper" is so like *C. ayresii* that it used to be regarded as a northern race of that species, then usually called *terrestris*. It is of Sudanese distribution, scarcely reaching the northern Congo savannas. Indeed it would still be unknown there if Schubotz had not collected a single male at Amadi on the Uelle River in July, 1911.

The skin went to the Frankfurt Museum, where I noticed it in 1921, and later I called the attention of Lynes to it, because I had never seen any such grass warbler during my stay in the Uelle. He borrowed it and determined it as *C. e. eximia* in breeding plumage. The whole top of the male's head in that dress is uniform brown or rufous, the back mottled with blackish and buffy brown, the rump rust-red. In dry-season plumage the adults are all streaked and mottled above, with only the rump and upper tail-coverts still rufous.

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[1] 1931, Bull. Brit. Ornith. Club, vol. 52, p. 10 (Winneba, Gold Coast).

The localized distribution of *C. eximia* is due to its preference for short-grass meadows, sometimes near rivers and marshes, but not always flooded, even during the rains. I see no reason why it should not be found at other places in the northern grasslands of the Congo.

Breeding takes place from June to September, and at that season the males make high cruising flights at about 200 feet in very wide circles, lasting two or more minutes. During the climb there are vocal notes in an excited medley. A vocal "chickle" continues during the circling, accompanied by the snapping of wings. The dive to earth is headlong, accompanied by a vocal "twee, twee," and the whirr of descent is audible for 50 yards. Near the ground the bird may shoot up again 20 yards, then it descends and settles.[1]

The nest is pear-shaped, placed vertically in a tuft of grass or rush, with entrance at one side of the top. It is a thin structure of dried grass and spider silk, lined with spiderweb and plant down. Neighboring grass blades or rushes are drawn together above the nest and aid in concealment. Eggs are two or three, pure white or white with purplish brown markings and small red-brown spots, averaging 16.0 by 11.4 mm. in dimensions.

Cisticola dambo dambo Lynes

Cisticola dambo LYNES, 1931, Bull. Brit. Ornith Club, vol. 52, p. 5 (type locality: Nasondoye, southern Belgian Congo). LYNES AND SCLATER, 1933, Ibis, pp. 723, 724, pl. 24, map; pl. 28, photographs 21, 22 (Lufupa R. to Dilolo); 1934, Ibis, pp. 5, 22 (Kayoyo; Dilolo; Marungu).

Cisticola dambo dambo LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 86 (Kamina).

DISTRIBUTION OF THE SPECIES: From the Marungu highlands to those of the Katanga, then westward to Missão de Luz in Angola and northwestward to Banda in the Kasai. It is a "cloud-scraper," but with unusually long, blackish tail. *C. d. dambo* lives in the highlands of the southeastern Congo and the adjacent part of Angola. *C. d. kasai* is still known only from the Kasai District, and is brighter rusty buff below, with narrower black feather centers above, and rustier tips to its tail quills.

In the Katanga and Angola Lynes and Vincent found *C. d. dambo* living on open, short grass flats at altitudes from 3400 to 3700

[1] From Cheesman, 1935, Ibis, pp. 616, 617.

feet. In April 1929 Rockefeller and Murphy secured a male in breeding condition and an immature female at Kakonde, 6000 feet, in the southern Marungu. Admiral Lynes compared them with Katanga specimens and found no difference.

The Marungu birds were collected on an open grassy plain. Lynes found others at several localities near the southern edge of the Congo, where they occupied suitable damp meadows or "dambos," with or near *C. ayresii*, *C. brunnescens*, and other small species of the genus. He noted that *dambo* could readily be distinguished in life by the characteristic song and aerial antics of the male, but I find no detailed description of them. The tendons along the lower tibia are not ossified or stiffened as they invariably are in *C. ayresii* and probably are in *C. brunnescens*.

During July, August, and September the birds are in streaky off-season dress, with tails about 3 mm. longer than in December and January, while breeding. The nest is of typical "cloud-scraper" type, low in the grass; eggs number two to three. The only egg of this race described by Lynes was medium turquoise-blue, very finely speckled with faint claret-red, measuring 15.5 by 12.0 mm. Some variation in color may be expected.

Cisticola dambo kasai Lynes

Cisticola dambo kasai LYNES, 1936, Bull. Brit. Ornith. Club, vol. 52, p. 109 (type locality: Banda, northwest Kasai District, Belgian Congo); 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 86.

DISTRIBUTION: Known only from the short grass "pastures" or "dambos" in the vicinity of Banda. These represent a kind of country which is rather unusual in the inner Congo basin, though other such areas are likely to be discovered.

In behavior the Kasai race is exactly similar to that of the Katanga. Nests and eggs were found in mid-October. Sets consisted of two, or occasionally three eggs, light to pale turquoise-blue; the markings varied from rather boldly spotted to only faintly stippled with various reds, browns, or slates. Dimensions are 14.6–15.8 mm. by 11.2–11.8.

Cisticola brunnescens cinnamomea Reichenow

Cisticola cinnamomea REICHENOW, 1904, Ornith. Monatsber., p. 28 (type locality: Ngomingi, Iringa district, Tanganyika Territory).

Cisticola terrestris NEAVE, 1910, Ibis, p. 146 (in part. Machinga Plateau in

Kalungwisi district; Lake Young). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 356 (in part. Northwest of L. Tanganyika).

Cisticola brunnescens cinnamomea LYNES, 1930, Ibis, Cisticola Supplement, pp. 15, 171, 172, 625 (Kalungwisi R.; west of Baraka at 7500 ft.); 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 86. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 550. LYNES AND SCLATER, 1934, Ibis, p. 22 (Elisabethville; Kayoyo).

? *Cisticola ayresii entebbe* LYNES, 1930, Ibis, Cisticola Supplement, pp. 154, 156 (in part. Near Lemera, 6800 ft.).

Cisticola brunnescens LYNES AND SCLATER, 1933, Ibis, p. 720, pl. 24, map, pl. 26, photograph 11 (L. Bangweolo).

DISTRIBUTION OF THE SPECIES: Eritrea and Abyssinia through eastern Africa to the Transvaal and Natal, also in the Cameroon highlands and the grasslands near Bolobo on the middle Congo.

Cisticola b. brunnescens Heuglin, of Eritrea, Abyssinia, and western Somaliland, is a rather large race with well-marked seasonal change in plumage. *C. b. wambera* Lynes, more deeply colored, is known only from the Wambera Plateau at 7000 to 8000 feet in southwestern Abyssinia. *C. b. lynesii* Bates of the Cameroon highlands, at 5600 to 6500 feet, is likewise darker and slightly smaller.

Cisticola brunnescens nakuruensis Van Someren has a "perennial" dress with pattern less boldly contrasted than nominate *brunnescens*. It occupies the highlands of Kenya Colony from Londiani to Laikipia and Kikuyu. *C. b. hindii* Sharpe is paler, is likewise "perennial," and lives to the eastward of *nakuruensis*, from Nairobi to Machakos and Simba.

Cisticola brunnescens cinnamomea is a richly colored race extending from the region of Iringa in Tanganyika Territory to the highlands northwest of Lake Tanganyika, the Upper Katanga, and the Benguella Plateau. It appears to have regular "seasonal" plumages. *C. b. egregia* (Roberts) is again lighter, more like nominate *brunnescens*, though with colors less contrasting; it occupies the eastern Transvaal, Zululand, and Natal.

Cisticola brunnescens cinnamomea was found in the region east of Lake Bangweolo by Neave, who called it *terrestris*. Lynes subsequently met with it near Elisabethville and Kayoyo in the Congo, and Mocussueze and Huambo in Angola. About five other specimens, all in immature plumage, had been taken by Grauer in the highland northwest of Baraka, and they were identified as *cinnamomea* by Lynes. Three of these, in the Rothschild Collection, are labeled as coming from 120 kilometers west

of Lake Tanganyika, in grassland at 7500 feet. They were collected in July, and are rather yellowish on the breast.

In July, 1929, at 9000 feet near the top of Mt. Kandashomwa, west of the Ruzizi Valley, Rockefeller and Murphy secured two specimens of this same bird in what seems to be the adult off-season plumage. So far as I can determine, they are like *C. b. cinnamomea*, but are dull and dark in color. Two years earlier, at 6800 feet on the eastern slope of Kandashomwa above Lemera, I collected a subadult male which was listed by Lynes among the specimens he had seen of *C. ayresii entebbe*. I now believe that bird to belong also with *C. brunnescens* because of its large outermost primary and long metatarsus.

In the off season there is no perceptible difference in behavior between this species and *C. ayresii*. On Kandashomwa we found *brunnescens* living in fields of short grass, both high up and on the eastern slope. According to Lynes, *C. b. cinnamomea* is more partial to moist or wet ground in the Njombe highlands and Katanga, and it can usually be distinguished when breeding by the somewhat different display flight of the male. His high-pitched note is repeated continuously throughout the cruising flight, once he has gained a little altitude, so that the wing snaps, if given, do not alternate with the song but accompany it. The rapid descent is accompanied by a rapid chatter but no wing snaps.

Breeding occurs in the southeastern Congo between November and January. The nest is of ball type, presumably with green grass blades drawn in over it, close to the ground. Eggs number two or three, and are either white or blue, always finely stippled with dull red or purplish gray, or a combination thereof. Average dimensions are 14.9 by 11.0 mm.

Cisticola brunnescens midcongo Lynes

Cisticola brunnescens midcongo LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 182 (type locality: Kunungu, 12 miles east of Bolobo, on middle Congo R.). SCHOUTEDEN, 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 35 (region of Bolobo).

Cisticola brunnescens LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 92.

DISTRIBUTION: Known thus far only from Kunungu, where Schouteden's native collectors secured eight specimens for the Congo Museum. Of these, four were adult males, and they show

that while resembling the race *cinnamomea* in the heavy black markings of the back, *midcongo* differs in the clearer, brighter rust-red crown of breeding males. Adults seem to have no distinct off-season dress.

Adult males of *C. b. midcongo* have wings 50–52 mm., tails 30–32, while the males of *C. ayresii gabun*, known also to occur at Kunungu, have the wing 46 or 47 mm., tail in breeding dress around 21 mm.

The altitude at Kunungu cannot be much over 1600 feet, and similar conditions must be found in the vicinity of the Kwango River, possibly even in the French Congo, so other colonies of this race will certainly be discovered.

Cisticola ayresii ayresii Hartlaub

Cisticola ayresii HARTLAUB, 1863, Ibis, p. 325, pl. 8, fig. 2 (type locality: Natal). LYNES AND SCLATER, 1933, Ibis, p. 724, pl. 24, map (west of Tenki).

Cisticola ayresii ayresii LYNES AND SCLATER, 1934, Ibis, p. 21 (Biano Plateau). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 85 (Missão de Luz). WHITE, 1946, Ibis, p. 510 (Luakera R. plain near Mwinilunga).

DISTRIBUTION OF THE SPECIES: Eastern Cape Province and Natal north to Kenya Colony, the Imatong Mountains in southern Sudan, eastern and southern Belgian Congo, Angola, and the Gaboon coast. *C. a. ayresii*, the South African race, ranges northward to the plateau of Benguella, the Biano Plateau in the Katanga, and the highlands of southern Tanganyika Territory. *C. a. mauensis* Van Someren, of deeper coloration and without seasonal change of color, is the form inhabiting the highlands of Kenya Colony. *C. a. entebbe*, smaller and lighter than nominate *ayresii*, and without seasonal change, is resident in Uganda and the grasslands of the eastern Congo border from near Lake Albert south to Ruanda. *C. a. imatong* Cave[1] is a larger form, more deeply colored even then *mauensis*, and restricted to the higher levels of the Imatong Mountains. *C. a. gabun* is a lowland race of the Gaboon coast and middle Congo River, small, like *entebbe*, but a little lighter above, and the crown of breeding males is clearer rust-red.

Within our limits the nominate race, *ayresii*, has been taken only on the Biano Plateau, at an elevation of about 5000 feet, by Lynes. He noted that it showed the same seasonal change

[1] 1938, Bull. Brit. Ornith. Club, vol. 59, p. 8 (Imatong Mts. at 8000 ft.).

of plumage as in more southern regions, and that it nested between December and March.

The group of small grass warblers to which *ayresii* belongs were called the "cloud-scrapers" by Lynes. It includes also *C. textrix*, *C. brunnescens*, *C. eximia*, and *C. dambo*. Two or more species of the group may sometimes be found breeding in the same place. The males of all five make cruising flights high in the air, often until out of ordinary sight, and then all but *textrix* may make snapping noises in short spells with their wings. *C. ayresii* has also a vocal song, consisting of strophes of four or six wispy, high-pitched notes, all the same, or rising about two tones. This is given during the high flight, not during the ascent, and alternates with erratic swerves and swoops accompanied by volleys of wing snaps. Finally there comes a swift descent, accompanied by a rapid, hissing chatter, and more wing snapping. Each species of "cloud-scraper" is distinguished by some peculiarity of its courtship flight.

Cisticola ayresii ayresii lives especially on open prairies with few or no trees and bushes, in the southeastern Congo only on the high plateaus. Its nest is of the ball type, hidden in a tuft of grass, on or close to the ground. The eggs are usually three or four, very variable in color, often finely speckled, and measuring 15–15.5 mm. by 11.4–11.9.

Cisticola ayresii entebbe Lynes

Cisticola ayresii entebbe LYNES, 1930, Ibis, Cisticola Supplement, pp. 15, 154, 629 (type locality: Entebbe, Uganda; also from Katwe; Kisolo; Bogoro; northwest of L. Edward; Rugege; Mt. Muhavura). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 549. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 311; 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 99. FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 271 (Ruanda; Kivu District). JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 1094.

Cisticola terrestris REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 356 (in part. North shore of L. Edward). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 296 (Kasindi).

Cisticola terrestris mauensis GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 126 (Mt. Muhavura, 2600 m.).

DISTRIBUTION: North Kavirondo, Buganda Province, and the plateau west of Lake Albert, southward to Karagwe and the highlands near Lake Kivu. But not restricted to highlands,

since it is rather common on the plains just north of Lake Edward at around 3400 feet. Elsewhere in the eastern Congo it is found here and there in spots with suitable open grasslands, mainly above 4500 feet. We collected specimens at Bogoro, on the edge of the Lendu Plateau at 4600 feet, near Mukotshi on the plateau northwest of Lake Edward around 7600 to 7800 feet, and heard a male snapping his wings repeatedly over the Kabasha Escarpment west of the Rwindi Plain at 5600 feet. This warbler was fairly common on the lava plain at 6500 feet near Kisolo in British Ruanda. It requires country with fairly short grass, though this may be mixed with low bushes or bracken, and Gyldenstolpe found it at 8500 feet on Mt. Muhavura. Other montane vegetation is not suited to its needs and I have never seen the species on the cold alpine moors.

Emin noted "*Cisticola ayresii*" at Tunguru near the north end of Lake Albert, but the absence of any later record from that shore of the lake suggests a misidentification. His "*C. podopygia*" was doubtless meant for *iodopyga* Heuglin, synonym of *C. brunnescens*. The common small *Cisticola* on the west shore of Lake Albert is *C. juncidis perennia*.

Cisticola ayresii entebbe is usually flushed from the grass singly or in small family parties. It perches occasionally on a grass stalk, a low bush, or fern, but is more apt to drop again into the herbage. Complete silence is the rule save when a breeding male indulges in his display flight. Then he becomes the noisiest small *Cisticola* I have ever known. Rising steeply without calling, he attains a height of 50 to 70 yards before beginning to circle and swoop. At this time he doubtless gives the high-pitched calls described by Lynes, though they seem to have escaped my own rather dull hearing. What impressed me was the vigor of his spells of wing snapping. They suggested the explosions of small firecrackers and burst out each time the bird turned groundward in a short swift dive. The bird might circle and dive and snap for fully five minutes before he came shooting steeply downward as though aiming at his mate in the grass. Just before hitting the ground he might turn abruptly and shoot upward again, then give another set of wing sputters as he turned over and began the final descent into the grass.

In this equatorial area it is not likely that breeding is limited to a definite half of the year. Near Katwe I collected a non-

breeding adult male in January, and two months later on the plateau northwest of Lake Edward found a pair just beginning their nesting in early March. A young bird still yellowish on throat and chest was secured in the Kigezi District in early April. There can be no doubt of their breeding toward March in the region just south of the Equator, but no proof that they may not nest also toward September-October. At Bogoro, a degree and a half north of the Equator, I did secure a female in September with ovary considerably enlarged. The nest is undoubtedly concealed low down in rather short grass, as with the nominate race, but so far it has not been found.

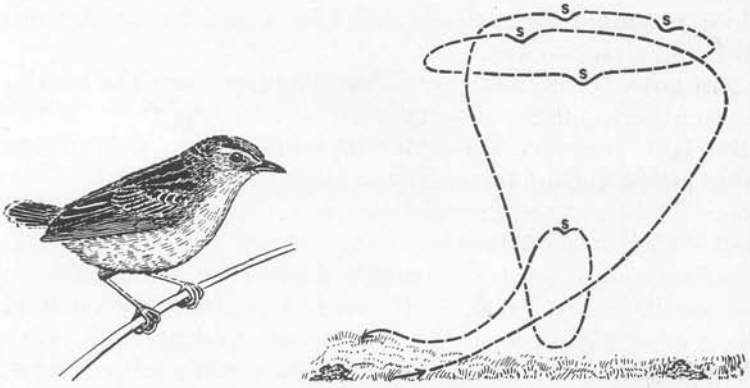

FIG. 17. Male of *Cisticola ayresii entebbe*, with diagram of one of its shorter "cruising flights." Little dips marked "s" are points where wings are snapped.

One anatomical detail of *Cisticola ayresii*, which I noted invariably in this race, even in immature birds, is the stiffening or ossification of many of the tendons along the tibia just above the heel. I believe that similar stiff tendons are present in *C. brunnescens*, but I did not find them in *C. aridula*, *C. juncidis*, or *C. brachyptera*. Lynes said they were not present in *C. dambo*, and they are certainly not developed in most other species of the genus. Ossified tendons have been noted in several species of *Bradypterus* and in *Schoenicola*, and it is well known that they distinguish the pheasant and turkey from the domestic fowl.

Cisticola ayresii gabun Lynes

Cisticola ayresii gabun LYNES, 1931, Bull. Brit. Ornith. Club, vol. 52, p. 9 (type

locality: Port Gentil, Gaboon); 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 183. LYNES AND SCLATER, 1934, Ibis, p. 22.

Cisticola terrestris SCHOUTEDEN, 1925, Rev. Zool. Africaine, vol. 13, p. 14 (Kunungu).

Cisticola ayresii ayresii LYNES, 1930, Ibis, Cisticola Supplement, pp. 15, 149, 152 (in part. "Lower Congo"; Ogowé R.).

Cisticola ayresii LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 92 (Kunungu).

DISTRIBUTION: From the coast of the Gaboon to the vicinity of Bolobo on the middle Congo. In the Rothschild Collection there was one immature specimen collected in June, 1907, by Ansorge at Umpokosa on Lake Ogemwe in the Gaboon. By 1925 the Congo Museum had received specimens from Kunungu which were referred to *"terrestris,"* as the species was then called. Lynes and Jack Vincent in April, 1931, stopped off for a few hours at Port Gentil and found a "cloud-scraper" nesting there on a short-grass sandy flat in fair numbers.

This race proved to be rather similar to *entebbe*, but the male in breeding plumage has a much more uniform rust-red crown patch. Lynes has examined the specimens from Kunungu and reported that they include both *C. ayresii gabun* and *C. brunnescens midcongo*. The Gaboon race of *ayresii* is thus to be looked for in any suitable spot with level meadows and fairly short grass between the Middle Congo and the coast. The marshy area just south of the town of Kinshasa, which becomes partially dry when the level of the Congo River has fallen, is a likely place. I know that I have seen either *ayresii* or *brunnescens* there.

[*Cisticola textrix mystica* Roberts]

Cisticola mystica ROBERTS, 1914, Jour. South African Ornith. Union, vol. 10, p. 106 (type locality: Pretoria, Transvaal).

Cisticola textrix mystica LYNES AND SCLATER, 1934, Ibis, p. 21 (Missão de Luz, Angola). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 85.

The range of this species is from southern Cape Province to the interior of Angola, but it is decidedly local, and especially characteristic of the high veld in the Orange Free State and Transvaal. *C. t. textrix* (Vieillot) of Cape Province has a spotted breast. *C. t. mystica*, extending from Orange Free State to Missão de Luz in Angola, is lighter in color above, with plain buffy breast. *C. t. bulubulu* Lynes[1] of the plateau of west-central Angola is

[1] 1931, Bull. Brit. Ornith. Club, vol. 52, p. 7 (Bihé).

darker above than *mystica*, but not spotted on breast.

Since Lynes in 1931 discovered *mystica* at Missão de Luz, about a thousand miles north and west of any previously known station, it seems quite likely that it may occur somewhere in the southern Lulua District. Missão de Luz is only about 120 miles due west of the Congo frontier near Dilolo.

Heliolais erythroptera jodoptera (Heuglin)

Drymoeca jodoptera HEUGLIN, 1864, Jour. Ornith., p. 258 (type locality: Bongo, Bahr-el-Ghazal Province).

Orthotomus erythropterus SHELLEY, 1888, Proc. Zool. Soc. London, p. 22 (Tingasi).

Dybowskia kemoensis OUSTALET, 1892, Naturaliste, ser. 2, vol. 6, p. 218 (type locality: Poste de la Haute-Kémo, Ubangi-Shari); 1893, idem, ser. 2, vol. 7, p. 127.

Heliolais erythroptera REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 570.

Heliolais erythroptera erythroptera SCLATER AND M.-PRAED, 1918, p. 645 (Meridi). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 69 (upper Kemo R.).

Heliolais erythroptera jodoptera SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 566 (Uelle R.). VINCENT, 1933, Bull. Brit. Ornith. Club, vol. 53, p. 140. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 211 (upper Sanga R.; Faradje). GRANT AND MACKWORTH-PRAED, 1941, Bull. Brit. Ornith. Club, vol. 62, p. 16.

Heliolais erythroptera iodoptera SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 123.

SPECIMENS: Niangara, female, November 10. Faradje, four males, April 2, May 3, 13; immature male, March 3; immature female, August 21.

ADULT MALE: Iris light yellowish brown; maxilla light brownish, mandible pale pink or even whitish below; feet yellowish buff, claws gray.

DISTRIBUTION OF THE SPECIES: From the Casamance River through the savannas of Upper Guinea, the Uelle District, and the southern Sudan to southern Abyssinia. Reappearing in the Kavirondo District and Usambara, it ranges southward to Nyasaland and Portuguese East Africa.

Heliolais erythroptera erythroptera (Jardine) is the Upper Guinea race, extending eastward to Nigeria. *H. e. jodoptera*, from the Cameroon grasslands to the Uelle and Bahr-el-Ghazal, is somewhat larger, with bill slightly longer and brownish even in the breeding season. *H. e. major* (Blundell and Lovat) of Abyssinia

is still larger and longer-billed. *H. e. rhodoptera* (Shelley) of eastern Africa, south to the lower Zambesi Valley and Beira, is short-billed but rather darker and more brownish above than nominate *erythroptera*. The three names *kavirondensis* Van Someren, *kirbyi* Haagner, and *castanopsis* Vincent all appear to be synonyms of *rhodoptera*. It might be expected that *H. e. rhodoptera* would reach the Katanga, but the nearest occurrence seems to be at Lundazi on the eastern side of the upper Loangwa Valley.[1]

Much confusion in the past was due to the reddish plumage this warbler always assumes after the breeding season. It is worn until the rains begin again and the birds prepare to nest. Our specimens of *jodoptera* from the Uelle are mainly in off-season dress, but the males taken in May have many new grayish feathers appearing on the crown and back. The young female taken on August 21 is in complete juvenal dress, not unlike the adult plumage, but with crown and back intermediate in grayness between the breeding and dry-season plumages, and rectrices virtually without subapical blackish markings.

In the savannas of the northern Congo this rufous-winged warbler is not at all abundant. We saw it only occasionally near Niangara and Faradje, usually in a mixed growth of grass and bushes, or where coarse grass grew beneath trees. It lives in pairs or family parties. Sometimes one bird will fly up to perch in a small tree. The song is a monotonous "cheeping" performance, loud enough to be heard for a considerable distance, and there are no doubt other weaker call notes.

One female with ovary enlarged was taken as late as November 10, but other evidence indicated nesting in July, and breeding plumage was being assumed in May. The food consists of insects, with occasional spiders. In Abyssinia the species ascends to 6000 feet, in Nyasaland to 5000, but in the Uelle there is no such elevation, and we have no record from the savannas west of Lake Albert.

The nest has been described only of the race *rhodoptera*.[2] It was woven between three large green leaves of a small shrub, at 4 feet from the ground, and composed of fine dead grass. The eggs

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[1] White, 1947, Bull. Brit. Ornith. Club, vol. 68, p. 73.

[2] See Belcher, 1930, The birds of Nyasaland, p. 245.

were two, green in color but clouded all over with confluent marks of pinkish fawn. Measurements are 17.5 by 12.5 mm.

KEY TO THE CONGO SPECIES OF *Prinia*

1. Underparts conspicuously barred with black and white.....*P. bairdii*
   Underparts not barred.....2
2. Upperparts and chest ashy gray, throat with a well-defined patch of buffy white.....*P. leucopogon*
   Upperparts mostly brownish gray or brownish; no distinct throat patch.....*P. subflava*

Prinia subflava immutabilis Van Someren

Prinia mistacea immutabilis VAN SOMEREN, 1920, Bull. Brit. Ornith. Club, vol. 40, p. 93 (type locality: L. Nakuru, Kenya Colony). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 151 (Tabaro; Malabo; Sidabo). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 569. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 123 (Poko; Buta; Mauda; Faradje; Medje; Mahagi Port). STONE, 1936, Proc. Acad. Nat Sci. Philadelphia, vol. 88, p. 567 (Bunia; Kasenyi; Ekibondo). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, pp. 213, 215. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1128.

Drymeca affinis SHARPE AND BOUVIER, 1877, Bull. Soc. Zool. France, vol. 2, p. 475 (Condé).

Drymoica affinis BOCAGE, 1881, Ornithologie d'Angola, pt. 2, p. 552.

Prinia mystacea SHARPE, 1883, Catalogue of the birds in the British Museum, vol. 7, p. 191. SHELLEY, 1888, Proc. Zool. Soc. London, p. 22 (Tingasi). FLOWER, 1894, Proc. Zool. Soc. London, p. 606 (Muyoméma). OUSTALET, 1904, Bull. Mus. Hist. Nat. Paris, vol. 10, p. 539 (Bangui). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 590 (Ruwenzori); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 361 (in part. Beni). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Leopoldville; Ituri). NEUMANN, 1906, Jour. Ornith., p. 276 (Chinchoxo). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 366 (Mubuku Valley, 5000 ft.; Mokia; Beni). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 305 (Irumu). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 291.

Cisticola mystacea REICHENOW, 1887, Jour. Ornith., p. 301 (Manyanga).

Cisticola lateralis SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 290 (in part. Buwissa; Boga).

Prinia mistacea tenella SCLATER AND M.-PRAED, 1918, Ibis, p. 677. BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 376. SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 397 (Kwamouth); 1924, idem, vol. 12, p. 418 (Eala; Ikengo); 1925, idem, vol. 13, p. 14 (Kunungu); 1926, idem, vol. 13, p. 198 (Moanda).

Prinia mistacea affinis SCHOUTEDEN, 1924, Rev. Zool. Africaine, vol. 12, p. 270 (Kisantu).

Prinia mystacea tenella SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 81 (in part. Beni; Irumu).

Prinia mistacea ? subsp. SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 198 (Ganda Sundi).

Prinia mistacea melanorhyncha FRIEDMANN, 1930, The African Republic of Liberia and the Belgian Congo, vol. 2, p. 760 (Mobeka).

Prinia superciliosa melanorhyncha BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 223, fig. 36. BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 69 (Licouba on middle Congo R.).

Prinia mystacea immutabilis SCHOUTEDEN, 1941, Rev. Zool. Bot. Africaines, vol. 34, p. 266 (Kasenyi).

Prinia superciliosa superciliosa BOUET, 1942, Ois. Rev. Française Ornith., new ser., vol. 12, p. 46 (Bangui).

Prinia subflava tenella M.-PRAED AND GRANT, 1942, Ibis, p. 267 (in part. Poko to Ruwenzori).

SPECIMENS: Leopoldville, male, July 3; two immature males, July 2, 3. Nouvelle Anvers, male, July 24. Lié, male, July 27; female, July 26. Medje, four males, January 26, March 5, May 18, July 25; immature male, March 13; female, March 9; two juvenile females, July 15. Niangara, female, January 8. Nzoro, male, April 24. Faradje, four males, May 14, September 6, October 14; two females, March 21, October 14. Garamba, male, June 29; female, July 22.

ADULTS OF BOTH SEXES: Iris and rim of eyelids light brown; bill black, with base of mandible dark bluish gray; feet pale yellowish pink, claws light gray.

DISTRIBUTION OF THE SPECIES: Southern Asia and the greater part of Africa south of the Sahara. There can be no doubt of the close relationship between the African forms and *P. inornata* Sykes of India.[1] Representatives of that group extend to southern China, Formosa, and Java. In Africa there are about nine races, not counting the nearly allied *P. somalica*, usually regarded as a distinct species.

Authorities disagree on the exact number and their limits, because this wren-warbler can live in such varied kinds of country that it finds few barriers to its dispersal. Within the equatorial belt of rains it shows no marked seasonal change of dress, from Sierra Leone to the coast of Tanganyika Territory. In the Sudan and in South Africa the plumage becomes much more rufous brown in the dry season, the rectrices much longer. On the southern edge of the Sahara the off-season dress is especially

[1] See Stark and Sclater, 1901, The birds of South Africa, vol. 2, p. 135; and Deignan, 1942, Smithsonian Misc. Coll., vol. 103, no. 3, p. 7.

pale, and much the same is true of birds in Ngamiland and Ovamboland.

Three rather gray races, with no very distinct dry-season plumage, have often been recognized in the equatorial belt. *P. s. melanorhynchus* (Jardine and Fraser) occupies Upper Guinea from Sierra Leone to Southern Nigeria. Its upper parts are dark gray, wings only 44–52 mm. In the southern Cameroon and Lower Congo the wing length increases slightly, so that specimens from these countries with wings 46–56 mm. have often been assigned to *P. s. immutabilis*, the race inhabiting Uganda and the highlands of Kenya Colony, where the wing length is 49–56 mm. Along the coast of East Africa lives *P. s. tenella* (Cabanis), with wings 44–50 mm. It ranges from the lower Juba River south to the lower Zambesi Valley, inland to Tabora and perhaps Kigoma.

North of the equatorial belt, *P. s. subflava* (Gmelin) extends from Senegal across the Sudan to Abyssinia, showing a well-marked dry-season plumage that is not quite so pale and grayish on head and back as that of *P. s. desertae* Macdonald.[1] The latter follows the borders of the Sahara from the upper Niger River to the Bahr-el-Abiad and the western edge of Abyssinia.

South of the Equator we find *P. s. graueri* occupying savannas from northern and central Angola and the Kasai to the north end of Lake Tanganyika and the shores of Lake Kivu. It is more brownish than *immutabilis* at all seasons, has wings 49–56 mm., and shows no striking change during the dry season. *P. s. affinis* is lighter in color, and changes to a rufous dry-season dress with very long tail-feathers. Its wing measures 48–55 mm. The probable range of *affinis* is from the southeastern Congo to the Transvaal.

Prinia subflava pondoensis Roberts of eastern Cape Province, Natal, and Zululand is similar, but with less tawny color than *affinis* while in breeding dress. *Prinia s. ovampensis* Macdonald[2] is a pale race from the northern part of Southwest Africa, and *bechuanae*, described from northern Bechuanaland, can scarcely be more than an intermediate between *ovampensis* and *affinis*, if indeed not synonymous with the latter.

Here I refer to *immutabilis* all the birds from the Lower Congo to the Ituri, Uelle, and the grasslands bordering on Uganda.

[1] 1941, Bull. Brit. Ornith. Club, vol. 62, p. 27 (Kulme, Darfur).

[2] 1941, Bull. Brit. Ornith. Club, vol. 62, p. 28 (Ovanquenyama, Ovamboland).

But it must be admitted that some from the Middle Congo are very close to *melanorhynchus* and only very slightly larger. This is a common warbler in grassy places in the Lower and Middle Congo, to be noted also along the Congo River, at least up to Lié near Lisala, and in the clearings of the Mayombe Forest. In the Uelle it is a most familiar bird, and it invades the clearings along the northern edge of the Ituri forest, south to the Nepoko River. To the eastward it is present in all the savannas about Lake Albert and Lake Edward up to around 4500 and 5000 feet near Bogoro, Luofu, and Rutshuru. In the heavier forest areas of the Ituri and around Stanleyville we did not see it.

In the Uelle District this little warbler is one of the first birds to be noticed about the borders of villages, hopping about amid the long grass and bushes, with its tail cocked up like a wren's. It has a scolding call note, and the male bird, perched on a bush or a banana plant, makes his best attempt at a song with a dry, monotonous "przzt, przzt, przzt. . ." This goes on all through the rainy periods of the year, and in the Uelle I never noticed any marked change of color during the drier months. The food is made up wholly of small insects.

The season of reproduction there extends from April to October inclusive, and the nests I thought exquisite. *Prinia subflava* combines the arts of tailor and weaver, for not only does it interlace fine strips of green grass with as much skill as many a ploceid, but it also sews the nest fast, in the majority of cases, along the edges of an inclined leaf. Very frequently the leaf chosen is that of an *Aframomum*, an herb of the ginger family, and the nest is placed about a yard from the ground, hidden by grass. In the case of a nearly finished nest, hung beneath a single leaf, I found that two near-by leaves had some strands of grass fiber sewn through their borders, so it appears that another leaf is regularly drawn up later from beneath. Two other nests were sewn between two *Aframomum* leaves, and a third showed a slight attachment to a lower leaf. A nest built in a large thistle had a leaf over it, another beneath.

Still another nest I found supported in a patch of high grass at a height of 4 feet by fine grass strips bound round the grass blades and sewn through them. The dainty oval pouch measured 10 cm. from top to bottom, and opened by a round doorway at one side of the top. The lining of all the nests was of fine, soft, grass tips.

Two eggs are the usual set, light blue or pale greenish blue, spotted or blotched with rufous and browns of varying shade, sometimes umber. There may be additional spots or washes of purplish brown, especially about the larger ends. In Uganda, three eggs are reported as normal, and the ground color of some is very pale brown or even pinkish. The dimensions are about 15.5 by 12.3 mm.

[*Prinia subflava subflava* (Gmelin)]

Motacilla subflava GMELIN, 1789, Systema naturae, vol. 1, pt. 2, p. 982 (type locality: Senegal).

Prinia mistacea mistacea SCLATER AND M.-PRAED, 1918, Ibis, p. 676 (Tembura; Meridi). BOWEN, 1931, Catalogue of Sudan birds, pt. 2, p. 40 (Kajo-Kaji).

Prinia superciliosa superciliosa BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 220 (Bamingui R.). BERLIOZ, 1939, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 11, p. 529 (Zémio).

? *Prinia subflava subflava* MACKWORTH-PRAED AND GRANT, 1942, Ibis, p. 266 ("Tingasi").

This Sudanese race, with a distinct dry-season dress, may not reach the northern border of the Congo. It probably ranges to within a comparatively short distance in the eastern Ubangi-Shari and the Bahr-el-Ghazal Province, but I cannot accept the record from Tingasi near Niangara, which I believe should be attributed to *immutabilis*.

Prinia subflava graueri Hartert

Prinia mistacea graueri HARTERT, 1920, Novitates Zool., vol. 27, p. 457 (type locality: near Baraka, northwest shore of L. Tanganyika). VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 218 (Kivu). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 570. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 213. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1130. LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 95 (Luluabourg; Banda). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 103 (Kibati). HENDRICKX, 1944, Ostrich, vol. 15, p. 207 (southwest of L. Kivu).

Prinia mystacea O.-GRANT, 1908, Ibis, p. 292 (Mfumbiro Volcanoes, 5000 ft.; north of L. Tanganyika; east of Kasongo). REICHENOW, 1911, Wiss. Ergeb Deutschen Zentral-Afrika Exped., vol. 3, p. 361 (base of Mt. Niragongo; Kisenyi; Usumbura); 1923, Mitt. Zool. Staatsinst. Zool. Mus. Hamburg, vol. 40, p. 65 (Lupungu). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 305 (Urundi; Baraka).

Prinia mistacea affinis SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 336 (Luebo; Macaco; Kabambaie; Tshikapa).

Prinia mystacea tenella SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 81 (in part, Urundi; Baraka).

Prinia mystacea graueri SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 311 (Ngoma; Lulenga); 1933, idem, vol. 22, p. 375; 1942, idem, vol. 36, p. 338 (Kibingo).

Prinia subflava graueri M.-PRAED AND GRANT, 1942, Ibis, p. 268.

DISTRIBUTION: From Ruanda and the highlands near Lake Kivu to the northern end of Lake Tanganyika, the Manyema, Kasai, northern Angola, and probably the Benguella Plateau. The range has sometimes been said to extend to the Katanga and even Nyasaland, but that does not seem justified.

In every way the behavior of *graueri* is like that of *immutabilis*, but its breeding is adjusted to the southern rainy season, and thus begins toward September in the Kasai, to continue no doubt until about April. We have several nestlings taken at Luluabourg in December, with throat and chest strongly washed with yellow. Near Lake Kivu the breeding season may be less regular, but it seems to be interrupted in the dry period which prevails from June to August.

Prinia subflava affinis (Smith)

Drymoica affinis SMITH, 1843, Illustrations of the zoology of South Africa, Aves, pl. 77 (type locality: Rustenburg, western Transvaal).

Prinia mystacea NEAVE, 1910, Ibis, p. 155 (Kambove, 4500 ft.; Bunkeya R.).

Prinia mistacea affinis SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 285 (Kafubu R.).

Prinia subflava affinis M.-PRAED AND GRANT, 1942, Ibis, p. 267 (southeastern Belgian Congo).

DISTRIBUTION: From the Transvaal and Portuguese East Africa north to Nyasaland, and supposedly the Upper Katanga and Marungu. Mackworth-Praed and Grant (1942) were satisfied that *mutatrix* Meise[1] is synonymous with *affinis*. I have no adequate material on which to base a decision.

Ten specimens collected by Rockefeller and Murphy in Marungu between February and April, most of them in adult breeding dress, are lighter and grayer on crown and upper back than *graueri*, and the wings of the adults measure 49–55 mm. They come from Moba near the lake shore, Mkuli at 5450 feet, Kasoko, Kampia, Kinia, and Selembe. The species is widely distributed in Marungu, usually found where there is light woodland with tall grass, especially in the thicker growth near termite hills.

[1] 1936, Ornith. Monatsber., p. 23 (Mbamba Bay on L. Nyasa).

Neave likewise reported it as common in the Upper Katanga, where it nests from the second half of January to early April.[1]

Nests described by Belcher from Nyasaland were of tailorbird type, attached to the under side of a broad leaf and woven of the long silky tails of the seeds of a *Clematopsis*. There was a slight inner lining of soft grass tops. But in South Africa the walls are woven of fine strips of reed-blade or grass, and the nest sometimes is slung between reeds. The eggs number three to five, and vary in ground color from deep green to whitish or reddish, always with brownish spots and blackish "hairlines." They measure, according to Austin Roberts, 15–16 mm. by 11–11.5.

Prinia leucopogon leucopogon (Cabanis)

Drymoeca leucopogon CABANIS, 1875, Jour. Ornith., p. 235 (type locality: Chinchoxo, Loango Coast).

Burnesia leucopogon REICHENOW, 1887, Jour. Ornith., pp. 301, 306 (Manyanga; Leopoldville). SHARPE, 1890, *in* Jameson, The story of the rear column, p. 416. SHELLEY, 1890, Ibis, p. 160 (Yambuya). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127. DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Umangi; Kibongo). NEAVE, 1910, Ibis, p. 154 (Lufupa R., 4000 ft.). SCHOUTEDEN, 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 39 (region of Luashi).

Prinia leucopogon REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 595. LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 18 (Mukimbungu). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 305 (Baraka). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 291 (Mboka). BERLIOZ, 1925, Bull. Mus. Hist. Nat. Paris, vol. 31, p. 349 (Luluabourg). GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 188.

Burnesia leucopogon leucopogon SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, pp. 336, 397 (Basongo; Kamaiembi; Kwamouth); 1924, idem, vol. 12, p. 270 (Kidada).

Prinia leucopogon leucopogon SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 572 (middle Ubangi R.). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 95 (Sandoa; Tshikapa; Luebo). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 226, fig. 37. BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 69 (upper Kemo R.). WHITE, 1946, Ibis, p. 97 (Mwinilunga: Kasai District).

SPECIMEN: Leopoldville, female, July 5.

ADULT FEMALE: Iris brownish red, bill black, feet brownish pink.

DISTRIBUTION OF THE SPECIES: From the vicinity of Mt. Manenguba in the Cameroon eastward to the southern Bahr-el-

[1] A. W. Vincent, 1948, Ibis, p. 310.

Ghazal, Uganda, and the Nandi district of Kenya Colony. Also to Bukoba on Lake Victoria, the Kungwe highland on the east side of Lake Tanganyika, the Manyema District, the Lufupa River in the Katanga, the southern Kasai, and Tembo Aluma on the Kwango River.

Prinia leucopogon leucopogon has the gray of breast and flanks so extensive as to leave only a small whitish area in the middle of the abdomen. It ranges from the better-watered grasslands of the Cameroon eastward to the Ubangi River and Yambuya, southward to the Lower Congo and the southwest corner of the Belgian Kwango District, then eastward on the south of the equatorial forest to the western edge of the Katanga Plateau, the Manyema District, and the northwest shore of Lake Tanganyika.

Prinia leucopogon reichenowi, with less gray on flanks, belly, and under tail-coverts but a distinct buffy wash over those parts, is found from the Ubangi River near Yakoma eastward through the grasslands north of the forest to Nandi, and south on the eastern side of the Congo forest to the northeastern side of Lake Tanganyika. One might look for intergradation between the two races on the Ubangi River above Bangui, and near the northeastern corner of Lake Tanganyika.

Although this warbler inhabits clearings in the Upper Congo forest, that forest has been the main barrier between its two subspecies. One might expect that the Kivu highlands would offer a further barrier, yet *P. l. reichenowi* ascends to at least 7200 feet in the Kigezi District. Just west of Baraka Grauer collected *P. l. leucopogon* up to about 4000 feet, but the species is not known from the Kivu Volcanoes.

The nominate race is a common bird in the Kasai and ranges eastward to the vicinity of Baraka on Lake Tanganyika and the Lufupa River in the Katanga. It also occurs near Stanley Pool and the lower Congo and may be expected in the Mayombe. I failed to see it at Lukolela, but there are records from Umangi and Yambuya which have been assigned to *P. l. leucopogon*. We saw the species at Stanleyville but unfortunately did not secure a specimen. At Duma on the Ubangi River Schubotz collected an example of nominate *leucopogon* which I have examined, and at Yakoma he obtained *reichenowi*.

This ashy gray *Prinia* is never a bird of open grassland, but rather of bushy situations near the edges of woods and the banks of rivers.

It lives in small parties, which keep well to the cover but betray their presence by frequent call notes, and now and then a bird shows itself near the top of a bush.

In southern Cameroon Bates[1] reported nests at all seasons except the very driest period. They were always sewn between two fairly broad leaves of *Aframomum*, one of the commonest second-growth plants. Tough cobwebs were passed through holes punctured in the edges of the leaves, and in this pouch was placed a deep narrow nest built of strips of large grass blades, with fine fibers as a lining. The eggs were usually two, varying from pale greenish blue to white, sparingly marked with spots and blotches of reddish chocolate or reddish brown and various shades of lilac-gray. Dimensions were 17–19 mm. by 12–13.

Prinia leucopogon reichenowi (Hartlaub)

Burnesia reichenowi HARTLAUB, 1890, Jour. Ornith., p. 151 (type locality: Nyangabo, southwest of Lake Albert); 1891, Abhandl. Naturwiss. Ver. Bremen, vol. 12, p. 11. EMIN, 1891, Jour. Ornith., p. 343 (L. Albert). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 367 (Mpanga Forest, 5000 ft.; Mubuku Valley, 5500–6500 ft.; Mokia).

Burnesia leucopogon SHELLEY, 1888, Proc. Zool. Soc. London, p. 22 (Mangbetu country).

Prinia reichenowi REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 595 (Tingasi; Songa); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 361. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 291 (Talia–Semliki).

Prinia leucopogon reichenowi SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 305 (Rutshuru Plain; Moera; Ukaika; Irumu). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 152 (Irumu). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 572. BOWEN, 1932, Ibis, p. 602 (Rangu in southern Bahr-el-Ghazal Province). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 123 (Poko; Mauda; Abimva). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 567 (Ekibondo). FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 279. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1131.

SPECIMENS: Avakubi, immature male, September 6. Bafwabaka, immature female, January 11. Medje, four males, January 17, March 21, June 9; immature male, May 20; two juvenile females, June 9, September 29. Niangara, two females, March 16, June 10. Faradje, two immature males, December 4, 26; female, November 30.

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[1] 1911, Ibis, pp. 615, 616.

ADULTS OF BOTH SEXES: Iris dull red to brownish red; bill black; feet pink or brownish pink, claws brownish gray.

DISTRIBUTION: From Mt. Elgon and the Nandi district through Uganda to the Ituri, the Uelle, and the upper Ubangi near Yakoma. Also to Bukoba, the Rutshuru Valley, and southward to the east of Lake Kivu and Tanganyika to the Kungwe highland. Invading the lowland forest wherever it can find extensive clearings, this wren-warbler has reached Ukaika and Avakubi. About Medje it is numerous, frequenting bushes and high grass near the villages, usually in parties of five or six. Instead of a musical song they utter excited "cheeping" notes, two or more individuals calling together. Near Faradje they occur sparingly in bushes

FIG. 18. Nest of *Prinia leucopogon reichenowi*, sewn between two leaves of an *Aframomum* plant.

near watercourses, and the species extends but little beyond the northern border of the Uelle District.

Along the eastern margin of the Congo forest *P. l. reichenowi* is found in like manner as far south as the Rutshuru Valley. In that region I have taken it at 5100 feet near the Mai-na-Ivi, and I have seen a pair just west of Lake Bunyoni in the Kigezi District at 7200 feet. On the eastern slope of Ruwenzori Woosnam noted it up to 6500 feet. This race extends southward through Urundi to the eastern side of Lake Tanganyika.

In the Uelle District and the northern Ituri it was evident that the breeding season lasts from about April to September, inclusive. At Medje on September 29 a nest was found, sewn with spiders' silk between two drooping leaves of an *Aframomum* plant. Com-

posed mainly of grass-like leaves, it opened upward rather than laterally. The supporting silk had been passed through holes pecked along both borders of the leaves. This nest held a single young bird. Examination of five stomachs disclosed nothing but insect remains.

In Uganda this race is said to nest between June and August, but near Lake Edward the breeding season must be far less well defined. Nests found by Jackson were likewise placed between *Aframomum* leaves; and the eggs, two to three in number, were bluish white, with round spots of rusty brown and underlying spots and blotches of mauve. Average dimensions were 17.5 by 12 mm.

Prinia bairdii bairdii (Cassin)

Drymoica bairdii CASSIN, 1855, Proc. Acad. Nat. Sci. Philadelphia, vol. 7, p. 327 (type locality: Moonda River, Gaboon coast).

Burnesia bairdi SHARPE, 1890, *in* Jameson, The story of the rear column, p. 418. SHELLEY, 1890, Ibis, p. 160 (Yambuya). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 367 (20 miles northwest of Beni). SCHOUTEDEN, 1939, Bull. Cercle Zool. Congolais, vol. 16, p. 51 (Bambesa).

Prinia bairdi REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 597; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 361. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 306 (Mawambi; Ukaika).

Burnesia bairdi bairdi SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 198 (Temvo; Makaia Ntete).

Prinia bairdii bairdii SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 572 (Uelle District). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1133.

Prinia bairdii BOUET, 1934, Ois. Rev. Française Ornith., new ser., vol. 4, p. 643 (Uelle R.).

Prinia bairdi bairdi SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 123 (Buta; Poko; Medje).

Herpystera bairdii bairdii BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 229, fig. 39 (Likandi R.).

SPECIMENS: Avakubi, four males, January 20, March 6, April 3, June 26; immature male, December 7. Medje, three males, March 8, June 6; immature male, June 3.

ADULT MALE: Iris yellow, bill black, feet dark gray.

IMMATURE MALE: Iris light brown.

DISTRIBUTION OF THE SPECIES: From Mt. Cameroon through the lowlands of the southern Cameroon and Gaboon to the Belgian Mayombe, eastward also to the Ubangi, southern Uelle, Ituri, and the vicinity of Beni. Then, in the montane regions of the eastern Congo, Uganda, and western Kenya Colony, it ranges

southward to the vicinity of Baraka and eastward to Mt. Elgon, Mau, and Sotik in Kenya Colony.

Prinia bairdii bairdii is a lowland race, never pure black on the throat, found from the Cameroon to the Mayombe and ranging eastward along the northern margin of the equatorial forest and to the Semliki Valley. It ascends to Buea on Mt. Cameroon, apparently without change. The barring on chest and flanks is very heavy and blackish in specimens from the Gaboon and many of those from the Cameroon. But birds from the lowlands of the northern Ituri, hitherto referred to *bairdii*, are less heavily barred on the chest, so that the general effect seems more grayish. Some adult males, both in the Cameroon and the northeastern Congo, are rather grayish on the throat, with barring not conspicuous there.

The mountain-forest areas of the eastern Congo from the Lendu Plateau south to the vicinity of Baraka, and adjacent highlands of Uganda are occupied by a deeply pigmented race, *P. b. obscura*, with whole throat, face, and fore crown black. In well-watered highlands from Mt. Elgon and Kakamega to the Mau and Sotik lives another dusky race, *P. b. melanops* (Reichenow and Neumann). The validity of *obscura* has been questioned, but I find that throat and face are plainly less black in a series of *melanops* from Molo, Kakamega, and adjacent localities than in *obscura* of the eastern Congo.

The lowland race, *P. b. bairdii*, is mainly restricted to the forest belt, and I did not see or hear it north of Rungu on the Bomokandi River. It has been found in the Mayombe but nowhere else along the southern edge of the Congo forest. I never saw it at Lukolela, nor are there any specimens from the Kasai or the Manyema. It dwells not in the real forest but in the dense bushy growth of abandoned plantations, about the borders of villages, or in open spots along river banks. The voice is rather loud and very distinctive, a prolonged series of rapidly recurring, shrill, metallic sounds: "pink! pink! pink! . . ." Only a single bird calls, doubtless the senior male of the party, for five or six birds usually go together. These may represent a pair and their well-grown offspring. They are shy, and it is not easy to follow the calling and see them.

In the southern Cameroon Bates (1911) found the barred wren-warbler breeding at all seasons, and what little information

I have from the Ituri confirms that. Nests, according to Bates, are built in tangles of grass or bushes in scrubby second growth or occasionally amid large sedges on a river bank. They are made of dry strips of grass leaves, with a lining of grass tops. The top is partially roofed over, and no green leaves are sewn about it. The eggs, usually in sets of three, are greenish white to bright blue-green, either blotched and clouded with pale reddish and gray or densely freckled with pale reddish, always most thickly around the larger end. Measurements are about 16–17 mm. by 12.5.

Prinia bairdii obscura (Neumann)

Burnesia bairdi obscura NEUMANN, 1908, Bull. Brit. Ornith. Club, vol. 23, p. 13 (type locality: 90 km. west of L. Edward). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 103; 1940, Bull. Cercle Zool. Congolais, vol. 16, p. 71 (region of Mongbwalu; Kivu).

Burnesia melanops O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 366 (Mpanga Forest, 5000 ft.; Mubuku Valley, 5500–6000 ft.).

Prinia melanops REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 361.

Prinia bairdi obscura REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 361 (L. Edward; L. Kivu). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 306 (northwest of L. Tanganyika, 2000 m.). HARTERT, 1920, Novitates Zool., vol. 27, p. 457.

Prinia bairdii obscura SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 573.

Prinia bairdi melanops BERLIOZ, 1936, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 8, p. 332 (Mbwahi).

Prinia bairdii melanops JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 1132 (in part. Ruwenzori; Kivu).

DISTRIBUTION: Wooded highlands from about 5000 feet to 7900 feet, on the Lendu Plateau, Ruwenzori, the mountains west of Lake Edward, through the Kivu District to southwestern Uganda, the Rugege Forest, and the mountains northwest of Baraka.

This is an excellent example of an altitudinal race, for *obscura* was found to be common at Djugu, around 5000 feet, and *bairdii* inhabits the adjacent lowlands near Irumu and Beni, at 3000 to 4000 feet. Then *obscura* reappears again around the slopes of Ruwenzori, in the Mpanga Forest, and west of Lake Edward, always at 4800 feet or higher. No intermediates have come to my notice.

The voice of *obscura* at Djugu sounded to me exactly like that

of the lowland *bairdii*, a shrill "pink! pink! pink! . . ." The haunts of the mountain race are apt to be a little more densely grown up with bushes and scrub. It is usually seen in parties in ravines where there may be a break in the canopy of forest trees. I did not notice it on the western slope of Ruwenzori, but I collected two at 7900 feet on the northwest side of Mt. Mikeno. The only food noted in their stomachs was the remains of insects, including a green caterpillar 30 mm. long.

Rudolf Grauer collected one example in 1907 in the Rugege Forest and others at 6200 to 6600 feet on the highlands northwest of Baraka. Rockefeller and Murphy took three at Luvumba, 6400 feet, on the highland west of the Ruzizi Valley, and noted that they were found in thickets in parties of a dozen or more. In my experience, a majority of the specimens collected show by the condition of the skull that they are not quite adult, even though they have adult plumage. This holds good for the lowland race as well. The parties must thus be composed of a few adults with a number of younger birds. The juvenal plumage is gray on throat and chest, with only the faintest suggestion of barring. That of the lowland race is much more whitish below.

The nest and eggs of *obscura* are still unknown. It would seem idle to expect any definite breeding season, though there might be a hiatus during the driest part of the year.

Bathmocercus rufus vulpinus Reichenow

Bathmocercus vulpinus REICHENOW, 1895, Novitates Zool., vol. 2, p. 160 (type locality: Aruwimi R., Belgian Congo).

Bathmocercus murinus REICHENOW, 1895, Novitates Zool., vol. 2, p. 160 (type locality: Aruwimi R.).

Bathmocercus jacksoni SHARPE, 1902, Bull. Brit. Ornith. Club, vol. 13, p. 10 (type locality: Kibera, Toro).

Bathmedonia rufa REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 742; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 371 (northwest of Beni).

Bathmedonia vulpina REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 743.

Bathmedonia murina REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 743.

Bathmedonia talboti ALEXANDER, 1907, Bull. Brit. Ornith. Club, vol. 19, p. 46 (type locality: Libokwa, Uelle District).

Bathmedonia jacksoni O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 381 (Mpanga Forest, 5000 ft.). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 296 (Kilo).

Bathmedonia rufa vulpina SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30,

p. 278 (Moera; Beni; Ukaika; Mawambi). SCHOUTEDEN, 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 86 (Buta); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 103 (east of Rutshuru Plain). BANNERMAN, 1938, The birds of tropical West Africa, vol. 5, p. 232.

Bathmocercus rufus vulpinus HARTERT, 1920, Novitates Zool., vol. 27, p. 483 (west of Lakes Edward and Tanganyika). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 123 (Panga; Medje).

Bathmocercus rufus jacksoni SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 573. GRANVIK, 1934, Rev. Zool. Bot. Africaines, vol. 25, p. 111 (Libokwa). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1133.

SPECIMENS: Banalia, female, September 21. Avakubi, male, April 13; female, August 14. Ngayu, male, July 24. Medje, three males, March 29, September 8, 12; immature male, September 12; four females, March 29, May 17, September 8, 12.

ADULTS OF BOTH SEXES: Iris dark red-brown or dark red; bill black; skin of fore neck bright blue (and bare of feathers at sides); feet rather dark blue, claws dusky.

DISTRIBUTION OF THE SPECIES: From the vicinity of Efulen in the forested Cameroon eastward to the Ituri, Mt. Elgon, the Kericho district, eastern border of the Rutshuru Valley, and lowland forest in the eastern Manyema. *B. r. rufus* Reichenow appears to be restricted to the Cameroon forest, and there is little likelihood of its reaching Belgian territory either in the Mayombe or along the lower Ubangi River. It is somewhat darker in color, above and below, than *B. r. vulpinus*, and the black patch on the fore neck of the female is not bordered by an area of grayish buff.

Bathmocercus rufus vulpinus may be expected to occur near the Ubangi River and is known from the Lower Uelle to the eastern borders of the Upper Congo forest. Grauer took specimens west of Lake Edward, and Rockefeller and Murphy secured several near the upper Elila River in the Manyema. This same race occupies isolated patches of forest in western Uganda and others in western Kenya Colony from Mt. Elgon to the Kericho district. Careful comparison of specimens from Kenya Colony, the Mpanga Forest, and the northeastern Congo fails to justify the recognition of *jacksoni*. The extent of black on the forehead of the male varies, but not geographically.

Females of this species differ so strikingly in their gray coloration that more than once they were named as distinct species.

One of our young males of *vulpinus* is just beginning to assume black feathers in the middle of the chest and light rufous ones at its sides. It shows that in juvenal dress the male is very similar to the very young female, dark olive-gray, even over the whole head, with underparts lighter in the middle. But the wings and tail of the young male are much more rufous.

Although I have not examined a specimen of *Eminia cerviniventris* (Sharpe) from Upper Guinea, I strongly suspect it to be a close ally of *Bathmocercus rufus*. The color pattern is rather similar, save that the black extends from the face over the whole head, and the rufous color covers the whole of the flanks. The skin of its throat is reported to be bright blue, as in *Bathmocercus*, and both behavior and voice, as described by Walker,[1] are very like those of the latter bird.

Bathmocercus has sometimes been referred to the family Timaliidae, but its elongated tail of 10 quills, the marked sexual difference in color, and general features of behavior would seem to support the view of Bates,[2] who argued that it belongs among the warblers.

Bathmocercus rufus vulpinus is closely confined to the forest region, extending north to Libokwa in the Uelle, though I did not notice it north of Medje. It is characteristic of second growth, found in old overgrown gardens and especially among the dense bushes in sunlit spots along forest roads and near watercourses. A pair, or perhaps one family, will skulk close to the ground, uttering a "chipping" call note, or the male may reveal his presence by a whistled "fee, fee, fee. . . ," slightly prolonged and repeated slowly for a considerable period. This whistle has decided carrying power and is to be heard throughout the year.

The fact that the sides of the fore neck are bare, with its skin of a bright blue color, gives reason to suspect that the esophagus may be distended with air to aid in the production of the whistled note. We were not able to watch the bird singing, but similar patches of bare skin are found in the African *Camaroptera superciliaris* and the South American *Donacobius atricapillus*, and their necks are somewhat distended while singing.

Along the eastern edge of the forest, near Irumu and Beni, and in the wooded Semliki Valley, I found them behaving and calling

[1] See Bannerman, 1939, The birds of tropical West Africa, vol. 5, pp. 100–101.

[2] 1911, Ibis, p. 622.

in exactly the same way, but nowhere does the bird venture much above 5000 feet in that region. I saw it in the Mpanga Forest, and heard it on the eastern side of the Rutshuru Valley, but never on Ruwenzori or the Kivu Volcanoes.

Four stomachs only were examined. They all disclosed remains of small insects, including two small caterpillars, also a few insect eggs and one small round millipede.

In the northern Ituri *Bathmocercus* nests throughout the rainy season. A female on March 29 was about to lay, and other individuals with sexual organs enlarged were taken in September. Our youngest specimen must have been hatched in August or late July.

The nest, as described by Bates for *B. r. rufus*, is a bulky pile lined with fine tops of *Panicum* grass. It is large enough to hold two or three adults, which use it as sleeping quarters. Natives caught them there at night. At Medje I was brought a pair of *vulpinus* captured on March 29 in that same way, and the oviduct of the female held a soft egg. Completely developed eggs have not yet been described.

Melocichla mentalis mentalis (Fraser)

Drymoica mentalis FRASER, 1843, Proc. Zool. Soc. London, p. 16 (type locality: Accra, Gold Coast).

Cisticola meridionalis SHARPE, 1883, Catalogue of the birds in the British Museum, vol. 7, p. 243 (type locality: Chinchoxo).

Melocichla mentalis REICHENOW, 1887, Jour. Ornith., p. 309 (Kasongo); 1905, Die Vögel Afrikas, vol. 3, p. 538. BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 69 (Bangui).

Cisticola mentalis var. *meridionalis* OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127.

Melocichla mentalis mentalis BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 363 (northern Belgian Congo); 1939, The birds of tropical West Africa, vol. 5, p. 212, fig. 34. SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 336 (Ngombe in Kasai); 1924, idem, vol. 12, p. 270 (Kidada); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 123. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 567 ("Uelle district"). GRANT AND M.-PRAED, 1941, Bull. Brit. Ornith. Club, vol. 62, p. 33.

Melocichla mentalis amauroura SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 397 (Kwamouth).

Melocichla mentalis grandis LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 94 (in part. Luluabourg).

Melocichla mentalis intermedia GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 190 (type locality: Luluabourg, Kasai District).

SPECIMEN: Kwamouth, male, December 19.

DISTRIBUTION OF THE SPECIES: Grasslands from Portuguese Guinea eastward to the Cameroon, the upper White Nile, southwestern Abyssinia, and the coast of East Africa. It avoids the equatorial forests, but extends southward on their eastern side, and also from the Loango Coast and the southern edge of the Congo forest to Angola, the lower Zambesi Valley, and eastern Southern Rhodesia.

Despite the vast range, races are not easy to define. Wear of the plumage reduces the ruddiness of the underparts and makes the tail look browner. *M. m. mentalis* of western Africa is always a rather ruddy bird, with wings only 73–77 mm. in Upper Guinea. It extends eastward at least to the Ubangi, and south of the Congo forest from Cabinda to the Kasai and Manyema. Gil Lletget (1943) proposed to separate the Kasai population as a new race, but I am not convinced of its validity.

Melocichla mentalis amauroura of east central Africa is darker brown over the whole upperparts, with tail often blackish, and wings 75–80 mm. It appears to range from northern Uganda to the southeast side of Lake Tanganyika, and in my opinion *atricauda* Reichenow is not separable. How far east it extends is still debated; perhaps it reaches Masongoleni in Kenya Colony.

Melocichla mentalis granviki Grant and Mackworth-Praed,[1] of southwest Abyssinia, is perhaps a shade darker above than *amauroura*, less rufous on chest and flanks, sides of chest with dull brownish areas that do not meet in mid-line, and wings 78–81 mm. From the upper levels of the Chyulu Hills in Kenya Colony Van Someren[2] has described a supposedly dark-backed race, *M. m. chyulu*, with wings 70–73 mm., which I have not seen.

Melocichla mentalis orientalis (Sharpe), in my opinion, is very like nominate *mentalis*, and has wings of adults about 74–78 mm. Its range may be from about the base of Kilimanjaro south to Nyasaland and eastern Southern Rhodesia. Another race of rather doubtful validity is *M. m. grandis*, with wings reaching 81 mm. and chest and flanks not very rufous. It may extend from the Benguella highland to the Katanga and Marungu and even to Nyasaland.

I am satisfied that specimens from the Lower Congo, Kasai,

[1] 1941, Bull. Brit. Ornith. Club, vol. 62, p. 31 (Wardji, Jimma, Abyssinia).

[2] 1939, Jour. East Africa Uganda Nat. Hist. Soc., vol. 14, p. 91.

and Manyema are best referred to *M. m. mentalis*, while those of the Uelle District are probably intermediate between *mentalis* and *amauroura*, though here referred to the latter race. The nominate form surely reaches the Ubangi District, where Schubotz collected it at Duma, although a darkening of the upper parts seems to begin even in the Cameroon grasslands.

In the savannas near Kwamouth and Leopoldville I found this large warbler common, singing in the rainy season, toward December, exactly as it does at the corresponding season in the Uelle. It is evidently numerous in the Kasai and the Manyema; we have a series from Luluabourg, as well as specimens from Kasongo and from Kita-Kita south of Kama in the Manyema. One rather ruddy bird was collected by Grauer on the northwest shore of Tanganyika.

Melocichla mentalis amauroura (Pelzeln)

Argya amauroura PELZELN, 1883, Verhandl. Zool. Bot. Gesellsch. Wien, vol. 32, p. 503 (type locality: Fadibek, east of Nimule on the Bahr-el-Jebel).

Melocichla mentalis HARTLAUB, 1882, Abhandl. Naturwiss. Ver. Bremen, vol. 8, p. 191 (Langomeri). O.-GRANT, 1908, Ibis, p. 298 (north and northwest of L. Tanganyika, 3000–4000 ft.); 1910, Trans. Zool. Soc. London, vol. 19, p. 346 (Beni). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 3, p. 256 (Mbiambana). EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, pp. 12, 56 (Tunguru and Nyamsansi on L. Albert).

Melocichla atricauda REICHENOW, 1893, Ornith. Monatsber., p. 61 (type locality: Ukondju, Semliki Valley; also from Ndussuma).

Cisticola mentalis EMIN, 1894, Jour. Ornith., p. 163.

Melocichla mentalis atricauda REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 539 (Nyangabo; Karevia); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 355. LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 29 (Rutshuru). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 289 (Kamabo; Munie-Mboka; Lufungula; Kalegela; Lisasa; old Mission St. Gustave). GRANT AND M.-PRAED, 1941, Bull. Brit. Ornith. Club, vol. 62, p. 35.

Melocichla mentalis mentalis NEUMANN, 1906, Jour. Ornith., pp. 263, 264 (Rimo in Makraka).

Melocichla mentalis amauroura NEUMANN, 1906, Jour. Ornith., p. 263. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 294 (Kisaka; Baraka; Ruzizi R.; Rutshuru Plain; Kasindi; Beni). SCLATER AND M.-PRAED, 1918, Ibis, p. 645 (Tembura; Meridi). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 125 (Butalia; Zombia; Irumu). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 568. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 123 (Mauda; Niarembe; Mahagi Port; Poko); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 103; 1941, Rev. Zool. Bot. Africaines, vol. 34, p. 266. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 567 (Kasenyi). JACKSON, 1938, The birds of Kenya

Colony and...Uganda, vol. 2, p. 1126. GRANT AND M.-PRAED, 1941, Bull. Brit. Ornith. Club, vol. 62, p. 34 (Ruanda; Urundi).

Melocichla mentalis orientalis SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 311 (Usumbura).

Melocichla mentalis amaurora FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 209.

SPECIMENS: Niangara, two males, January 18, November 23. Dungu, male, January 27. Faradje, male, March 10; immature male, March 9; two females, February 21, May 17; two immature females, December 19, 23.

ADULTS OF BOTH SEXES: Iris light yellowish buff; maxilla black, mandible light bluish gray with black tip; feet bluish gray.

NESTLING: Iris blackish, shading to gray on outer rim; bill brownish black, corners and interior of mouth yellow, two black spots on back of tongue; feet dull dark brown, lighter on back of metatarsus and yellowish gray beneath toes.

DISTRIBUTION: From the Bahr-el-Ghazal and northern Uganda south along the eastern side of the Congo forest to the eastern shores of Lake Tanganyika. Moreau (1943) reported it from Ufipa. Although specimens from the interior of Kenya Colony often seem more rufous on the underparts than the majority from Uganda, I do not think they can be referred to *orientalis*. Birds from the Upper Uelle are also rather rufous, their backs and tails not quite so dark as in others from the region of Lake Albert, the lowlands around Ruwenzori, and Lake Edward. But there seems to be no good line of demarcation for Reichenow's *atricauda*.

This is a bird of high grass, common in the Uelle and in the savannas of the eastern Congo south to Lake Tanganyika, where Raven took specimens at Nyanza on the northeast shore. Within our limits it ascends but little above 4500 feet, and it does not invade clearings within the solid forest border.

Because of its loud, cheerful song it is a most familiar bird in the Uelle District and becomes silent there only in the second half of the dry season. Perched usually on some strong grass stalk, it delivers itself in jerky syllables which I recalled to memory by the words "Chirp-chirp-chirp-chirp, doesn't it tickle you?" A few more notes are sometimes added to the end, and the whole performance is pleasantly musical. In the more equatorial grasslands near Lake Edward, where I saw it at the new post of Beni,

in the upper Semliki Plain, at old Kasindi, and in the Rutshuru Plain, it may well continue singing throughout the year. At higher levels in the Kivu and on the slopes of Ruwenzori it was not noticed, but Grauer collected specimens in the Kagera region, as did Frechkop at Gabiro in Ruanda.

I believe this warbler is entirely insectivorous. In three stomachs the insects found included a small mantis, a grasshopper, and many small beetles.

Breeding begins in the Uelle about March, when singing commences, and continues until December, for a young bird taken on the twenty-third of that month has the tail but half grown. In May a female was trapped on her nest, a deep cup of dry grass, containing two eggs. They were pinkish white, marbled with rufous, a wreath of heavy color encircling the larger end. Measurements are 21.5 by 16 mm. and 22.4 by 16.1 mm.

Melocichla mentalis grandis (Bocage)

Drymoica (*Cisticola*) *grandis* BOCAGE, 1880, Jor. Sci. Nat. Lisboa, vol. 8, p. 56 (type locality: Caconda, Angola).

Melocichla mentalis NEAVE, 1910, Ibis, p. 144 (Kambove; junction of Lualaba and Lufupa rivers; Lufupa R.).

Melocichla mentalis orientalis approaching *grandis* SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 568 (southern Belgian Congo).

Melocichla mentalis orientalis SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 285 (Elisabethville). BOWEN, 1931, Proc. Acad. Nat. Sci. Philadelphia, vol. 83, p. 291 (Bukama).

Melocichla mentalis grandis LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 94 (Kayoyo; Sandoa; upper Lufira R.). GRANT AND M.-PRAED, 1941, Bull. Brit. Ornith. Club, vol. 62, p. 34 (southeastern Congo).

DISTRIBUTION: Northern and central Angola, eastward supposedly to the Katanga, and perhaps to Marungu and northern Nyasaland. Specimens from the Benguella Plateau are large, with wings 78–81 mm.; those from lower levels in northern Angola are similarly dull in color but not quite so large, wings only 76–77 mm. Lacking any adequate material from the southeastern Congo, I simply follow Grant and Mackworth-Praed in calling the Katanga race *grandis*.

A single male secured by Rockefeller and Murphy at Kampia, 4525 feet, in Marungu, is not quite dark enough for *amauroura*. It has the wing 80 mm. long. In the Upper Katanga Neave collected three specimens between 3000 and 4500 feet above sea

level. On the Vipya Plateau, Nyasaland, Benson noted the species up to 5800 feet. The breeding season in the southeastern Congo must extend from November to April, just the reverse of dates in the northern Congo. According to A. W. Vincent[1] the nest and eggs are very similar to those of *amauroura*.

Schoenicola brevirostris alexinae (Heuglin)

Sphenoeacus alexinae HEUGLIN, 1863, Jour. Ornith., p. 166 (type locality: Bahr-el-Ghazal).

Catriscus apicalis HARTLAUB, 1891, Abhandl. Naturwiss. Ver. Bremen, vol. 12, p. 11 (Nyangabo; Buguera).

Schoenicola apicalis REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 577; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 358 (north end of L. Edward). O.-GRANT, 1908, Ibis, p. 294 (L. Kivu); 1910, Trans. Zool. Soc. London, vol. 19, p. 353 (Luimi Valley, east Ruwenzori, 6000 ft.; south Ruwenzori, 3000 ft.). NEAVE, 1910, Ibis, p. 148 (Lufupa R.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 299 (Irumu). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 290 (Kalegela; old Mission St. Gustave); 1923, idem, vol. 11, pp. 336, 397 (Ngombe in Kasai; Kwamouth); 1925, idem, vol. 13, p. 14 (Kunungu).

Schoenicola apicalis apicalis GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 137 (Butalia; Tabaro).

Schoenicola brevirostris SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 517. BERLIOZ, 1932, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 4, p. 377 (Kadjudju on L. Kivu). SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 312 (Usumbura); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 120 (Djalasinda); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 104. SCHOUTEDEN, 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 338 (Kibingo). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1049.

Schoenicola apicalis aequatorialis GRANVIK, 1934, Rev. Zool. Bot. Africaines, vol. 25, p. 90 (type locality: northeast slope of Mt. Elgon; also from Ruwenzori and L. Kivu).

Schoenicola brevirostris alexinae BANNERMAN, 1937, Bull. Brit. Ornith. Club, vol. 57, p. 71; 1939, The birds of tropical West Africa, vol. 5, p. 82, fig. 21.

SPECIMENS: Niangara, male, March 23. Dungu, male, June 4. Faradje, five males, September 15, 16, October 12, 13; immature male, December 16; two females, January 13, October 18; immature female, October 13. Garamba, two males, July 9, 12; two females, July 12.

ADULTS OF BOTH SEXES: Iris grayish brown to dark brown; maxilla black, mandible bluish gray; feet brown.

DISTRIBUTION OF THE SPECIES: Eastern Cape Province north to Mouila in the Gaboon, East Africa, and southwestern Abys-

[1] 1948, Ibis, p. 309.

sinia; also west on the northern side of the forest belt to Sierra Leone. *S. b. brevirostris* (Sundevall) of southern Nyasaland and the countries to the southward is supposedly lighter in color and more fulvous than *S. b. alexinae,* which inhabits Angola, Northern Rhodesia, and all the regions farther north. The difference is not great. From the Chyulu Hills in Kenya Colony Van Someren[1] has described a race, *chyulu,* said to be still darker than *alexinae. S. platyura* (Jerdon) of southwestern India must be a close ally of *S. brevirostris.*

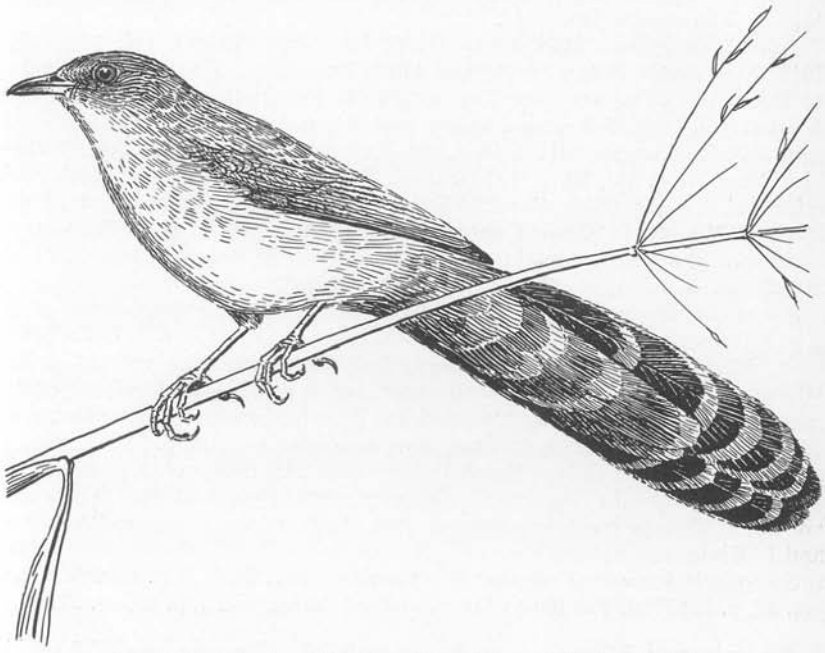

FIG. 19. The fan-tailed warbler, *Schoenicola brevirostris.*

The great-tailed warbler is found in most of the savanna districts of the Congo, from near sea level at Boma to 5000 feet on the Lendu Plateau, 6400 feet near Luofu, and 6100 feet in Marungu at Sambwe. On the northeast slope of Ruwenzori it was taken at 6000 feet. Although so widely and regularly distributed, it never fails to arouse interest because of its unusual form, with overgrown rectrices and tail-coverts. Its home is in open

[1] 1939, Jour. East Africa Uganda Nat. Hist. Soc., vol. 14, p. 95.

fields of grass, most often somewhat marshy. When alarmed, it seeks shelter low down in the herbage, where it may creep about till nearly stepped on, but birds of both sexes will be seen occasionally perching on tall reed stalks or dry bushes, especially in the early morning.

The female also has an over-developed tail, but her only note is a harsh "chick" uttered now and then. Her mate, on the other hand, gives a rather weak but metallic "cheep, cheep, cheep, cheep. . . ," either while perching or during the sallies which he makes into the air, bobbing as though weighted down by his voluminous tail. At times he circles in a wide spiral over the grass, at an elevation of 50 to 75 feet, making a slight noise also with his wings as he sings, and then gliding down again into the cover. The tail of a freshly killed male sometimes appears to be slightly "keeled," as with the American grackles of the genus *Quiscalus*. Many of the tendons along the lower part of the tibia are ossified, just as they are in *Bradypterus baboecala* and other species of that genus, and in *Cisticola ayresii*.

We observed the spiraling of males in the Uelle District from the latter half of March until October, and dissections indicated this as the approximate duration of the breeding season in that northern area. The food consisted exclusively of small insects and their larvae, mostly tiny beetles and the like. In 10 stomachs we noted also grasshoppers (three times) and small hairless caterpillars (twice).

Breeding males were later taken near Irumu in September, and near Luofu in March. At Luofu there is not likely to be any long interruption of nesting. In the southern Congo the off season would begin toward May, and nesting would be expected again in November. At Boma I watched a male on January 14 in a grassy hollow, and in a rather extended area of grassland just south of Lukolela I saw another on September 19.

The nest is so well concealed that it has rarely been found, a small cup built of coarse grass blades and lined with finer grass, placed low down in a grass tussock. The eggs are two, creamy white, mottled with pale red-brown or darker red-brown, sometimes with an admixture of lilac in a wreath about the larger end. Measurements by Benson[1] are 18–18.5 by 12.5–13.7 mm.

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[1] 1940, Ibis, p. 621.

KEY TO THE SPECIES OF *Bradypterus* OCCURRING IN OR NEAR THE CONGO

1. Upperparts dull or dark brown, with little if any ruddy tinge; fore neck or chest often with dark streaks or spots.....2
   Upperparts mainly rufous or cinnamon-brown; no blackish streaks or spots on fore neck or chest.....7
2. Chest with rather broad and conspicuous spots of blackish or dark brown on a whitish ground.....3
   Chest not distinctly spotted, but sometimes gray or brownish; fore neck often narrowly streaked.....5
3. Wings 67–72 mm. long; back blackish brown, lesser wing-coverts broadly tipped with white or cream; tail about as long as wing, rectrices 10.....*B. carpalis*
   Wings 59–66 mm. long; back not so dark brown; lesser wing-coverts not tipped with whitish; tail 10–13 mm. longer than wing.....4
4. Rectrices 12; below the spotted area the breast is white.....*B. graueri*
   Rectrices 10; below the spotted area the breast is light brownish gray.....*B. grandis*[1]
5. Chest and flanks distinctly gray, throat and middle of breast white; rectrices 12, middle ones about 10 mm. broad, their webs not decomposed.....*B. alfredi*
   Chest white or brownish, flanks and under tail-coverts brownish, fore neck of adults usually with narrow blackish or dark brown streaks.....6
6. Rectrices 12, middle ones 11–14 mm. wide, often frayed by wear..*B. baboecala*
   Rectrices 10, rather narrow, 7–9 mm. wide, outer part of webs usually rather loose.....*B. mariae*[2]
7. Rectrices either 10 or 12, middle ones 11–12 mm. wide, their webs rather firm until frayed by wear.....*B. cinnamomeus*
   Rectrices always 10, middle ones scarcely 8 mm. wide, their webs usually very loose.....*B. lopezi*

Bradypterus alfredi alfredi Hartlaub

Bradypterus alfredi HARTLAUB, 1890, Jour. Ornith., p. 152 (type locality: Nyangabo, on highland southwest of L. Albert); 1891, Abhandl. Naturwiss. Ver. Bremen, vol. 12, p. 10. REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 579; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 359.

Bradypterus alfredi alfredi SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 512. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 170. M.-PRAED AND GRANT, 1941, Ibis, p. 449. DELACOUR, 1943, Ibis, p. 33.

DISTRIBUTION OF THE SPECIES: From the plateau west of Lake Albert and Ruwenzori south to the mountains northwest of Baraka, the Kungwe highland on the east side of Lake Tanganyika and Mwinilunga in Northern Rhodesia. It has been found be-

[1] Known only from the Ja River, Cameroon.

[2] Not known from Congo, but occurs in southwestern Tanganyika Territory, Angola, and the Cameroon.

tween 3900 feet and 7600 feet, but scarcely more than 10 specimens have been taken.

Bradypterus alfredi alfredi is represented only by the type, a rather dull-colored female collected by Emin near Nyangabo, the village of Chief Madjamboni, on the southern part of the Lendu Plateau, at about 4000 feet. A specimen from the eastern side of Ruwenzori at 5000 feet was made the type of *B. a. albicrissalis* because it was more whitish on throat, belly, and under tail-coverts. A specimen from west of Baraka seems to agree with it, but the status of *albicrissalis* is most uncertain. From the Kungwe highland Moreau has named a third race, *B. a. kungwensis*, distinguished by the more olivaceous color of its upperparts. A single example from Northern Rhodesia also represents *kungwensis*.

Emin, according to his journal,[1] collected only three birds on May 3, 1889, close to the village of Madjamboni, in a hilly, high-grass upland with a good many bushes and trees, as well as native cultivation. It would seem that *Bradypterus alfredi* is a bird of high grass and thickets; at any rate it is singularly elusive. Boyd Alexander[2] mentioned a reed-warbler from Kodja hill, near Nzoro, as *Calamocichla alfredi*. His description of its haunts and voice shows conclusively that he meant *Calamocichla rufescens nilotica*, which I have seen and heard in the same vicinity.

Bradypterus alfredi albicrissalis Neumann

Bradypterus alfredi albicrissalis NEUMANN, 1914, Ornith. Monatsber., p. 10 (type locality: Mubuku Valley, east Ruwenzori; also from northwest of L. Tanganyika). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 513. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 170. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1039. M.-PRAED AND GRANT, 1941, Ibis, p. 449 (Bugoma). DELACOUR, 1943, Ibis, p. 33.

Bradypterus alfredi O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 356 (Mubuku Valley, 5000 ft.).

DISTRIBUTION: Supposedly it includes the slopes of Ruwenzori and the mountains northwest of Lake Tanganyika. Mackworth-Praed and Grant (1941) extend the range also to Bugoma in western Uganda. Perhaps not more than four skins of *albicrissalis* are known, and only one of nominate *alfredi*, so I can feel no great confidence in their separation.

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[1] Stuhlmann, 1927, Die Tagebücher von Dr. Emin Pascha, vol. 4 p. 275.

[2] 1907, From the Niger to the Nile, vol. 2, p. 311.

The east Ruwenzori specimen was taken by Gerald Legge amid high grass and dense vegetation below the mountain forest. To the west and northwest of Baraka, Rudolf Grauer obtained a poorly prepared female at 1200 meters, and an immature male, faintly tinged with yellowish below, at 2000 meters. The latter bird was said to have come from "a thicket."

Legge's specimen was found to have ossified tendons in the lower leg like those of other members of the genus. The rounded tail of *B. alfredi* has rather broad rectrices of firm texture, 12 in number.

There is good reason to believe that this warbler frequents high grass or bushes rather than mountain forest and that it will yet be found in many intervening localities. Its voice, when known, should aid in detection. The species should occur in suitable places in Ruanda-Urundi, since Moreau's collector found *B. a. kungwensis* in or near the bamboo areas of Kungwe at 7600 feet.

[*Bradypterus alfredi kungwensis* Moreau]

Bradypterus alfredi kungwensis MOREAU, 1942, Bull. Brit. Ornith. Club, vol. 62, p. 42 (type locality: Mt. Kungwe, 7600 ft., on east side of L. Tanganyika).

Although described from a high mountain on the eastern side of Tanganyika, this subspecies may well be expected to occur in the Upper Katanga, for in July of 1946 C. M. N. White obtained an adult male of *B. alfredi* near Mwinilunga in Northern Rhodesia. It had been snared in evergreen forest.

After examining this Mwinilunga bird and comparing it with the type of *alfredi*, I found that it agreed best with the description of *B. a. kungwensis*, for it was dark colored above and below, with wing 62 mm., tail 58 mm., culmen to base 18 mm., metatarsus 21 mm. Later I had the opportunity of comparing it with the type and three topotypes of *kungwensis* at the British Museum. The agreement is close, and since the highlands of the Katanga rise directly between Kungwe and Mwinilunga the occurrence of this bird in the southeast Congo seems certain.

Bradypterus baboecala centralis Neumann

Bradypterus brachypterus centralis NEUMANN, 1908, Bull. Brit. Ornith. Club, vol. 21, p. 55 (type locality: river bank between Mkingo and Mulera, Ruanda; also from Kikuyu to L. Kivu). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 359. HARTERT, 1920, Novitates Zool., vol. 27, p.

469. VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 230. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 509. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 119 (Uelle); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 104. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 167. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 68.

Bradypterus brachypterus CHAPIN, 1916, Bull. Amer. Mus. Nat. Hist., vol. 35, p. 29 (Faradje).

Bradypterus baboecala centralis M.-PRAED AND GRANT, 1941, Ibis, p. 446. DELACOUR, 1943, Ibis, p. 32.

SPECIMENS: Faradje, five males, August 11, September 4, 10. North of Nzoro, male, female, April 18.

ADULTS OF BOTH SEXES: Iris dull brown; bill black, with base of mandible bluish gray; feet brownish.

DISTRIBUTION OF THE SPECIES: Cape Province and Natal north to Abyssinia and west to Lake Chad, Efulen in Cameroon, and Benguella. Not known from the Congo forest. The exact number of races is a matter of debate.

Bradypterus baboecala baboecala (Vieillot) of Cape Province and Transvaal is a large race, wing 56–64 mm., tail 65–75 mm.; its upperparts are rather warm brown or grayish brown. *B. b. tongensis* Roberts is slightly smaller and short-tailed, ranging from Natal perhaps to southern Nyasaland. Its wings measure 55–59 mm., tail 60–67 mm. *B. b. msiri* Neave is darker above than the foregoing, with wings 55–62 mm. and tail around 68 mm.; it may extend from Lake Moero and the Katanga to Lake Ngami. *B. b. benguellensis* Bannerman is of similar dark color, but supposedly larger, wings 58–65 mm., tail 64–74 mm.

Bradypterus baboecala moreaui Sclater is not so dark as *msiri*, has wings 52–60 mm., and must be very similar to *tongensis*. Its range is believed to extend from Nyasaland to Usambara and the Tana River. *B. b. elgonensis* Madarász is again darker, deep warm brown above, with wings 51–58 mm., tail 56–67 mm., and supposedly occupies the highlands from Fort Hall and Nairobi to Kavirondo and Mt. Elgon.

Bradypterus baboecala centralis is a dark form, rather olive-brown above, with wings 51–57 mm. and tail 54–62 mm., known to occur from Ruanda to the Uelle District and thence west to the British Cameroons. *B. b. chadensis* Bannerman, from Lake Chad, is known by only one imperfect specimen with wing 58 mm., tail 61 mm. It can scarcely be a synonym of *elgonensis*, since

B. b. sudanensis Grant and Mackworth-Praed, of Lake No intervenes, with wings 50–54 mm., tail up to 62 mm. *B. b. abyssinicus* (Blundell and Lovat) of Abyssinia is very like *elgonensis*, possibly a shade lighter, wings 55–60 mm., tail 60–64 mm.

In my opinion, all the races of tropical Africa are very closely interrelated, and we may expect considerable readjustment of their limits, if not of their names. The specimens from Akonolinga and Efulen in the Cameroon that I have examined seemed to have the dark streaks on the fore neck more pronounced than usual in *centralis*, often extending forward in diminishing size almost to the chin.

All the races of *B. baboecala* have 12 rectrices, and in *centralis* and *elgonensis* I have found ossified tendons in the legs above the tarsal joint. Similarly stiffened tendons are present in the legs of *B. carpalis*, *B. graueri*, *B. cinnamomeus*, as I can attest, and in *B. alfredi* and *B. lopezi barakae*, according to Woosnam.[1] They are to be expected in all the African species of this genus, and Woosnam reported them in *Cettia cetti*. While found in *Schoenicola* and a few species of *Cisticola* such as *ayresii*, they are not present in *Calamocichla* or in any species of *Acrocephalus* that I have examined.

It is likely that *Bradypterus baboecala* will be found in suitable swamps north of the forest belt all the way from the northeastern Congo to the Cameroon. In the Upper Uelle it is restricted to papyrus swamps, consequently its southern limit there seems to be marked by the Kibali River. But it may also be expected in papyrus swamps of the eastern Ituri, and perhaps also in dense, damp thickets of elephant grass. In the highlands west of the Semliki Valley, between Karebumba and Kabiabo, at about 5000 feet, I listened in March, 1927, to calls exactly like those of *B. b. centralis* coming from dense elephant grass on a steep slope. From papyrus near Lake Mutanda and Lake Bunyoni in British Ruanda, and from dense beds of reeds (*Phragmites*) on the west shore of Lake Kivu near Katana came also the same calls. To anyone who has hunted this bird the lack of specimens from these localities is no surprise.

About Faradje *Bradypterus b. centralis* is common, and during the whole of the rainy season its notes are among the character-

[1] *In* O.-Grant, 1910, Trans. Zool. Soc. London, vol. 19, p. 356.

istic sounds issuing from the papyrus. They consist of sharp chirps, "zrip!," repeated some 12 to 15 times, slowly at first, then faster and still faster as they die gradually away. Meanwhile the male bird making the noise sits on a stalk of papyrus, but as he finishes (or sometimes just before the end) he flutters off into the air, keeping always amid the vegetation, and, hovering with tail pointed downward, gives four or five loud wing beats. Then he makes for a new perch, often to recommence his stridulous song. When not engaged in these performances the birds keep well concealed in the tangle of old dry papyrus, saw-grass, and other swamp vegetation that commonly fills such places waist deep or even shoulder high. From such cover they occasionally utter a single "chŭt" or cluck, more rarely a single clap of the wings.

The characteristic warblers of papyrus swamps, including *Calamocichla*, all made some noise the year round, and I have heard *B. baboecala* calling occasionally near Faradje in February, but only toward sundown. About mid-April, when the new growth of papyrus was well advanced, *B. baboecala* and the louder-voiced *B. carpalis* began to sing with real vigor. During the hotter hours of the day they would cease. The season of song continued until October, and during this period dissections of males showed them to be in breeding condition. Most pronounced enlargement of gonads was noticed in April and in October. Though heard so often as we traversed their swamps, the little brown birds could be spied only through good fortune or by long, patient waiting. Their food, as shown by five stomach examinations, consisted of very small insects. In South Africa a small snail (*Succinea*) is said to be included in the diet.

The nest of *centralis* has never been described, but that of the East and South African races is cup-shaped, made of dry rush or coarse grass leaves, with a lining of finer fibers or rootlets, and hidden deep in a bed of reeds. The two or three eggs are pinkish white spotted with reddish brown or yellowish brown, and with violet-gray shell markings.

Bradypterus baboecala msiri Neave

Bradypterus msiri Neave, 1909, Bull. Brit. Ornith. Club, vol. 25, p. 25 (type locality: Msiri's village, 3000 ft., Bunkeya R., Katanga); 1910, Ibis, p. 148. Sclater, 1930, Systema avium Aethiopicarum, pt. 2, p. 510.

Bradypterus brachypterus subsp.? Lynes and Sclater, 1934, Ibis, p. 46 (L. Bangweolo).

Bradypterus baboecala msiri M.-PRAED AND GRANT, 1941, Ibis, p. 446 (L. Bangweolo; Kayoyo). DELACOUR, 1943, Ibis, p. 32.

Bradypterus babaecala msiri WHITE, 1944, Ibis, p. 148 (Luapula R.); 1947, Bull. Brit. Ornith. Club, vol. 68, p. 35 (near Ndola).

DISTRIBUTION: Region of Lake Moero, Lake Bangweolo, and Katanga to Lake Ngami. *B. bedfordi* Ogilvie-Grant is apparently not separable, and *B. b. benguellensis* Bannerman at least a close ally.

In haunts and behavior this race must be very similar to *centralis* and the other forms. During a trip up the Lualaba River through the vast papyrus swamps of the Lake Kisale region, in August, 1927, I listened in vain for the calls of *Bradypterus*. I can attribute the silence only to the season, for I am convinced that *B. baboecala* must inhabit swamps in that section of the Congo. The papyrus swamps near Boma likewise seemed devoid of a *Bradypterus*, even in the month of January.

Bradypterus graueri Neumann

Bradypterus graueri NEUMANN, 1908, Bull. Brit. Ornith. Club, vol. 21, p. 56 (type locality: western Kivu Volcanoes, in a swamp at 2200 m.). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 359. HARTERT, 1920, Novitates Zool., vol. 27, p. 469. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 509. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 312; 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 104. M.-PRAED AND GRANT, 1941, Ibis, p. 448. DELACOUR, 1943, Ibis, p. 33 ("Ruanda").

DISTRIBUTION: Swamps in the highlands of the Kivu District, but known from only two specimens, the male type collected by Rudolf Grauer and a female which I secured 6 miles south of Lubero, west of Lake Edward.

This is a somewhat larger species than *B. baboecala*, with broader blackish spotting on the fore neck. In the male the spots extend to the throat, but there they are much smaller in the female. The upperparts are slightly lighter brown than those of *B. b. centralis*, and the whitish superciliary line is broader and longer. Wing of male 65 mm., of female 59; tail of male 75 mm., of female 70; culmen to base, male 17 mm., female 16; metatarsus, male 23 mm., female 22.5. Iris brown; bill brownish black above, grayish on mandible; feet pale brown. There are 12 rectrices, and tendons along the lower tibia are ossified.

Bradypterus grandis Ogilvie-Grant, known from only a single

male, taken at Bitye in forested Cameroon, seems to be the nearest ally. But it appears to have only 10 rectrices, and below the spotted area of the chest there is a light brownish gray breast band, not present in *graueri*.

All we know of the origin of the type of *graueri* is that it was taken at the edge of a swamp in the lower spurs of the western Kivu Volcanoes on August 17, 1907. The locality is thus at 7200 feet, close to Mt. Niragongo or Mt. Nyamlagira. My own specimen was secured at 7500 feet, to the west of Lake Edward, on March 13, 1927. We were passing a rather small marsh, more or less encircled by mountain forest, just south of Mt. Mapanda. A brownish warbler flew up and alighted momentarily on one of the wide-leaved sedges, which grew to a height of about 3 feet. Down it went again into the thick cover, where no doubt it had a mate. The bird I finally secured was a female, with ovary no longer enlarged, but a brood spot indicating there must be a nest. No more were ever seen.

Bradypterus carpalis Chapin

Bradypterus carpalis CHAPIN, 1916, Bull. Amer. Mus. Nat. Hist., vol. 35, pp. 27, 28, fig. 4 (type locality: Faradje, Upper Uelle District, Belgian Congo). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 512. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 119. M.-PRAED AND GRANT, 1941, Ibis, p. 450. DELACOUR, 1943, Ibis, p. 33.

SPECIMENS: Faradje, three males, February 21, September 8, 10; female, September 11. North of Nzoro, male, April 18.

ADULTS: Iris dark brown; bill mostly black, but gray beneath mandible; feet brownish.

DISTRIBUTION: Papyrus swamps of Uganda and the northeastern Uelle District. No doubt it will be found near the northern end of Lake Albert and possibly may extend westward to the Ubangi-Shari.

This large species of *Bradypterus* can be recognized by its very dark brown upperparts and flanks, heavily spotted chest, and a white or creamy patch on the carpal region of the wing. Our four adult males have wing 67–72 mm., tail 69–75, culmen to base 18–19, metatarsus 27–28. The female has wing 68 mm., tail 67, culmen to base 18, metatarsus 26.

The type of *yokanae* Van Someren[1] is not even subspecifically

[1] 1919, Bull. Brit. Ornith. Club, vol. 40, p. 21 (Sezibwa R., Uganda).

distinct from *carpalis* and has 10 rectrices, as have all our examples of the latter. The tail-feathers are all decidedly broad, and I cannot see how their number offers any generic character. It might be suspected that *carpalis* is closely allied to *B. grandis*, but the latter has the upperparts lighter and warmer brown, with superciliary line a little more distinct, and spots on chest fewer and not so dark. Its bill is slightly shorter, its tail longer, and hind claw much smaller.

Bradypterus carpalis is a rather common bird in the papyrus swamps around Faradje, as proved by its voice. Besides the loud guttural notes of *Calamocichla rufescens* and the calls of *Limnocorax* and other swamp-dwelling birds, one hears there particularly in the early morning puzzling series of chirrups, made by some birds that are strangely invisible. These successions of short notes, with a resonance that is almost metallic, start slowly, quicken, and gradually die away, often to be followed by four or five loud, explosive wing beats. The authors elude observation, are easily alarmed, and many an hour may be spent breaking pathways through the papyrus, wading in muck, and waiting for the calls to be given again.

I finally made certain that these strange noises were produced by two species of *Bradypterus*. The louder ones, audible to a distance of several hundred yards, were those of *B. carpalis*. Very similar but weaker notes were those of *B. baboecala centralis*. Neither bird ever ventured outside the papyrus. The larger *carpalis* went sneaking about, low down, uttering a low chip or cluck. Sometimes, if I remained motionless, it would approach to within 3 or 4 yards, as though drawn by curiosity. To secure specimens entire I had to aim a little to one side, counting on stray pellets to bring the bird down.

Though heard most often from April through September, *B. carpalis* called occasionally during the dry season. Once, in February, I heard it begin about 4:45 A.M. and continue until 6:30 A.M. Even on February 21 a male was found in breeding condition, as were other specimens in April and September. The female had an egg in her oviduct, and breeding must go on at almost all seasons. The diet seemed to consist exclusively of insects; nest and eggs are of course unknown.

From papyrus along the Shari River, between Kilo and Nizi, in the eastern Ituri, I have heard calls that sounded exactly like

those of *carpalis*. There is every reason to expect both *B. carpalis* and *B. baboecala centralis* in that region.

Bradypterus cinnamomeus cinnamomeus (Rüppell)

Sylvia? (*Salicaria*) *cinnamomea* RÜPPELL, 1840, Neue Wirbelthiere, Vögel, vol. 3, p. 111, pl. 42, fig. 1 (type locality: Entschetqab, Simen Province, Abyssinia).

Bradypterus cinnamomeus REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 359 (in part. Bugoie Forest, 2300 m.). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 137 (Mt. Muhavura, 2900–3200 m.; Mt. Sabinyo, 2700 m.; Mt. Karisimbi, 4100 m.). SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 312 (Nya-Muzinga; Burunga; Lulenga); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 104 (Kundhuru-ya-Tshuve, 3600 m.; Mt. Sabinyo, 3000 m.; Mt. Visoke, 3770 m.; Mt. Karisimbi, 3100 m.); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 338 (forest west of Astrida). VAN SOMEREN, 1932, Novitates Zool., vol. 37, p. 373 (Kigezi). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 168 (Birunga Volcanoes).

Bradypterus cinnamomeus pallidior NEUMANN, 1914, Ornith. Monatsber., p. 10 (type locality: forest west of Baraka, 1900 m.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 299. HARTERT, 1920, Novitates Zool., vol. 27, p. 469.

Sathrocercus cinnamomea cinnamomea M.-PRAED AND GRANT, 1941, Ibis, p. 450 (in part. Kivu area).

Bradypterus cinnanomeus SCHOUTEDEN, 1942, Bull. Cercle Zool. Congolais, vol. 17, p. 61.

Bradypterus cinnamomeus cinnamomeus DELACOUR, 1943, Ibis, p. 38.

DISTRIBUTION OF THE SPECIES: Highlands from northern Abyssinia to southern Nyasaland, also in Cameroon. *B. c. cinnamomeus* occupies most of the highlands of Abyssinia and Kenya Colony, extending also to the Kivu region. *B. c. macdonaldi* (Grant and Mackworth-Praed) is a darker race, restricted to western Abyssinia near Goré. *B. c. cavei* Macdonald, of the Imatong Mountains, is also dark above. *B. c. mildbreadi* Reichenow of Ruwenzori is a reddish race, the crown almost as richly colored as the back. *B. c. chyuluensis* Van Someren was described from the Chyulu Hills in Kenya Colony as a very dark form. *B. c. rufoflavidus* Reichenow and Neumann, of Tanganyika Territory from West Usambara and Kilimanjaro to the Mbulu district, is rather dull-colored throughout and a little darker above than nominate *cinnamomeus*. *B. c. nyassae* Shelley, of Nyasaland, Njombe, and the Nguru Mountains in Tanganyika Territory is browner than any of the foregoing races; and *B. c. ufipae* Grant

and Mackworth-Praed[1] of the highland west of Lake Rukwa was stated to be the darkest brown of all. *B. c. bangwaensis* Delacour[2] is a very deep rufous form inhabiting the mountains of the Cameroon.

From the mountains west of Baraka Neumann described a race as *pallidior*, but the type seems to be exceptionally light in color, and other specimens from that vicinity are like those of the Kivu Volcanoes. I cannot distinguish them from birds of Mt. Kenya and Abyssinia. Grauer collected a single example, on the other hand, in the Rugege Forest, and that bird is exceptionally rufous. Despite all that has been written to the contrary, I find that Ruwenzori birds are deeper rufous above than nominate *cinnamomeus*, so for them I use the name *mildbreadi*, founded on a rather young example.

This species always has ossified tendons along the lower tibia, even in birds that are still in juvenal dress. The number of rectrices varies; examples from the Kivu have either 10 or 12, but their tails are often defective, and I cannot give any exact ratios. When fresh the tail-feathers are fairly broad, and only along their margins are the barbs rather disconnected. But wear often frays them out surprisingly.

The cinnamon bush-warbler is a rather common bird on the Kivu Volcanoes, from around 6500 feet up to 13,000. It has not yet been reported from west of Lake Edward or Lake Kivu, but it is known from the Bugoie and Rugege forests and from the mountains northwest of Lake Tanganyika. Rockefeller and Murphy secured four specimens on Mt. Kandashomwa between 7600 and 9000 feet, while Grauer obtained five on the mountains west of Uvira and Baraka. One of them, the type of *pallidior*, was labeled as coming from 6200 feet.

In my experience the birds are found skulking in pairs or singly amid bushes in the mountain forest and bamboos, in the dense herbaceous growth amid *Hagenia* woods around 11,000 feet, and even in the grasses and *Alchemilla* of the alpine zone, as at Lukumi. They feed on tiny insects, and are apt to be silent, or to repeat a single weak cheep at regular intervals. The song is described by other observers as a pleasant trill or babble, introduced by a

[1] 1941, Bull. Brit. Ornith. Club, vol. 62, p. 30 (Mbisi, 8000 ft., Ufipa, Tanganyika Territory).

[2] 1943, Ibis, p. 39 (new name for *B. castaneus* Reichenow).

few short "twees." It certainly could not be confused with the songs of *B. baboecala* and *carpalis*. There is so little seasonal change in the vegetation it frequents that a short breeding period would not be expected.

Two nests were found by Meinertzhagen in February on Mt. Kenya, deep cup-shaped structures attached to brambles about a foot from the ground. Dry grass formed the foundation, the lining was hair-like, and plant down and feathers covered the outside. One nest held three young; the other had two eggs, dull white, fairly well speckled and blotched with purplish brown.

Bradypterus cinnamomeus mildbreadi Reichenow

Bradypterus mildbreadi REICHENOW, 1908, Ornith. Monatsber., p. 161 (type locality: west Ruwenzori, 4000 meters); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 360.

Bradypterus cinnamomeus JACKSON, 1906, Ibis, p. 546 (Ruwenzori); 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1041. O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 355 (Mubuku Valley, 7000–10,000 ft.; Butagu Valley, 7000 ft.). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 359 (in part. West Ruwenzori, 4000 m.). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 509 (in part. Ruwenzori). GRANVIK, 1934, Rev. Zool. Bot. Africaines, vol. 25, p. 88. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 168 (in part. Ruwenzori).

Bradypterus barakae CHAPIN, 1927, Ibis, p. 360 (west Ruwenzori).

Bradypterus cinnamomeus cinnamomeus BENSON, 1939, Bull. Brit. Ornith. Club, vol. 59, p. 112.

Sathrocercus cinnamomea cinnamomea M.-PRAED AND GRANT, 1941, Ibis, p. 450 (in part. Ruwenzori).

DISTRIBUTION: Restricted, it seems, to the Ruwenzori Range, where it occupies all the mountain slopes from 6500 feet up to 13,000. As Granvik (1934) remarked, Ruwenzori specimens are usually brighter rufous than nominate *cinnamomeus* from Elgon and the Mau, and have wings 56–62 mm. They seem never to have more than 10 rectrices.

The type of *mildbreadi* was an immature bird, which Neumann at first took to be the young of *B. lopezi barakae*. To me it seemed perhaps the young of *B. cinnamomeus*, and Sclater made certain of this by comparing it with young birds in the British Museum. The juvenal dress of *barakae* is much more dusky brown above. Moreover, *barakae* is not known to range up to 4000 meters.

We found *B. c. mildbreadi* on the western slopes of Ruwenzori from 6900 feet up to 9000 feet, but never in the heath zone, where

there would be so little cover or food suitable for it. Nor did I notice it above the heaths, but it may well occupy the higher levels in small numbers. On the eastern slope Woosnam noted it as particularly numerous at about 10,000 feet, where the bottoms of the valleys were swampy and full of low, rank vegetation.

Near Kalongi I watched one crawling up and down amid elephant grass, almost like a mouse. Usually they were encountered in low bushes or thickets amid bamboos or mountain forest, never more than two or three together. The short "stridulous" song mentioned by Woosnam is probably peculiar to *barakae*. I certainly never heard it from the present species.

Young birds in fresh juvenal dress were probably about as numerous as adults in November and December, when a few of the latter were still in breeding condition. Whether or not this indicates special activity in nesting toward October, I cannot be sure. These young birds had the inside of the mouth yellow, with a black spot at each side of the tongue toward the base. This characteristic spotting of the tongue is shown by the young of many genera of Sylviidae.

Bradypterus mariae Madarász of eastern Africa, possibly conspecific with *B. barratti* Sharpe of South Africa, is represented by the races *usambarae* in the highlands north of Lake Nyasa, *boultoni* on the Benguella Plateau, and *camerunensis* on Mt. Cameroon. It is not impossible that a member of the same group may yet be found in the highlands of the Katanga.

Bradypterus lopezi barakae Sharpe

Bradypterus barakae SHARPE, 1906, *in* Jackson, Ibis, p. 546; new name for *Phlexis rufescens* Sharpe, preoccupied (type locality: Ruwenzori). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 355 (Mubuku Valley, 7000–9000 ft.). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 511. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1040. SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 105.

Phlexis rufescens SHARPE, 1902, Bull. Brit. Ornith. Club, vol. 13, p. 9 (type locality: Ruwenzori).

Bradypterus rufescens REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 580. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 299 (northwest of L. Tanganyika, 2000 m.).

Sathrocercus rufescens SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 81.

Bradypterus barakau SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 313 (Lulenga; Burunga).

Sathrocercus lopezi barakae M.-PRAED AND GRANT, 1941, Ibis, p. 455.

Bradypterus lopezi barakae DELACOUR, 1943, Ibis, p. 40.

DISTRIBUTION OF THE SPECIES: Highlands of Fernando Po and the eastern Congo, from Ruwenzori to the mountains northwest of Lake Tanganyika. *B. l. lopezi* (Alexander) of Fernando Po is a relatively dull brown bird; *B. l. barakae* of Ruwenzori and the eastern Congo a decidedly rufous one. In form they are almost exactly alike, with 10 narrow rectrices, loosely webbed.

Relatively few specimens of *barakae* have so far been taken. I failed to find it on the western slope of Ruwenzori, where it must occur as it does on the eastern side, in dense parts of the mountain forest. At first I mistook *B. cinnamomeus mildbreadi* for it, when I met it in just such places. In the Mubuku Valley, on the eastern side, Woosnam reported that *barakae* was found from 6500 feet up to 8500 feet, and frequented the darkest parts of the forest, especially in dense undergrowth. It always appeared wet and bedraggled and had a loud, short song of stridulous notes, delivered with startling suddenness.

Far to the southward, Grauer collected about four examples on the mountains west and northwest of Baraka, at elevations of 1900 and 2000 meters. One of them was a young bird in complete juvenal dress, very dark brown above, and lightly washed with yellowish on throat and abdomen.

In July, 1929, Rockefeller and Murphy secured two adults at Luvumba on the Lusigi River, 7300 feet. They noted that the birds stayed very low down in weeds and vines in dense forest, where they were seen with difficulty. The call note was a faint double chirp. Schouteden is the only naturalist who has found it on the Kivu Volcanoes, but it may be expected also to the west of Lakes Edward and Kivu.

KEY TO THE SPECIES OF *Calamocichla* IN OR NEAR THE CONGO

Small: wings of adult males less than 72 mm., of females less than 68 mm..... *C. gracilirostris*

Larger: wings of adult males usually exceeding 73 mm., those of females 71 mm. or longer..... *C. rufescens*

Calamocichla gracilirostris leptorhyncha (Reichenow)

Turdirostris leptorhyncha REICHENOW, 1879, Ornith. Centralbl., p. 155 (type locality: Tschara, near mouth of Tana R., East Africa).

Calamornis leptorhyncha LYNES AND SCLATER, 1934, Ibis, p. 44 (L. Bangweolo). SCHOUTEDEN, 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 60 (Kinia near L. Bangweolo).

? *Calamoecetor gracilirostris zuluensis* BANNERMAN, 1937, Ibis, p. 301 (Kafue R. in Northern Rhodesia).

Calamoecetor leptorhyncha macrorhyncha BANNERMAN, 1937, Ibis, p. 868.

Calamaecetor leptorhynchus leptorhynchus WHITE, 1944, Ibis, p. 149 (Luapula R.).

Calamoecetor leptorhynchus WHITE, 1946, Ibis, p. 92.

Calamoecetor leptorhyncha macrorhynchus WHITE, 1947, Bull. Brit. Ornith. Club, vol. 68, pp. 34, 35 (Luapula R.).

DISTRIBUTION OF THE SPECIES: Lake Chad, Lake No, and Abyssinia, south through eastern Africa to Natal and Capetown, also westward across Rhodesia to the southern coast of Angola.

In South Africa this species has always a whitish breast and supraloral line, but in eastern Africa and the Sudan the coloration may approach the more uniform gray-brown dress of *C. rufescens*. *C. g. gracilirostris* (Hartlaub), from Cape Province to Natal and Ngamiland, is a large race with wings 64–79 mm. Toward Nyasaland the wing length decreases to 59–68 mm., and similar small birds, *C. g. leptorhyncha*, extend through the lowlands of eastern Africa north perhaps to the Danakil country. If those of Mozambique and Zululand are really whiter below than northern birds, they are to be separated as *C. g. zuluensis* Neumann, and *zuluensis* may extend to southern Nyasaland and the Kafue River. In Northern Rhodesia *C. g. winterbottomi* appears to be a race of intermediate size from the western border of the Mwinilunga District, and *C. g. cunenensis* Hartert of the coast of southern Angola is about as large as *gracilirostris*, but darker on the crown and more grayish on the back.

Calamocichla gracilirostris nuerensis, with wings 59–67 mm., is a rather uniformly colored race ranging from Lake Edward to the upper White Nile. *C. g. jacksoni* Neumann of the northern shore of Lake Victoria is slightly larger, with wings 65–71 mm. *C. g. parva* (Fischer and Reichenow), in the highlands of Kenya Colony, has wings mostly 68–76 mm., and *C. g. tsanae* (Bannerman) of the Abyssinia highland is a rather dark grayish race with wings 63–74 mm. *C. g. neglecta* Alexander of Lake Chad, with wings 59–67 mm., is of much the same pale color as *C. rufescens chadensis*.

All the races of *gracilirostris* in tropical Africa appear to differ from those of *C. rufescens* in having the base of the mandible pinkish buff and the lining of the mouth bright orange or even light scarlet. Both species have representatives living together on

Lake Chad, in the sudd of the Nile, near Lake Victoria, along the Lualaba, and at Lake Bangweolo. In the southeastern Congo *C. g. leptorhyncha* dwells side by side with *C. r. nilotica.*[1]

At Nyanza on the northeast shore of Lake Tanganyika Raven collected a male and a female of *C. g. leptorhyncha* for the United States National Museum, and I secured a male at Kadia on the Lualaba River in August, 1927. These examples have no distinct whitish eyebrow, though the upper lores are a trifle pale. Lynes's bird from Lake Bangweolo seemed very similar. I doubted the occurrence of any race of this species on the Kivu highlands until recently, when Hendrickx showed me an undoubted male of *leptorhyncha*, in worn plumage, from Lushadu on the southwest shore of Lake Kivu.

In general behavior and voice this race is similar to *nuerensis*, which I discuss below. It lives in high grasses, reeds, or papyrus, and the nest is a cup slung between two or three stems of rushes, reeds, or papyrus, or placed occasionally in a fork of a shrub or on a giant *Cyperus* head.[2] It is constructed of coarse strips of rush or of grass, and placed from 1 foot to 4 feet or more above the water. The two eggs are bluish green or pale grayish green, freckled with brown and purplish, most thickly marked at the larger end. The dimensions are about 17.3–18.5 by 12.8–13.5 mm. Breeding takes place mainly during the rainy season but may extend into the drier months as well.

[*Calamocichla gracilirostris winterbottomi* (White)]

Calamoecetor leptorhyncha winterbottomi C. M. N. White, 1947, Bull. Brit. Ornith. Club, vol. 68, p. 34 (type locality: Manyinga River, Macondo District, Angola).

This race, with wings said to measure 67–71 mm., tail 59–66 mm., is evidently an intermediate between *leptorhyncha* and *cunenensis*, and lives along the Manyinga and Kabompo rivers in Northern Rhodesia. It was described from a point only 100 miles south of the Belgian Lulua District, and may thus reach Congo territory there.

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[1] Relationships and voice in this genus are discussed also in Chapin, 1949, Ornithologie als biologische Wissenschaft. . . . Festschrift. . . . Erwin Stresemann, Heidelberg, pp. 7–16.

[2] See Vaughan, 1930, Ibis, pp. 26, 27; Moreau, 1933, Ibis, p. 24; and Benson, 1944, Ibis, pp. 464, 465.

Calamocichla gracilirostris nuerensis Lynes

Calamocichla leptorhyncha nuerensis LYNES, 1914, Bull. Brit. Ornith. Club, vol. 33, p. 130 (type locality: Lake No, upper White Nile).

Calamornis jacksoni SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 514 (in part. L. Albert; L. Edward).

Calamoecetor jacksoni JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 1044 (in part. L. Edward).

Calamoecetor leptorhyncha leptorhyncha SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 105 (Kabare on L. Edward).

DISTRIBUTION: Papyrus and reed beds from Lake No south to Lake Albert and Lake Edward. This race was described as darker above and grayer beneath than nominate *leptorhyncha;* its wings measure only 59–67 mm., so it cannot be synonymous with *jacksoni,* which has wings of adults 65–71 mm. But it is very like *leptorhyncha,* and the coloration varies so greatly with age and abrasion of plumage that the distinction is anything but clear.

In my experience this swamp warbler is much more confined to the lowlands than is *C. rufescens.* I saw it only at Butiaba and Kasenyi on Lake Albert and at Kabare on the south shore of Lake Edward. At those places the birds were numerous, but kept well hidden in beds of reeds (*Phragmites*) or of large cattails (*Typha*) and bulrushes (*Scirpus*) fringing the lake shores. From time to time they uttered a single throaty "chow" or a harsh "cha!" as of annoyance. A longer song was frequently heard, with so little of the guttural resonance characteristic of *C. rufescens* that I wondered at first if it could come from a *Calamocichla.* The pitch was higher, and the notes were a little more musical, so it suggested the words "chwee-chwee-chwee. . ." Had the larger species occurred at the same places, there would have been no difficulty in distinguishing the two by their voices.

As Lynes pointed out, the inside of the mouth is bright orange in *nuerensis,* and the base of the mandible is more pinkish buff than in *C. r. nilotica.* Otherwise the bill is dusky brown, and the iris rather light brown. The feet are dark gray, tinged either with bluish or with olive.

Although I found no nest, the breeding season was plainly in progress at Kabare in mid-May. At Kasenyi in August it seemed to be over; there were fully grown young and adults in worn plumage with gonads reduced.

Calamocichla rufescens rufescens (Sharpe and Bouvier)

Bradypterus rufescens SHARPE AND BOUVIER, 1876, Bull. Soc. Zool. France, vol. 1, p. 307 (type locality: Landana, Enclave of Cabinda).

? *Sylvia* LEACH, 1818, *in* Tuckey, Narrative of an expedition to explore the River Zaire, p. 407 (Lower Congo).

Lusciniola gracilirostris REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 583 (in part. Landana).

Calamornis rufescens SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 513 (Shari R.; Portuguese Congo).

Calamoecetor rufescens rufescens BANNERMAN, 1937, Ibis, p. 295 (Boma); 1939, The birds of tropical West Africa, vol. 5, p. 75, fig. 19.

Calamoecetor gracilirostris rufescens GRANT AND M.-PRAED, 1941, Bull. Brit. Ornith. Club, vol. 61, p. 40.

SPECIMENS: Boma, male, January 5; female, January 16. Stanleyville, male, November 29; immature male, November 27.

ADULT MALE: Iris rather light brown; maxilla dusky brown, mandible shading from buff at base to gray at tip, gape light yellow; feet rather light gray, tinged with either bluish or greenish.

DISTRIBUTION OF THE SPECIES: From Lake Chad, southwestern Nigeria, and Fernando Po to the upper Nile, the Kavirondo District, Lake Bangweolo, and northern Angola. *C. r. rufescens* extends from Nigeria, Fernando Po, and the Congo mouth east to the Ubangi and to Stanley Falls. Wings of adults measure 71–78 mm., males averaging larger than females. The hind claw, measured in a straight line from bottom of base, is 7.6 to 9.7 mm. long.

Calamocichla r. chadensis Alexander, still known only from Lake Chad, is slightly paler in color, with wing and hind claw much the same as in *rufescens*. *C. r. nilotica* averages slightly larger, with wings of adults 72–80 mm., hind claw, from bottom of base, usually 10–11 mm. Its breast and flanks are rather grayish. This race extends from Lake No on the Nile to the northeastern Congo, Kavirondo, southeastern Congo, and Lake Bangweolo. *C. r. foxi* is a somewhat larger form, with wings 80–85 mm., localized in the highlands near Kigezi in southwestern Uganda. *C. r. ansorgei* Hartert, another large race, is known only from the type, a male with wing 82 mm., collected at Duque de Bragança, in Angola. A single specimen from Ndala Tando seems more like *rufescens*.

Calamocichla r. rufescens is a western race, living in papyrus

swamps and in dense stands of elephant grass in the Cameroon, on Fernando Po, and in the region of the Lower Congo. Specimens from north and south of the equatorial forest do not differ appreciably, but young examples are much more rufescent than adults. This form appears to extend eastward to the Ubangi District, for we have two rather poor specimens from Karawa, and to Stanleyville, where Christy and I both collected a few. At Boma in the Lower Congo it is numerous in papyrus.

The Stanleyville specimens are best referred to *rufescens*, although the differences from *nilotica* are not great. In their behavior and their resonant churring voice birds of the nominate race do not differ from *nilotica*, which is discussed in more detail below.

Nests built in dense elephant grass ("ésông") in the southern Cameroon were described by Bates[1] as deep cups, often quite bulky, made of strips of leaf sheaths of the cane-like grass and placed in its forks. Two eggs seemed to form a set, and they were either white or pale greenish white, rather sparingly spotted and blotched with yellowish brown, dark gray, and light gray, the markings more numerous toward the large end. Dimensions were 19–20 by 14–15 mm.

Calamocichla rufescens nilotica Neumann

Calamocichla ansorgei nilotica NEUMANN, 1908, Novitates Zool., vol. 15, p. 246 (type locality: Wadelai, on the Bahr-el-Jebel; also from Ruwenzori and Beni).

Calamocichla alfredi ALEXANDER, 1907, From the Niger to the Nile, vol. 2, pp. 309, 311 (Kodja hill, near Nzoro).

Calamocichla nilotica O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 356 (Mbuku Valley, 5000 ft.). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 359.

Calamocichla CHAPIN, 1916, Bull. Amer. Mus. Nat. Hist., vol. 35, p. 29 (Faradje).

Calamornis nilotica SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 514. LYNES AND SCLATER, 1934, Ibis, p. 44 (L. Bangweolo). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 120.

Calamoecetor rufescens nilotica BANNERMAN, 1937, Ibis, pp. 297, 867. SCHOUTEDEN, 1938, Bull. Cercle Zool. Congolais, vol. 14, p. 105 (L. Kisale); 1938, idem. vol. 15, p. 46 (Nkole on L. Moero).

Calamornis rufescens SCHOUTEDEN, 1937, Bull. Cercle Zool. Congolais, vol. 13, p. 103 (Buta).

Calamoecetor nilotica JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 1043.

[1] 1911, Ibis, pp. 613, 614.

Calamoecetor gracilirostris nilotica GRANT AND M.-PRAED, 1941, Bull. Brit. Ornith. Club, vol. 61, p. 40.

SPECIMENS: Pawa, two males, July 6, 11. Nzoro, male, female, April 18. Faradje, six males, July 2, August 18, September 8; four females, February 28, July 2, August 18; juvenile female, October 14.

ADULTS: Iris rather light reddish brown to rather dark brown; maxilla dusky brown, mandible buff, corners of mouth yellow and interior of mouth rather dull yellow; feet bluish gray or greenish gray, with yellowish soles.

DISTRIBUTION: From the sudd region of the Nile near Lake No to the northeastern Congo, Uganda, and Kisumu in Kenya Colony; also to the vicinity of Lake Kisale on the Lualaba and to Lake Bangweolo. In the highlands northeast of Lake Kivu it is replaced by *C. r. foxi.*

The Nile swamp warbler is rather locally distributed because of its marked preference for papyrus, dense reeds, or elephant grass. We found it common in the papyrus swamps which extend over the Congo-Nile watershed into the Upper Uelle about as far as Nzoro and Gangara-na-Bodio. In the hilly country near Nzoro, Pawa, and the near-by Namambula hill it lives in patches of tall elephant grass, often away from watercourses.

In the eastern Ituri it inhabits both papyrus and elephant grass on the Lendu Plateau, up to 5000 feet near Masikini; in the upper Semliki Valley and on the highlands to the west it is heard calling from elephant grass; and once at Lugashali in the Rutshuru Valley it was heard in a dense field of sorghum. At Kita-Kita in the Manyema, Rockefeller and Murphy collected specimens in elephant grass, while around Lake Kisale papyrus provides most suitable haunts. At Lake Bangweolo Lynes found *nilotica* in papyrus.

The birds are usually not easy to see, and keep within the vegetation, hopping or climbing about on the tall stalks in search of insects. Though less elusive than the *Bradypterus* living in the the same places, they can seldom be watched without patient searching and often some wading.

They frequently utter a loud, guttural "churr," or extend it to a series of resonant syllables that may be written "churr, churr, chirrup, chuckle. . ." These have a gurgling, brassy quality which is most distinctive. Calling is most energetic

during the rainy season but is noticed ocasionally during the drought. The papyrus swamps keep fairly green and flourishing the year round, save when fire invades them.

Nesting is carried on in the Uelle from May to September or October, and south of the Equator in the opposite months. At Faradje on September 8 a nest was betrayed by the anxiety of its

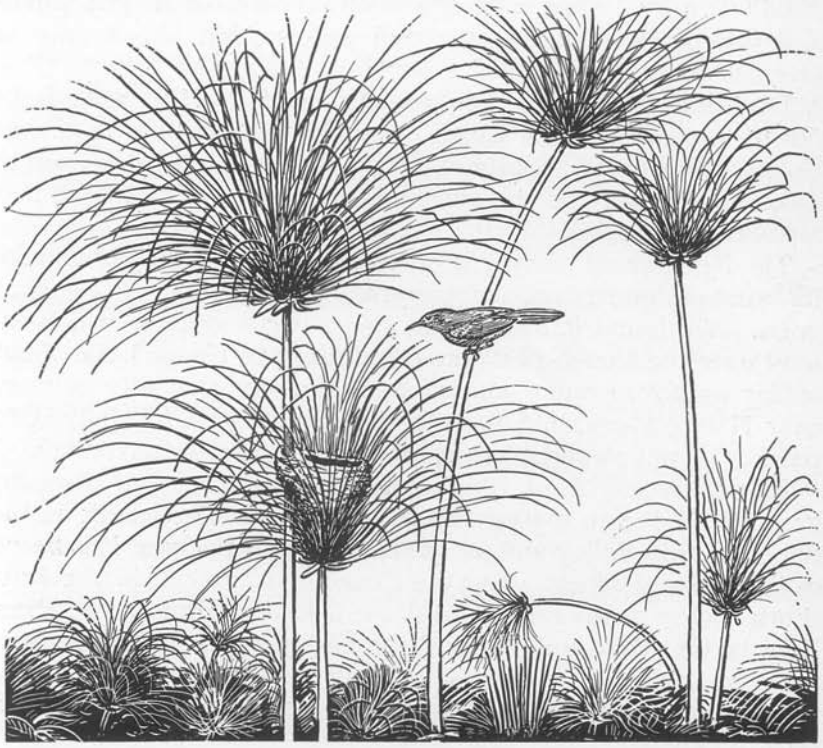

FIG. 20. Sketch to show how nest of *Calamocichla rufescens nilotica* is often supported in papyrus.

builders, as they hopped about on the papyrus stalks. Cup-shaped, it was placed in the middle of a papyrus head at a height of 11 feet and attached by its rim to the stem of another taller plant. Its materials had been gathered from grasses and papyrus. The three eggs were white, finely speckled with brown and more coarsely spotted with dark brown, the larger markings most

abundant around the blunt end. Dimensions: 20.3–21.2 by 15.1–15.5 mm.

The above method of supporting the nest is usual in papyrus, for I found two abandoned nests fixed in the same way, and Van Someren photographed one just like them. A young bird secured on October 14 had left a nest recently and attracted attention by a plaintive note quite unlike any of the adult. When built in elephant grass, nests must be similar to those described under *C. r. rufescens*.

The contents of eight stomachs were insect remains exclusively, generally small beetles, though one naked caterpillar was also found.

Calamocichla rufescens foxi (Sclater)

Calamornis foxi W. L. SCLATER, 1927, Bull. Brit. Ornith. Club, vol. 47, p. 118 (type locality: Lake Maraye, Kigezi District, Uganda); 1930, Systema avium Aethiopicarum, pt. 2, p. 514. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 312. LYNES AND SCLATER, 1934, Ibis, p. 43.

Calamoecetor rufescens foxi BANNERMAN, 1937, Ibis, pp. 297, 868 (Mushongero, L. Mutanda, 6000 ft.). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 105.

Calamoecetor foxi JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1044. GRANT AND M.-PRAED, 1941, Bull. Brit. Ornith. Club, vol. 61, p. 40.

DISTRIBUTION: Known only from the Kigezi District, especially near Lake Mutanda, but very likely to extend through the highlands near by, and to the shores of Lake Kivu. Lake Maraye is probably the same as Mureyhe or Muanga, a lake only a mile or two east of Lake Mutanda, at an elevation of about 6000 feet.

The type of *foxi*, a male with wing 85 mm. long, was secured in 1911 by T. V. Fox, who also obtained a young bird with wing 75 mm. In April, 1927, I collected a male with wing 83 mm. in papyrus near the southwest side of Lake Mutanda, and Pitman has taken a female with wing 80 mm. at Mushongero on Lake Mutanda.

Nothing is more certain than that *foxi* is simply a large highland race of *C. rufescens*, its wings exceeding the maximum for *nilotica* by some 3 to 5 mm. The haunts, behavior, and voice are exactly like those of *nilotica*, as I can attest from personal observation. The calls of this species are to be heard frequently from papyrus and from reeds (*Phragmites*) around the shores of Lake Bunyoni,

at 6700 feet, and I have also heard them from *Phragmites* on the western shore of Lake Kivu near Katana.

It seems very probable that Lake Kivu birds will prove to be *foxi*, for specimens taken in Toro and near the base of Ruwenzori average rather large for *nilotica*, and a male from Kita-Kita in the Manyema has the wing 81 mm. long.

[*Calamocichla rufescens ansorgei* Hartert]

Calamocichla ansorgei HARTERT, 1906, Bull. Brit. Ornith. Club, vol. 16, p. 52 (type locality: Duque de Bragança, northern Angola).

A large race, not very different in color from *nilotica* and *foxi*, evidently inhabits suitable spots in Angola within 115 miles of the Belgian Kwango District. When more specimens are collected, *ansorgei* may be found to reach Congo territory. The lack, so far, of any record of this species in the Kasai is difficult to explain.

KEY TO THE SPECIES OF *Chloropeta*

1. Bill relatively narrow, its width at nostril less than 5 mm.; hind toe with claw more than 15 mm. long; upper tail-coverts of adult rather rufous brown ..... *C. gracilirostris*
   Bill broader, width at nostril usually exceeding 5 mm.; hind toe with claw less than 14 mm.; upper tail-coverts of adult green like back 2
2. Crown of same green color as back; wing not more than 61 mm. long; rectrices 12 ..... *C. similis*
   Crown blackish or washed with brown, unlike green back; or if crown is green, then wing exceeds 61 mm.; rectrices 10 ..... *C. natalensis*

Chloropeta gracilirostris Ogilvie-Grant

Chloropeta gracilirostris OGILVIE-GRANT, 1906, Bull. Brit. Ornith. Club, vol. 19, p. 33 (type locality: Mokia, 3400 ft., southeast of Ruwenzori); 1910, Trans. Zool. Soc. London, vol. 19, p. 397, pl. 18, fig. 3. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 415 (L. Edward; British Ruanda). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 916. SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 115 (in part. Kabare); 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 46 (Nkole on L. Moero).

Calamonastides gracilirostris GRANT AND M.-PRAED, 1940, Bull. Brit. Ornith. Club, vol. 60, p. 91.

DISTRIBUTION: Known thus far only from marshes near Lake George, Lake Edward, Lake Bunyoni, Lake Mutanda, and Lake Moero, but certainly to be expected on Lake Kivu and in many other suitable localities.

This species differs strikingly from *C. natalensis* and *C. similis* by its long, slender bill and its very large feet. Although it has been made the type of a separate genus, *Calamonastides*, I prefer to retain it in the present group, to which I have no doubt it is allied. The resemblances to *Calamocichla* are undeniable.

For over 20 years the type specimen of *C. gracilirostris* remained unique. It had been secured in papyrus or reed beds near Mohokyia, close to Lake George, by Douglas Carruthers. Woosnam (1910) stated that a few others were seen along the shores of "Lake Albert." This may have been a slip of the pen, but perhaps they will yet be found at the southern end of Lake Albert.

It was my good fortune to rediscover the species in April and May, 1927, on Lake Edward and Lake Bunyoni. At Kabare on Lake Edward I collected a single adult male in worn plumage with whole tail in molt. On Lake Bunyoni, at 6700 feet above sea level, my attention was attracted by an unfamiliar song, a short series of loud, half-whistled notes, decidedly variable but high-pitched and usually of "chwee-chwee-chwee. . ." nature. Then a pair of birds was located in the thick fringe of reeds (*Phragmites*), the female in breeding condition. Her tail was in molt; only nine rectrices could be counted in that of the male. Another adult male secured the following day amid papyrus on Bunyoni had 10 rectrices, seemingly the full number.

A few days later, in papyrus to the southwest of Lake Mutanda, near 6000 feet, another example was seen as it flew across the path and later was heard singing in much the same style as described. These broad-billed warblers hop from stem to stem like *Calamocichla*, but are readily identified by their yellow breast. No doubt they are much more numerous in reed beds of the whole Kivu region than has been suspected.

They may indeed extend to the sudd of the Lualaba River, for in January, 1938, H. Brédo collected one male with yellow breast and two immature specimens with more ochreous coloration at Nkole, near the southern end of Lake Moero. These examples are smaller than those of the Kivu region, having wings only 51–56 mm. Adult males from Lake Edward and Lake Bunyoni have wings 63–64 mm., a female 60 mm. Corresponding differences are shown in other dimensions; metatarsi of Nkole birds are 21–22 mm. long, those of the northern specimens 23–25 mm. It does not seem likely that these differences can be due merely to immaturity.

My notes on the bare parts of *gracilirostris* are as follows: Iris in adults of both sexes orange-rufous; maxilla blackish brown, mandible pinkish buff, skin at corners of mouth dull orange, interior of mouth reddish orange; feet lead gray, with a tinge of bluish, soles light buffy gray. The contents of two stomachs were noted as remains of tiny insects.

Chloropeta similis Richmond

Chloropeta similis RICHMOND, 1897, Auk, p. 163 (type locality: Kilimanjaro, 10,000 ft.). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 303 (Rugege Forest; Bugoie Forest; west Ruwenzori, 2500 m.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 249 (northwest of L. Tanganyika 2000 m.). SCHOUTEDEN, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 340; 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 114; 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 338 (forest west of Astrida). MACDONALD, 1940, Bull. Brit. Ornith. Club, vol. 60, p. 82.

Chloropeta schubotzi REICHENOW, 1908, Ornith. Monatsber., p. 119 (type locality: Rugege Forest). O.-GRANT, 1917, Ibis, p. 90.

Chloropeta kenya O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 395 (Mubuku Valley, 6000–10,000 ft.; Butagu Valley); 1917, Ibis, p. 90.

Chloropeta natalensis similis GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 206 (Mt. Muhavura, 3000 m.; Mt. Sabinyo, 2800 m.; Mt. Mikeno, 3200 m.; Mt. Karisimbi, 3700 m.). GRANVIK, 1934, Rev. Zool. Bot. Africaines, vol. 25, p. 73. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 234. JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 916.

Chloropeta natalensis schubotzi SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 415. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 317 (Lulenga; Nya-Muzinga).

Chloropeta gracilirostris SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 115 (in part. Kibga, 2400 m.).

DISTRIBUTION: Highlands above 6000 feet from Uluguru and the Nyika Plateau in Nyasaland north to Mt. Kenya, Mt. Elgon, and the Imatong Mountains, and west to Ruwenzori, the Kivu District, and the mountains northwest of Lake Tanganyika.

This bird is not conspecific with *C. natalensis*. It has 12 rectrices, while *natalensis* has but 10, and in juvenal dress it is far less ochreous, more greenish, than is the young of *natalensis*. The two species sometimes live at about the same altitude in parts of eastern Africa, but *similis* keeps more to the shade of bamboos or trees, while *natalensis* requires lower, bushier growth, bracken, or high grass. In short, the latter species is more a bird of the open and does not ascend into thick mountain forests.

Chloropeta similis is usually seen only in the neighborhood of mountain forests or bamboos and ranges in the eastern Congo from about 6000 feet up to almost 12,000 feet in some places. On Ruwenzori it would find little food in the heath zone, and so is scarcely seen above 10,000 feet. Indeed on the western slope we noted it mostly around 7000 feet, along the lower edge of the bamboos. Among the Kivu Volcanoes, on the other hand, it is common in the herbaceous undergrowth of the *Hagenia* woods on Mt. Karisimbi, at 11,000 feet, and seems to extend down almost to 6000 feet. It is to be expected on the mountain ridges west of Lakes Edward and Kivu, and has been taken in the Rugege Forest, as well as west of the Ruzizi Valley and northwest of Lake Tanganyika.

The song is frequently heard, a short series of silvery notes, suggesting in form that of *C. natalensis*, but far sweeter in tone. The birds flit about in the shrubbery more like warblers than like flycatchers and are not sociable.

A nest found at 11,300 feet on Mt. Karisimbi, on June 14, was placed at 4 feet from the ground in a yellow-flowered composite, well hidden by the large green leaves. It was a cup 12 cm. in outside diameter, only 4 cm. inside, composed externally of thin, brown, leaf scales mixed with a little moss. The lining was of fine, brown plant fibers. The two naked young it contained showed a black spot at each side of the tongue, evidence of their relationship with the warblers.

Chloropeta natalensis major Hartert

Chloropeta natalensis major HARTERT, 1904, Bull. Brit. Ornith. Club, vol. 14, p. 73 (type locality: Canhoca, northern Angola). SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 339 (Kamaiembi). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 415. LYNES AND SCLATER, 1934, Ibis, p. 41 (Elisabethville). WHITE, 1944, Ibis, p. 147 (Luapula R.).

Chloropeta natalensis REICHENOW, 1887, Jour. Ornith., p. 305 (Leopoldville); 1903, Die Vögel Afrikas, vol. 2, p. 464. NEAVE, 1910, Ibis, p. 128 (Kambove, 4500 ft.).

DISTRIBUTION OF THE SPECIES: From Natal northward through eastern Africa to central Abyssinia, westward also to Angola and the southern Congo, and north of the equatorial forest to the Cameroon.

Chloropeta natalensis natalensis Smith, with crown little less greenish than the back and wings 59–64 mm., occupies south-

eastern Africa, north to Nyasaland. *C. n. major* is slightly larger and more brightly colored, with wings 62–69 mm. It ranges from Northern Rhodesia, Marungu, and the Manyema westward to northern Angola, Stanley Pool, and probably the Loango Coast. *C. n. batesi,* with crown distinctly darker and browner than the back, wings 56–61 mm., lives in the grasslands on the northern edge of the Cameroon forest and extends eastward to the Uelle and the eastern Ituri. *C. n. massaica* has a blackish brown crown and wings 59–66 mm. It is found from the northern end of Lake Nyasa through eastern Africa to Dangila in Abyssinia.

This is a lowland species which ascends into highlands where they are not heavily wooded and is known to reach altitudes of 7000 feet in Kenya Colony and 8500 feet in Abyssinia. In addition to the published records of *C. n. major* in the southern Congo, we have three adults taken near Luluabourg by Father Callewaert and four other examples collected by Rockefeller and Murphy at Kitutu in the Manyema, and Ketendwe, Sambwe, and Koni in Marungu. These Marungu localities are between 6000 and 6300 feet.

It is evident that *major* occupies a great area south of the Congo forest and extends into Northern Rhodesia and to the Mombolo district of Angola. It is a bird of high grass and bushy areas, not of woods. Rockefeller and Murphy compared its behavior with that of a grass warbler, and its nesting is evidently carried on from December to about March, during the rains.

Chloropeta natalensis batesi Sharpe

Chloropeta batesi SHARPE, 1905, Ibis, p. 468 (type locality: River Ja, Cameroon).

Chloropeta natalensis massaica SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 249 (in part. Irumu).

Chloropeta massaica batesi GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 207. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 415 (Yakoma district). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 246, fig. 75 (L. Albert district; Bwanda near Yakoma). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 112 (Faradje; Adra).

SPECIMENS: Pawa, immature male, October, 21. Faradje, four males, February 20, 26, April 27, November 9; female, February 26.

ADULTS OF BOTH SEXES: Iris dull dark brown; bill dark brown

above, dull ochreous yellow to pinkish buff on mandible; feet grayish to blackish.

DISTRIBUTION: Grasslands and clearings along the northern edge of the forest from British Cameroons to the Uelle, the southern Bahr-el-Ghazal Province, and perhaps the vicinity of Lake Albert. Specimens from Irumu may show some approach to *massaica*, but their wings measure only 59–60 mm. Van Someren (1932) referred specimens from Kigezi and southern Ankole to *batesi*, but I believe them to be closer to *massaica*.

We did not find this bird in the clearings of the Ituri forest, but it was fairly common in the grasslands immediately to the north, and near Irumu on the east. Schubotz collected specimens at Duma near the Ubangi River and at Amadi and Okondo's in Uelle, which I examined at the Frankfurt Museum.

Rather shy, and more often heard than seen, these broad-billed warblers dodge about the clumps of tall grass and in bushes bordering patches of swampy woods. The liquid but scarcely melodious song is heard at nearly all seasons. Despite considerable variation, it often sounds like "trip-trip-trel-el-el-el-el-el-el-el." Specimens taken in the Uelle in November and February were non-breeding, whereas an April example showed some enlargement of the gonads and a young bird was secured in October. It is therefore a rainy-season breeder.

Nests were found in the Cameroon by Bates[1] in second growth and cultivated land, in forks of large weeds and in tangled bushes. They were bulky, but with small cups inside, made of blades of grass or maize with a lining of finest grass tops. Two eggs were the rule, pinkish white finely spotted with maroon-red and lilac-gray, sometimes washed with dull pink at the larger end. Measurements were 16.5–18 mm. by 12–13.5 mm.

Chloropeta natalensis massaica Fischer and Reichenow

Chloropeta massaica FISCHER AND REICHENOW, 1884, Jour. Ornith., p. 54 (type locality: Tshaga, at foot of Mt. Kilimanjaro). O.-GRANT, 1908, Ibis, p. 307 (L. Kivu); 1910, Trans. Zool. Soc. London, vol. 19, p. 396 (Mubuku Valley, 6000 ft.; Butagu Valley, 4000 ft.; 60 miles north of Beni).

Chloropeta natalensis massaica REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 302. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 414. JACKSON, 1938, The birds of Kenya Colony and...

[1] 1911, Ibis, p. 525.

Uganda, vol. 2, p. 914. SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 114 (Rutshuru).

Chloropeta natalensis batesi VAN SOMEREN, 1932, Novitates Zool., vol. 37, p. 361 (Kigezi).

DISTRIBUTION: From the northern end of Lake Nyasa through East Africa to Dangila in Abyssinia. Not found on the western side of Lake Tanganyika but extending into the highlands near Lake Kivu and Lake Edward and around the base of Ruwenzori. I have seen it at 4300 feet on the southern base of Ruwenzori, also near Kayangira, 6200 feet, northwest of Lake Edward, and have collected it at 5500 feet near Luofu. There it called frequently from elephant grass and bushes in the valleys. Near Lugashali on the eastern side of the Rutshuru Valley, at 4900 feet, I noted it amid bracken, bushes, and grass. The song is similar to that of *C. n. batesi* and far less sweet and musical than that of *C. similis*. On the whole, *massaica* is not a common bird in this section of the Congo.

The nest has been described by Van Someren and by Jackson as a rather untidy and bulky cup placed in a fork of a shrub at 2 to 4 feet from the ground. Coarse grass blades, finer grass, and fibers for lining, bits of leaves, and once even a cast snake skin were used as materials. Eggs numbered two to four, pinkish, with a few liver-colored markings, or white with fine rufous spotting and purplish shell marks. Measurements given by Jackson are 18.5 by 13 mm.

KEY TO THE SPECIES OF *Acrocephalus* TO BE EXPECTED IN THE CONGO

1. Size large, wing always exceeding 75 mm.; upperparts never streaked..... ..... *A. arundinaceus*
   Size smaller, wing length less than 72 mm.....2
2. Crown heavily striped, back streaked with blackish; wing length 64–71 mm. ..... *A. schoenobaenus*
   Crown and back not streaked.....3
3. Wing only 51–64 mm. long, next-to-outermost primary about 5 mm. shorter than the longest primary; upperparts usually rufescent...*A. baeticatus*
   Wing 64–71 mm. long, next-to-outermost primary only 2–3 mm. shorter than the longest.....4
4. Emargination of inner web of next-to-outermost primary begins at 12–13 mm. from its tip; upperparts sometimes rather rufescent.....*A. scirpaceus*
   Emargination of inner web of next-to-outermost primary begins at only 9–11 mm. from its tip, upperparts not rufescent.....*A. palustris*

Acrocephalus baeticatus cinnamomeus Reichenow

Acrocephalus cinnamomeus REICHENOW, 1908, Ornith. Monatsber., p. 161

(type locality: north shore of Lake Edward); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 360.

Acrocephalus baeticatus cinnamomeus SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 503 (L. Kivu; L. Tanganyika). LYNES AND SCLATER, 1934, Ibis, p. 41 (L. Bangweolo). JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 1029 (L. Albert). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 105; 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 338 (Kibingo). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 48.

DISTRIBUTION OF THE SPECIES: From the Cape Province north to the upper White Nile, and westward to the Cameroon and Lake Chad. *A. b. baeticatus* (Vieillot) lives south of the Zambesi Valley and in southwest Africa, and is stated to be migratory. Its wing measures 58–64 mm. *A. b. suahelicus* Grote of Mafia Island, Zanzibar, Pemba, the eastern coastlands, and Zambesi Valley is supposedly a little smaller, with wings 57–60 mm. long. *A. b. cinnamomeus* may be slightly more rufous above, and its wings measure 51–57 mm. The range of the last-named race extends from Nyasaland to the upper Nile and Lake Chad, probably also to Benguella, but does not include the lowland forest of the Congo. A single deep brown example from the River Nyong in Cameroon has been separated as *A. b. nyong* Bannerman.

The race *cinnamomeus* is widely distributed in tropical Africa, frequenting marshes with reeds and high grasses especially in the eastern and southeastern Congo. It is rare in the Uelle, though Brother Joseph Hutsebaut tells me he has taken it once at Buta in April, 1941, and it is unknown in the Kasai. In addition to the published records, there are specimens in the Congo Museum from Rutshuru, collected by Ghesquière, and in the United States National Museum from Nyanza on Lake Tanganyika, obtained by Henry C. Rayen.

I have secured others at Nganzi and Lufu Karibu in the Semliki Valley and Katana on Lake Kivu, and a female with a fledgling near Alimbongo, 7300 feet, west of Lake Edward. Adults have the iris grayish brown, bill dark brown above, pinkish buff below, feet dull olive, claws dark gray. The skin at corners of mouth is yellowish, the whole inside of mouth reddish orange.

In the eastern Congo this rufescent reed warbler is resident throughout the year, but in Darfur Lynes found it a migrant, nesting in September. The song was like that of *Acrocephalus scirpaceus*, a monotonous repetition of short syllables with little

if any music. Nests and eggs were like those of *scirpaceus*, but with only two or three eggs in a set. They measured 15.5–17.1 mm. by 12.3–13.1, and were no doubt greenish white blotched with dark olive and ash-gray. At Lake Bangweolo Lynes found a male, probably about to breed, in December, while at Alimbongo in the Kivu eggs must have been laid towards July.

Acrocephalus scirpaceus scirpaceus (Hermann)

Turdus scirpaceus HERMANN, 1804, Observationes zoologicae, p. 202 (type locality: Alsace).

Acrocephalus scirpaceus scirpaceus SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 502. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 119 (Buta). JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 1027 (Magungo; Butiaba). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 45.

SPECIMENS: Avakubi, female, January 3. Faradje, male, January 16.

DISTRIBUTION OF THE SPECIES: Breeds from western Europe and Morocco to southern Russia and Turkestan. *A. s. scirpaceus* is somewhat fawn-colored, at least on rump and flanks. It occupies the western part of the summer range. From Palestine, Persia, and the Volga River mouth eastward lives *A. s. fuscus*, with more gray-brown upperparts and paler flanks.

Nominate *scirpaceus* migrates south into West Africa, the Belgian Congo, and eastern Africa as far as northern Mozambique. The grayer *fuscus* winters in eastern Africa, as far west as the Nile Valley and the eastern Congo, south to Tanganyika Territory.

The two forms are not always separable with ease, but one of my males from Faradje and others in the Congo Museum from Buta, Titule, Kabalo, and Nkole on Lake Moero seem to represent the nominate race, as do five examples obtained by Grauer in the Rutshuru Plain and at Kisenyi. This reed-warbler arrives in the northeastern Congo toward September and remains until March or early April. It is unusual within the lowland forest belt. About Faradje we found it hiding in thick bushes, the same cover that was frequented by nightingales. It gave short grating calls, or a succession of notes scarcely less harsh, which seemed like an abbreviated song.

Acrocephalus scirpaceus fuscus (Hemprich and Ehrenberg)

Curruca fusca HEMPRICH AND EHRENBERG, 1833, Symbolae physicae, Aves, fol. 55 (type locality: northern Arabia).

Acrocephalus scirpaceus crassirostris GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 124 (Kabare). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 502 (L. Edward). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 105.

SPECIMEN: Faradje, male, December 21.

ADULT MALE: Iris grayish brown; bill dusky brown above, pinkish buff below, interior of mouth orange; feet light brownish green.

DISTRIBUTION: Southern Palestine and the Caspian Sea, eastward to Turkestan and the southwest corner of Afghanistan. Migrates to eastern Africa, from Khartoum to Tanganyika Territory.

My specimen from Faradje in December, in good fresh plumage, represents the eastern race very well. A male and a female, collected by Henry Raven for the United States National Museum at Nyanza on Lake Tanganyika, probably belong here too. Gyldenstolpe's record from Lake Edward seems to be the only other known occurrence within our limits.

In Kenya Colony, to judge from the identifications by Meinertzhagen of a series now in the Rothschild Collection, *fuscus* is at least three times as numerous as *scirpaceus*. Behavior and dates of occurrence must be much the same for both forms.

[*Acrocephalus palustris* (Bechstein)]

Motacilla seu *Sylvia palustris* BECHSTEIN, 1798, *in* Latham, Allgemeine Uebersicht der Vögel, vol. 3, pt. 2, p. 545 (type locality: Thuringia).

Acrocephalus palustris REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 587 (Wadelai). GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 28. JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 1028 (Masindi; Mbarara). WINTERBOTTOM, 1938, Ibis, p. 274 (Fort Jameson; Lundazi in Loangwa Valley) WHITE AND WINTERBOTTOM, 1949, Check list of birds of Northern Rhodesia, p. 93 (Mwinilunga; Ndola).

The marsh warbler closely resembles the reed warbler, especially its eastern race, *fuscus*. It is best recognized by the fact that the emargination of the inner web of the next-to-outermost primary extends back only 9 to 11 mm. from the tip.

Acrocephalus palustris breeds in Europe from southern Sweden and France eastward to the southern Urals and Transcaspia. It migrates south in Africa, but only in the eastern half, and reaches Natal. While there is still no record from Congo territory, the fact that it has occurred at Wadelai, Masindi, and

Mbarara in Uganda and at Ndola and Mwinilunga in Northern Rhodesia shows that it must certainly be expected all along our eastern boundary.

Acrocephalus arundinaceus arundinaceus (Linnaeus)

Turdus arundinaceus LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 170 (type locality: Rückfort Sluice near Danzig).

Acrocephalus turdoides SEEBOHM, 1881, Catalogue of the birds in the British Museum, vol. 5, p. 95 (Landana). JOHNSTON, 1884, The River Congo, p. 364 (Lower Congo). DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, p. 148 (L. Tanganyika). SHARPE, 1890, *in* Jameson, The story of the rear column, p. 419. SHELLEY, 1890, Ibis, p. 159 (Yambuya). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127. EMIN, *in* Stuhlmann, 1927, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 71 (Mswa).

Acrocephalus arundinaceus REICHENOW, 1887, Jour. Ornith., p. 301 (Manyanga); 1905, Die Vögel Afrikas, vol. 3, p. 585. DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (Mpala). EMIN, 1922, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 3, p. 406 (Tunguru).

Calamodyta turdoides EMIN, 1892, Zool. Jahrb., vol. 6, p. 147 (L. Albert).

Acrocephalus, probably *arabicus* EMIN, 1922, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 3, p. 406 (Tunguru).

Acrocephalus arundinaceus arundinaceus SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 501. GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 26; 1931, idem, vol. 17, p. 409. VAN SOMEREN, 1931, Jour. East Africa Uganda Nat. Hist. Soc., special suppl., no. 4, p. 17. BANNERMAN, 1932, Ibis, p. 25; 1939, The birds of tropical West Africa, vol. 5, p. 42, fig. 10. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 119 (Buta). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 116 (Elisabethville).

SPECIMENS: Boma, male, January 7. Avakubi, male, December 2; immature male, February 14; two immature females, December 12; immature, February 13. Faradje, immature male, December 14.

ADULT MALE: Iris medium to rather dark brown; maxilla dusky brown, mandible light gray, becoming whitish at base; interior of mouth reddish orange; feet light lead-gray to greenish gray.

DISTRIBUTION OF THE SPECIES: From western Europe to Japan and southeastern Siberia, also from Egypt to India, the East Indies and Australia. Seventeen races were recognized by Salomonsen,[1] of which only four occur in Africa. *A. a. stentoreus* (Hemprich and Ehrenberg) is resident in Egypt and Palestine. *A. a. arundinaceus*, the great reed warbler of Europe and north-

[1] 1929, Jour. Ornith., Festschr. E. Hartert, pp. 267–281.

west Africa, migrates southward into Africa as far as Damaraland, Natal, and northern Cape Province. It is a rather tawny race, with wings 88–100 mm. long. *A. a. zarudnyi* Hartert, breeding in Transcaspia and Turkestan, is of about equal size but more grayish or olivaceous, less tawny, especially on rump and flanks. It migrates to eastern and southeastern Africa. *A. a. griseldis* (Hartlaub) is a smaller bird, with wing 78–83 mm., olivaceous in color, breeding in Mesopotamia and wintering in eastern Africa south to Fort Johnston, Nyasaland.

Nominate *arundinaceus* is a common winter visitor to nearly all parts of the Congo, though not reported from the highlands. From the depths of patches of tall grass, in damp spots or on river banks, or from dense growths of papyrus it is frequently heard giving a prolonged series of harsh, scraping sounds, repeated at short intervals. This recalls the voice of *Acrocephalus scirpaceus* but is very much louder.

In the northern Congo the birds doubtless arrive in September and leave in April. We have several specimens from Luluabourg in the Kasai, the earliest taken on November 16, and several from Usumbura, one collected as late as March 30.

Acrocephalus arundinaceus zarudnyi Hartert

Acrocephalus arundinaceus zarudnyi HARTERT, 1907, Bull. Brit. Ornith. Club, vol. 21, p. 26 (type locality: Djarkent, Turkestan). VERHEYEN, 1941, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 17, no. 16, p. 5 (Kiambi).

The grayish Turkestan race migrates regularly to East Africa, Nyasaland, and probably Natal. There is one example in the Rothschild Collection taken by Grauer at Entebbe, Uganda, on April 24, 1907. Its occurrence in the Congo was not proved until Mlle. H. Sips collected one example at Kiambi on the Luvua River, January 19, 1939.

The smaller form, *A. a. griseldis*, does not seem to reach Uganda, and there is little likelihood of finding it in the eastern Congo.

Acrocephalus schoenobaenus (Linnaeus)

Motacilla schoenobaenus LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 184 (Europe; restricted type locality: southern Sweden).

Acrocephalus phragmitis REICHENOW, 1887, Jour. Ornith., pp. 301, 307 (Manyanga; Stanleyville).

Acrocephalus schoenobaenus REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 588 (L. Tanganyika); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3,

p. 360 (Usumbura). HARTERT, 1909, Die Vögel der paläarkiischen Fauna, vol. 1, p. 566, figs. 108, 110. NEAVE, 1910, Ibis, p. 143 (Kambove). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 294 (Ukaika). SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 198 (Banc d'Anvers near Boma); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 119 (Buta); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 105 (Rutshuru); 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 46 (Nkole near L. Moero). GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 28 (Bangui; Boma). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 503. LYNES AND SCLATER, 1934, Ibis, p. 41 (L. Moero; L. Bangweolo). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 116 (Port Francqui). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 50, fig. 12.

Calamodyta schoenolaenus EMIN, 1922, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 3, p. 406 (Tunguru).

Calamoherpe schoenolaenus EMIN, 1922, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 3, p. 426 (Tunguru).

Acrocephalus schoenoboenus BERLIOZ, 1925, Bull. Mus. Hist. Nat. Paris, vol. 31, p. 350 (Luluabourg).

SPECIMENS: Avakubi, immature female, December 13. Bosobangi, male, December 9; female, April 28. Faradje, two males, September 17 and 30; immature male, December 3; female, September 30.

ADULT MALE (IN AUTUMN): Iris dark brown; bill dusky brown, slightly greenish along edges of both mandibles, lower mandible pinkish at base; feet light grayish brown.

DISTRIBUTION: The sedge warbler breeds in Europe and western Asia, from Ireland and Spain to the Yenisei River and the Altai, also in Algeria. Its winter quarters are in Africa, mostly east of Nigeria, and south to Damaraland, the Orange Free State, and Natal. It has been reported from every part of the Congo except the mountains of the east, and has been taken by Grauer at Kisenyi on Lake Kivu.

Arriving in September in the northern Congo, the birds remain throughout the northern winter even there. They were common in the Ituri and Uelle districts amid the rank grass along creeks and river banks; similar haunts are occupied in all the lowlands of the Congo. Usually the birds are silent, and at sundown we sometimes watched them taking insects on the wing.

At Lukolela I saw the sedge warbler in March; Bohndorff collected it at Manyanga in April. Grauer took one at Usumbura on April 19, and we found them lingering on the Ituri River until the end of that month. At Kabare on Lake Edward I noted one on May 10.

[*Lusciniola melanopogon melanopogon* (Temminck)]

Sylvia melanopogon TEMMINCK, 1823, Nouveau recueil de planches coloriées d'oiseaux, pl. 245, fig. 2 (type locality: Campagna, near Rome).

? *Galamodyta melanopogon* EMIN, 1922, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 3, p. 404 (Tunguru on L. Albert).

Lusciniola melanopogon BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 52, fig. 13 (L. Chad).

The mustached warbler of southern Europe might be expected to winter in tropical Africa, but thus far there has been little in the way of proof. The second Mecklenburg Expedition was said to have taken two specimens at Lake Chad, but these have disappeared. Emin believed he shot one at Tunguru on Lake Albert on October 31, 1887. He was certainly acquainted with the sedge warbler as well; but the record has never been confirmed nor is there any from the Anglo-Egyptian Sudan.

[*Locustella fluviatilis* (Wolf)]

Sylvia fluviatilis WOLF, 1810, *in* Meyer and Wolf, Taschenbuch der Deutschen Vögelkunde, vol. 1, p. 229 (type locality: Danube R. near Vienna).

Locustella fluviatilis JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 1024 (Kenya Colony).

The river warbler breeds from central Germany and Austria to the Ural Mountains and Transcaspia, then migrates to eastern Africa, the Zambesi, and occasionally to the Transvaal. Thus far it has not been found within our limits, but there is reason to expect it along the eastern borders near rivers or lakes.

KEY TO THE SPECIES OF *Hippolais* THAT MAY REACH THE CONGO

1. Under surface white or grayish white.....2
   Under surface light yellow.....3
2. Smaller, wing length 59–71 mm.....*H. pallida*
   Larger, wing length 83–89 mm.....*H. olivetorum*
3. Wing length 72–81 mm.....*H. icterina*
   Wing length 63–69 mm.....*H. polyglotta*

Hippolais pallida elaeica (Lindermayer)

Salicaria elaeica LINDERMAYER, 1843, Isis, pp. 342, 343 (type locality: Greece).

Hippolais pallida elaeica HARTERT, 1921, Die Vögel der paläarktischen Fauna, vol. 3, p. 2146 (L. Albert). GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 31. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1023 (Butiaba).

Hippolais pallida SCHOUTEDEN, 1942, Bull. Cercle Zool. Congolais, vol. 17, p. 7 (Buta ?).

SPECIMENS: Faradje, male, December 2; female, March 11.

ADULTS: Iris grayish brown; maxilla dusky brownish, mandible pinkish gray; feet greenish gray.

DISTRIBUTION OF THE SPECIES: Breeds from Spain, Morocco, and borders of the Sahara east to Turkestan. *H. p. pallida* (Hemprich and Ehrenburg) of Egypt is pale gray above, with wings 59–67 mm. *H. p. reiseri* Hilgert is very similar, with coloration perhaps a little sandier, and nests in the oases of southern Algeria, as well as along the southern edge of the Sahara. *H. p. elaeica* is darker gray above, with wings 63–69 mm.; its summer home extends from southeastern Europe and Palestine to Turkestan. *H. p. opaca* Cabanis is not unlike *elaeica* in color but has a markedly broader bill and wings 66–71 mm. It nests in Spain and from Morocco to northern Tunisia.

The Egyptian race *pallida* is reported to migrate southward in winter to the Sudan as far as Gondokoro but is not expected anywhere in the Congo. *H. p. opaca* winters in the savannas of Upper Guinea, from the Gambia to Nigeria. *H. p. elaeica* invades northeastern Africa in winter, venturing as far as the Uelle District, Lake Edward, Kenya Colony, and the coastlands near Tanga, in Tanganyika Territory.

In the vicinity of Faradje we noted this light gray warbler occasionally during the dry season in the tall reeds (*Phragmites*) fringing the Dungu River. Brother Joseph Hutsebaut writes me that he collected one male at Titule on March 17, 1941. The only other Congo locality from which I have seen specimens is the south shore of Lake Edward. Grauer collected two there on January 22, 1908. In East Africa it is said to feed in thickets and in the tops of acacia trees, and to be fairly common from October to late March.

[*Hippolais olivetorum* (Strickland)]

Salicaria olivetorum STRICKLAND, 1837, *in* Gould, The birds of Europe, vol. 2, pl. 107 (type locality: Zante, Ionian Islands).

The olive tree warbler breeds from the Balkan Peninsula to Syria and migrates south through the drier parts of East Africa to the Transvaal. Although it has been taken in Nyasaland and at Bulawayo, it is not to be expected in the Congo unless very exceptionally in the southeastern corner.

Hippolais icterina icterina (Vieillot)

Sylvia icterina VIEILLOT, 1817, Nouveau dictionnaire d'histoire naturelle, vol. 11, p. 194 (type locality: Nancy, France).

Hypolaïs icterina SHARPE AND BOUVIER, 1877, Bull. Soc. Zool. France, vol. 2, p. 476 (Condé).

Hypolais icterina BOCAGE, 1881, Ornithologie d'Angola, pt. 2, p. 556. REICHENOW, 1887, Jour. Ornith., p. 301 (Manyanga). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127. DE SCHAECK, 1927, Bull. Soc. Zool. Genève, vol. 3, fasc. 6, p. 80 (Luluabourg).

Hippolais hippolais REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 647. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 299 (Baraka).

Hippolais icterina SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 336 (Macaco; Belenge; Makumbi); 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 86 (Buta). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 499. LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 116 (Kasenga). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1021. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 33.

Hippolais icterina icterina GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 29.

DISTRIBUTION OF THE SPECIES: Breeds all across Europe, from France and Norway to western Siberia and northern Persia. The nominate race occupies most of that area, but *H. i. alaris* Stresemann of Persia is distinguished by having the two outer primaries slightly shorter.

The winter quarters of *H. i. icterina* are in tropical and southern Africa, mainly to the east of Cameroon and south to Damaraland, Bechuanaland, and Beira. It arrives near the Equator in September and leaves toward the latter part of April.

Only scattered individuals are seen as a rule, and they have been noted more often in the southern Congo than to the northward. I failed to notice any in the Uelle or Ituri. This is a broad-billed warbler, with light yellow underparts, and wings 72–81 mm. long. It has a close ally, *H. polyglotta* (Vieillot), with wings only 63–69 mm. long, nesting in southern Europe and North Africa, and migrating to the countries between Senegal and the Cameroon. Despite a single published record of *polyglotta* from Bukoba on Lake Victoria,[1] the latter species is scarcely expected to reach the Congo, even in the northwest.

KEY TO THE SPECIES OF *Sylvia* IN OR NEAR THE CONGO

1. Large, wing 84–95 mm. long; dusky bars or crescents often present on throat,

[1] Sassi, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 299.

chest, and flanks, and always indicated on under tail-coverts.....
.....*S. nisoria*
Smaller, wings 68–84 mm. long; throat or flanks never barred.....2
2. Crown covered by a distinct patch of black or rufous brown; wings grayish, 68–78 mm. long.....*S. atricapilla*
No crown patch, color of crown similar to that of back or grayer.....3
3. Greater wing-coverts and inner secondaries with conspicuous outer margins of rufous or cinnamon; throat white; wing length 68–75 mm., rarely 80 mm.....*S. communis*
Wings more uniform grayish brown; throat brownish white; wing length 75–84 mm.....*S. borin*

Sylvia borin (Boddaert)

Motacilla borin BODDAERT, 1783, Table des planches enluminéez d'histoire naturelle, p. 35 (type locality: France).

Sylvia hortensis SHELLEY, 1888, Proc. Zool. Soc. London, p. 20 (Tingasi). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 357 (Mubuku Valley, 5000 ft.).

Silvia hortensis DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (Lower Congo).

Sylvia simplex REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 649 (Songa). NEAVE, 1907, Mem. Proc. Manchester Lit. Phil. Soc., vol. 51, no. 10, p. 67 (Ndola and Msofu R. in Northern Rhodesia). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 299 (Mawambi; Ukaika).

Sylvia borin borin SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, pp. 335, 397 (Tshikapa; Ngombe in Kasai; Macaco; Kabambaie; Kwamouth); 1924, idem, vol. 12, p. 270 (Leopoldville; Kidada); 1926, idem, vol. 13, p. 198 (Temvo; Moanda). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 139 (Kabare). GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 32. HEINRICI, 1933, Vogelzug, vol. 4, p. 175 (Kitwala, 50 miles west of Masi Manimba, Kwango District). SCHÜZ, 1939, Proc. 8th Internatl. Ornith. Congr., Oxford (1934), p. 551, fig. 7 (map on p. 549).

Sylvia borin DE SCHAECK, 1927, Bull. Soc. Zool. Genève, vol. 3, fasc. 6, p. 80 (Luluabourg). SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 313 (Ngoma); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 119 (Buta; Mauda); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 106. LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 116 (Kasenga). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 12, fig. 1. GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 184.

Sylvia borin SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 494.

SPECIMENS: Niangara, male, November 9. Faradje, male, November 22.

DISTRIBUTION: Breeds in most of Europe except the extreme south, and eastward to the Yenisei River and Persia. The existence of a pale eastern race has not yet been proved. The

garden warbler migrates southward into Africa, to Upper Guinea as well as the more eastern parts, and reaches Damaraland, the Transvaal, and Natal. Although rarely seen within the equatorial forest belt, it must cross it on migration.

This is one of the commoner migrant warblers from the north but apt to escape attention because of its dull, light brown coloration. We used to see it occasionally in the savanna of the Uelle, and it has been reported from all parts of the Congo except the higher mountains. Grauer collected half a dozen on Lake Kivu and the northwest shore of Lake Tanganyika.

Reaching the Uelle as early as September 20, and the Kasai by early October, these birds remain at least until late April. They do some singing from thick cover before their departure.

One example, banded in East Prussia on June 26, 1932, was recovered at Kitwala in the Kwango District on October 12 of the same year.

Sylvia communis communis Latham

Sylvia communis LATHAM, 1787, Supplement to the general synopsis of birds, vol. 1, p. 287 (type locality: England). SCHOUTEDEN, 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 86 (Buta).

? *Sylvia* LEACH, 1818, *in* Tuckey, Narrative of an expedition to explore the River Zaire, p. 407 (Lower Congo).

Sylvia sylvia SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 299 (Baraka).

Sylvia curruca DE SCHAECK, 1927, Bull. Soc. Zool. Genève, vol. 3, fasc. 6, p. 80 (Luluabourg).

Sylvia communis communis GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 34. LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 116 (Saurimo in northern Angola). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 8.

DISTRIBUTION OF THE SPECIES: Breeds in Europe and Asia, from Scandinavia to the Mediterranean, in North Africa, and eastward to the Yenisei and Chinese Turkestan. Three subspecies are currently recognized.

Sylvia communis communis is the European race, with upperparts somewhat browner than *S. c. icterops* Ménétriés, which lives in summer from Asia Minor to the Caucasus and Persia. *S. c. rubicola* Stresemann, of Turkestan and Tian Shan, has wings scarcely longer but is supposedly buffier above. These differences are not very clear among birds wintering in Africa. According to Grant and Mackworth-Praed (1941) the race *communis* migrates south to Upper Guinea, Damaraland, and Southern Rho-

desia. Roberts records it from the Transvaal, and it is well known from East Africa. *S. c. icterops* is expected to pass through northeast Africa to Tanganyika Territory and Lilongwe in Nyasaland. *S. c. rubicola* is also stated by Grant and Mackworth-Praed to migrate through northwest India to Uganda, East Africa, the Nyika Plateau in Nyasaland, and even northeastern Angola.

There are not many Congo records for the whitethroat, and most of them are surely of the nominate race. Many birds winter even in the Sudan, and none is reported from deep in the equatorial forest. We do not know whether they fly over it or go around its eastern end. The arrival in the Congo must take place in October, departure in late April.

Whether the races *icterops* and *rubicola* occasionally reach the eastern or southeastern Congo remains to be learned. Button is reported to have secured *icterops* at Ndola in Northern Rhodesia.

Sylvia atricapilla atricapilla (Linnaeus)

Motacilla atricapilla LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 187 (Europe; restricted type locality: Sweden).

Sylvia atricapilla O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 357 (Mubuku Valley, 6000–7000 ft.).

Sylvia atricapilla atricapilla GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 33. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 494 (Ruwenzori). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 160. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1018. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 15 (west Ruwenzori, 6900 ft.).

DISTRIBUTION OF THE SPECIES: The blackcap breeds from the Azores, Cape Verde Islands, and North Africa through Europe to Persia and western Siberia. About five races seem recognizable, differing slightly in depth of coloration.

On Madeira and the Canaries lives the dark-backed *S. a. heineken* (Jardine); on the Balearic Islands *S. a. koenigi* Jordans, rather pale and small. *S. a. dammholzi* Stresemann, light gray above, occupies the Caucasus and North Persia, and *S. a. riphaea* Snigirewski of western Siberia is darker and more olivaceous above than *S. a. atricapilla*, the nominate race, which extends from the Urals to the Azores and the Cape Verde Islands.

The winter range of nominate *atricapilla* extends from the Mediterranean to forested Upper Guinea, Ruwenzori, and eastern

Africa south to Uluguru and the highlands around Lake Nyasa. It is rather strange that the blackcap has never been reported from southern Cameroon or any locality in the Congo save Ruwenzori, though in Kenya Colony it is a rather common visitor to the highlands. Most of the specimens taken there seem to belong to the European race, but Meinertzhagen[1] has reported six specimens of *S. a. dammholzi* from Mt. Kenya, and *S. a. riphaea* might well be expected to winter in that same region.

On the eastern slope of Ruwenzori the British Museum Expedition obtained four examples between 6000 and 7000 feet in the early months of 1906. In November, 1927, I shot an adult male at 7000 feet amid some bamboos near Kalongi, on the western side. My specimen is rather light gray on the back but can be matched with some examples from Europe.

In eastern Africa wintering blackcaps are most apt to be found near the edges of mountain forests, where they begin to arrive in October and leave again during March. Other occurrences may well be expected in the Kivu highlands.

[*Sylvia nisoria* (Bechstein)]

Motacilla nisoria BECHSTEIN, 1795, Gemeinnützige Naturgeschichte Deutschlands, vol. 4, p. 580 (type locality: Germany).

Sylvia nisoria JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 1019 (Butiaba).

The barred warbler nests from Germany and Denmark east to the Altai and Chinese Turkestan. It has been claimed that birds from the Tian Shan and Altai are paler above and have longer wings, but the race *merzbacheri* Schalow is of rather doubtful status.

The winter range of *nisoria* is in eastern Africa, the birds coming across the Red Sea and visiting Kenya Colony and Tanganyika Territory in some numbers. It has been claimed that some reach Southern Rhodesia. The months from October to April are spent in the tropics.

The species would scarcely be expected in the eastern Congo had not Sir Geoffrey Archer taken one example at Butiaba on the northeast shore of Lake Albert on November 30. There are other records from the vicinity of Khartoum, so the barred warbler is to be looked for in the northeast corner of the Congo.

[1] 1937, Ibis, p. 748.

KEY TO THE SPECIES OF *Phylloscopus* FOUND IN THE CONGO

Outermost primary shorter than primary-coverts; upperparts light yellowish green; underparts mainly pure white, but usually washed with yellow on throat region ..... *P. sibilatrix*

Outermost primary longer than primary-coverts; upperparts grayish or dull olive, becoming more brownish with wear; underparts soiled whitish, more or less washed with yellowish, especially on fore neck ..... *P. trochilus*

Phylloscopus trochilus trochilus (Linnaeus)

Motacilla trochilus LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 188 (Europe; restricted type locality: England).

Phyllopneuste trochilus HARTLAUB, 1882, Abhandl. Naturwiss. Ver. Bremen, vol. 8, p. 193 (Langomeri).

Phylloscopus trochilus JOHNSTON, 1884, The River Congo, p. 364 (Congo R.). O.-GRANT, 1908, Ibis, p. 294 (north of L. Tanganyika); 1910, Trans. Zool. Soc. London, vol. 19, p. 357 (Mubuku Valley, 5000 ft.). NEAVE, 1910, Ibis, p. 150 (Lufupa R.). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 365 (Beni; Usumbura; Kisenyi). MOURITZ, 1914, Ibis, p. 29 (Irume Mts. in Katanga). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 300 (Baraka; Ukaika; Irumu). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 201 (Tunguru; Mswa). BERLIOZ, 1925, Bull. Mus. Hist. Nat. Paris, vol. 31, p. 350 (Luluabourg). SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 285 (Elisabethville); 1935, idem, vol. 27, p. 402 (Rutshuru); 1941, idem, vol. 34, p. 266 (Kasenyi). BECQUET, 1942, Bull. Soc. Bot. Zool. Congolais, vol. 5, p. 22 (Nioka). GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 184.

Phylloscopus trochilus trochilus SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 335 (Macaco; Belenge; Kabambaie; Ngombe in Kasai; Tshisika); 1932, idem, vol. 21, p. 313 (Lulenga; Kisenyi; Ngoma); 1936, Ann. Mus. Congo, Zool., ser. 4, vol. 1, fasc. 2, p. 119 (Dramba; Mauda; Buta); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 106 (Mugunga, 1500 m.; Kamande); 1941, Rev. Zool. Bot. Africaines, vol. 34, p. 365; 1942, idem, vol. 36, p. 338 (Astrida). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 139 (Mt. Karisimbi, 3300 m.; Kabare; Angi). GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 24. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 503. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 567 (Ekibondo). TICEHURST, 1938, A systematic review of the genus *Phylloscopus*, p. 30 (Ruanda; Ruwenzori, to 10,000 ft.). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 56, fig. 15 (Ubangi R.). WHITE, 1946, Ibis, p. 92.

? *Phylloscopus collybita* DE SCHAECK, 1927, Bull. Soc. Zool. Genève, vol. 3, fasc. 6, p. 80 (Luluabourg).

SPECIMENS: Avakubi, male, November 4. Ngayu, female, December 19. Medje, male, March 23. Faradje, male, October 10; two females, February 9, October 18.

ADULT MALE: Iris dark grayish brown; maxilla dark brownish

gray, mandible of same color at tip, but yellowish at base; feet brownish green, under surface of toes yellow.

DISTRIBUTION OF THE SPECIES: The willow warbler breeds throughout most of Europe and eastward in Siberia to the Anadyr River. According to Ticehurst (1938) three races are to be recognized. In summer *P. t. trochilus* lives from Great Britain and France to southern Poland. Its wing measures 61–71.5 mm., its upperparts are usually olive-brown, with a yellow-green tinge, throat and breast dull pale yellow in breeding plumage. *P. t. acredula* (Linnaeus) breeds from Norway and East Prussia to the Yenisei River. This race in adult plumage is less yellowish on the breast than nominate *trochilus* and either lighter, yellower green above, or much more grayish. Its wing measures 62.5–73.5 mm. Young of both races in first winter plumage have much more yellow beneath than do the adults. *P. t. yakutensis* Ticehurst occupies the region from the Taimyr Peninsula to the Kolyma and Anadyr rivers. Its upperparts are mostly gray-brown, and the only yellow is beneath the wing. Length of wing 65–74 mm.

All three races migrate to Africa, but *trochilus* is the most numerous, wintering from about latitude 12° N. to Cape Town and across the entire width of the continent. The race *acredula* scarcely wanders west of the Cameroon or Stanley Pool, but goes south to Damaraland and Natal. East Africa and Uganda seem to be the limit for the travels of *yakutensis*, which must cover some 7000 miles on the way!

Willow warblers of the nominate race are numerous all over the Congo from October to April, and they begin to arrive from the north in September. Early dates are September 17 at Rutshuru, September 26 at Macaco in the Kasai, and October 6 at the Irume Mountains, Katanga. A late spring record is that from Usumbura, April 27.

In the savannas of the Uelle they are common all through the dry season, and in the clearings of the Ituri forest they seem most numerous as transients in November and in March. They do not avoid the highlands and have been reported from the mountain forest of Ruwenzori and at 10,800 feet on Mt. Karisimbi. During their African sojourn they feed on small insects in low bushes as well as in taller trees. Though silent most of the time, they have frequently been noted as singing, either in subdued tones or with full force.

The supposed record of *P. collybita* from Luluabourg must have been based on *P. trochilus*, for the chiffchaff's southern limit in Africa runs from about latitude 13° N. in the west to Taufikia on the White Nile and thence to Mt. Kenya and the slopes of Kilimanjaro.

Phylloscopus trochilus acredula (Linnaeus)

Motacilla acredula LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 189 (type locality: Upsala, Sweden).

Phylloscopus eversmanni O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 357 (Mubuku Valley, 7000 ft.).

Phylloscopus trochilus eversmanni GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 25. LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 116 (Banda; Luebo; Kasenga).

Phylloscopus trochilus acredula TICEHURST, 1938, A systematic review of the genus *Phylloscopus*, p. 34 (eastern Belgian Congo). WHITE, 1943, Ostrich, vol. 14, p. 11 (Mwinilunga, Northern Rhodesia); 1946, Ibis, p. 92 (Luluabourg).

DISTRIBUTION: Nests from Norway and Sweden to East Prussia, Russia, and Siberia to the Yenisei River and western Sayan Mountains. Migrates to Africa, keeping mainly east of longitude 15° E. and winters from the Sudan south to Damaraland and Natal between October and April.

The difficulty of identifying winter specimens is due to the fact that the wing averages only about 2 mm. longer than in *trochilus* and the coloration is not always very different. Some examples, however, have the upperparts almost without green, while others are lighter and more yellowish green than in *trochilus*. Any male with wing over 70 mm. and any female with wing exceeding 64 mm. may be suspected of belonging under *acredula*.

I can do little but accept the published records of this race for the Congo and add that some other specimens have doubtless been listed under *P. t. trochilus*. One male, for instance, taken by Schouteden at Ngombe, Kasai, seemed to me almost certainly *acredula*, for its wing measured 70.5 mm. and the upperparts were almost without any greenish wash.

The majority of Congo specimens belongs to the nominate race; *acredula* is not likely to occur in the western part of the colony; and the easternmost race, *yakutensis*, is scarcely to be expected even in the eastern Congo, though it has been taken on Mt. Elgon.

Phylloscopus sibilatrix (Bechstein)

Motacilla sibilatrix BECHSTEIN, 1793, Naturforscher, vol. 27, p. 47 (type locality: mountains of Thuringia, Germany).

Phylloscopus sibilatrix REICHENOW, 1887, Jour. Ornith., p. 306 (Leopoldville). O.-GRANT, 1908, Ibis, p. 294 (Ponthierville). SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 198 (Makaia Ntete). TICEHURST, 1938, A systematic review of the genus *Phylloscopus*, p. 69.

Phylloscopus sibilator REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 645. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 300 (Ukaika).

Phylloscopus sibilatrix sibilatrix HARTERT, 1909, Die Vögel der paläarktischen Fauna, vol. 1, p. 515, figs. 93, 94 (Congo). BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 369 (Molegbwe on Ubangi R.); 1939, The birds of tropical West Africa, vol. 5, p. 61. GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 25. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 504. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 119 (Mauda; Titule). JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 1034.

Phylloscopus sibilitrix VAN SOMEREN, 1931, Jour. East Africa Uganda Nat. Hist. Soc., special suppl. no. 4, p. 15.

SPECIMENS: Ngayu, female, December 21. Medje, sex?, March 23.

DISTRIBUTION: The wood wren breeds in Europe from Ireland and Spain to the foothills of the Urals and the Caucasus. No valid subspecies can be recognized. It migrates into Africa as far as the Gold Coast, southern Cameroon, the Mayombe District, Lualaba River, eastern Congo forest, Uganda, and northern Kenya Colony.

We found that *P. sibilatrix* winters in the clearings of the Ituri forest, as it must in the region farther west. It also occupies the savanna country of the Uelle, where arrival is to be expected toward early October and departure about the end of March.

KEY TO THE SPECIES OF *Seicercus* IN OR NEAR THE CONGO

1. Throat yellow 2
   Throat whitish, grayish, cinnamon, or brownish 3
2. Crown bright green, like back ..... *S. laurae*
   Crown dark brown or rufous brown, unlike greenish back .... *S. ruficapilla*
3. Back dark gray or brown, wing and tail-feathers edged with green, underparts dull gray, more or less washed with brown ..... *S. umbrovirens*
   Back bright green, crown not very different 4
4. Cheeks and supercilium cinnamon or rust color, throat and fore neck washed with cinnamon ..... *S. laetus*
   Cheeks and supercilium greenish white, throat and fore neck also whitish .. .. *S. budongoensis*

Seicercus budongoensis (Seth-Smith)

Cryptolopha budongoensis D. SETH-SMITH, 1907, Bull. Brit. Ornith. Club, vol. 21, p. 12 (type locality: Budongo Forest, Uganda). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 225 (Kampi-na-Mambuti).

Seicercus budongoensis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 507 (Ituri forest). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1037.

DISTRIBUTION: From Nyarondo in western Kenya Colony and the base of Mt. Elgon across Uganda to the eastern Ituri forest. In the Congo Museum there are a male and a female collected by Schouteden at Bondo Mabe, south of Arebi. Gyldenstolpe secured two at Kampi-na-Mambuti, west of Irumu, and I took two more near Moera, north of Beni.

The species is not likely to extend much farther to the west, as I never found it at Avakubi. While not a bird of mountain forest, it may well ascend to 5000 feet and has not been found below about 3300 feet. Living in pairs in heavy primary forest, it is unlikely to attract attention except by its song of about four high-pitched notes. One of my birds seemed to be a member of a mixed bird party moving along through the lower levels of the forest. Gyldenstolpe saw one feeding on the ground. Of the nesting nothing is yet known.

Wings of males measure 55–57 mm., of females 50–54 mm. Iris dark brown; maxilla blackish brown, mandible dull yellowish; feet gray.

Seicercus laetus (Sharpe)

Cryptolopha laeta SHARPE, 1902, Bull. Brit. Ornith. Club, vol. 13, p. 9 (type locality: Ruwenzori). REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 723; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 302 (northwest of L. Tanganyika). JACKSON, 1906, Ibis, p. 537. O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 407 (Mubuku Valley, 6000–9000 ft.; Butagu Valley, 7000 ft.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 260. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 257. GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 224 (Mt. Muhavura, 2800–3000 m.; Mt. Sabinyo, 2300–2700 m.; Lulenga).

Seicercus laetus SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 507. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1036. SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 114 (Kamatembe); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 338 (forest west of Astrida).

Seicercus laeta SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 313

(Burunga; Nya-Muzinga; Mt. Niragongo); 1933, idem, vol. 22, p. 375 (Kisenyi–Ruhengere).

DISTRIBUTION: Highlands near the eastern Congo border, from the Lendu Plateau and Ruwenzori south to the mountains northwest of Lake Tanganyika. While most of the published records are from Ruwenzori and the Kivu Volcanoes, this broad-billed warbler comes down in mountain forests to about 5500 and thus occupies many more localities than the high-level *C. umbrovirens*. I have taken specimens at Djugu, west of Lake Albert, at Mulu, northwest of Lake Edward, and on Mt. Kandashomwa, west of the Ruzizi Valley. Grauer also collected two west of Lake Edward and others in the Rugege Forest. The altitudinal range is from 5500 to 9200 feet, but woods are essential.

On Ruwenzori the species is seen from 6500 feet in the mountain forest up to 9000 feet near the upper limit of bamboos, and it is one of the common birds in the bamboo zone. Flitting actively along, sometimes in small parties, it behaves exactly like a warbler. I never noticed any loud song, and Gyldenstolpe mentioned only faint chirping notes.

About the central group of Kivu Volcanoes I noticed it several times at altitudes near 8000 feet, and specimens have been collected by others on both the eastern and the western volcanoes. Two young in juvenal dress, collected by Grauer, lack nearly all cinnamon color on face and throat. Their cheeks are washed with yellowish green, the throat being whitish.

Adults have the iris dark brown, maxilla dusky brown, a little yellowish along edges, and mandible yellowish buff. The corners of the mouth are yellow, and its interior is deep orange. The feet are leaden gray, sometimes slightly bluish or greenish, with gray claws and yellowish soles.

Nothing is known of the nesting habits, and my specimens give no clue as to any precise breeding season.

Seicercus laurae Boulton

Seicercus laurae BOULTON, 1931, Ann. Carnegie Mus., vol. 21, p. 54 (type locality: Mt. Moco, 6600 ft., Angola). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 79 (Kayoyo).

DISTRIBUTION: From the highland of Angola east to the Upper Katanga. Since Rudyerd Boulton collected the male type and a

female on one of the highest mountains in Angola, Lynes has secured a breeding male in September in a patch of forest at Kayoyo, 3700 feet, and Schouteden had earlier taken one example near Elisabethville, 4000 feet, which is in the Congo Museum.

This species is most nearly related to *S. ruficapilla* but is distinguished by its yellowish green crown and back and more extensive yellow on the upper breast. The wing length is 62 mm. in the male, 58 mm. in female; tail of male 43 mm., of female 39 mm.

Nothing is recorded of its behavior, but it doubtless frequents the densest woods available, at levels from 3700 to 6600 feet.

[*Seicercus ruficapilla ochrogularis* Moreau]

Seicercus ruficapilla ochrogularis MOREAU, 1941, Bull. Brit. Ornith. Club, vol. 61, p. 24 (type locality: Mt. Kungwe, 6500 ft., east of L. Tanganyika).

Seicercus ruficapilla (Sundevall) ranges from Cape Province to Usambara and Mt. Mbololo in eastern Taita, to the mountains northwest of Lake Nyasa, and those on the eastern side of Lake Tanganyika. In the warmer parts of its range it is restricted to montane levels, and seven races have been named. Of these, two approach our limits.

Seicercus ruficapilla johnstoni Sclater, with dark brown crown and yellow of throat not extending to breast, extends from southern Nyasaland to the Mafinga and Masuku mountains, where it lives in forest at levels of 6000 to 6500 feet.

Seicercus r. ochrogularis resembles *johnstoni* but has the yellow of throat, cheeks, and supercilium saffron rather than lemon-yellow and inhabits the Kungwe-Mahare mountain forests at about 6500 feet. Neither of these birds has yet been reported from Congo territory.

Seicercus umbrovirens alpinus (Ogilvie-Grant)

Cryptolopha alpina OGILVIE-GRANT, 1906, Bull. Brit. Ornith. Club, vol. 16, p. 117 (type locality: Mubuku Valley, 10,000 ft., Ruwenzori); 1910, Trans. Zool. Soc. London, vol. 19, p. 407, pl. 12, fig. 3; pl. 19, fig. 12, egg (Mubuku Valley, 10,000–13,000 ft.). SALVADORI, 1909, *in* Duke of Abruzzi, Il Ruwenzori, Parte Scientifica, vol. 1, p. 157 (Bujongolo, east Ruwenzori). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 267 (west Ruwenzori).

Cryptolopha umbrovirens alpina CHAPIN, 1928, Nat. Hist., vol. 27, p. 623.

Seicercus umbrovirens alpinus SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 507. SCHOUTEDEN, 1933, Bull. Cercle Zool. Congolais, vol. 9, p. 107. JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 1036.

DISTRIBUTION OF THE SPECIES: From the highlands of Yemen in southwestern Arabia to Uluguru and the Kivu District. *S. u. yemenensis* (Ogilvie-Grant) is the Arabian representative, *S. u. erythreae* (Salvadori) that in Eritrea. *S. u. umbrovirens* (Rüppell) occupies the highlands of central Abyssinia, and *S. u. omoensis* (Neumann) those of its southern parts and of northern Somaliland.

Seicercus umbrovirens mackenzianus (Sharpe), of Kenya Colony from Karamoja, Elgon, and the Mau to Mt. Kenya, is distinctly rufous on the flanks. *S. u. chyulu* Van Someren, darker on head and back, occupies the Chyulu Hills and north Paré Mountains. *S. u. dorcadichrous* (Reichenow and Neumann) is the race of Kilimanjaro and some mountains to the southward, while in Uluguru lives *S. u. fuggles-couchmani* Moreau.

Seicercus umbrovirens alpinus of Ruwenzori is a dark form, heavily washed with brown below, and *S. u. wilhelmi* of the Kivu differs in its more grayish coloration, with abdomen whitish. Both these forms have the iris dark brown, maxilla brownish black, with narrow yellowish edges near gape, skin at corners of mouth yellow, mandible ochreous yellow with dusky tip, and feet dull dark gray with a tinge of olive.

The race *alpinus* appears to be limited to the Ruwenzori Range, where I have seen it from 9300 feet up to 14,900 feet on the western slopes. It is the most common and characteristic bird of the tree heath zone and is frequently seen higher up in the more open senecio zone. As it flits about, singly as a rule, amid the lichen-draped heath trees or the *Helichrysum* bushes it reminds one of nothing but a warbler, despite its rather broad bill. The song is not loud, but very pleasing, a clear "chwee-chwee-chwee, chip-ip-ip," approaching a canary's trill.

De Witt Sage and I took three males in breeding condition and a female actually laying, between November 27 and December 4, toward the close of one of the year's wettest seasons. On the eastern slope Woosnam (1910) found a nest at the end of January, during one of the two drier seasons, which was placed on a ledge of rock under a great overhanging cliff. It was domed like the nest of a European chiffchaff, composed of fine grass and moss, and held three eggs. The latter were white, spotted all over with light red and lavender-gray, especially toward the larger end, and measured 18 by 13 mm. On the southeast slope at 12,000

feet J. T. Weekes found a nest with three young on December 29, placed 3 feet up in a mass of moss.

Seicercus umbrovirens wilhelmi (Gyldenstolpe)

Cryptolopha wilhelmi GYLDENSTOLPE, 1922, Bull. Brit. Ornith. Club, vol. 43, p. 37 (type locality: Mt. Muhavura, 3200 meters, Kivu Volcanoes); 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 223, pl. 1, fig. 1 (Mt. Mikeno, 3700 m.; Mt. Karisimbi, 3800 m.); 1926, Arkiv Zool., vol. 19A, no. 1, p. 67. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 271 (Mt. Niragongo).

Seicercus umbrovirens wilhelmi SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 507. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 313; 1933, Bull. Cercle Zool. Congolais, vol. 9, p. 107; 1933, Inst. Roy. Colonial Belge, Bull. Séances, vol. 4, p. 150; 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 114.

DISTRIBUTION: Kivu Volcanoes, from 9300 feet up to 12,600 feet, and doubtless on some other high mountains in the same region. Rockefeller and Murphy secured one example in a bamboo thicket at 9000 feet on Mt. Kandashomwa, west of the Ruzizi Valley.

This is a much less tawny race than either *alpinus* or *mackenzianus*, but in behavior and voice it is exactly like them. I found it between 10,000 and 12,600 feet on Mikeno and Karisimbi, in *Hagenia, Hypericum,* and heath trees. On Niragongo it was fairly common amid the heath trees from 9300 to 10,000 feet. In June, a dry period, one breeding male was found among the half-dozen adults collected, and two well-grown young were taken in that same month. This gives little indication as to any definite season of reproduction.

Hylia prasina prasina (Cassin)

Sylvia prasina CASSIN, 1855, Proc. Acad. Nat. Sci. Philadelphia, vol. 7, p. 325 (type locality: Moonda R., Gaboon).

Hylia prasina REICHENOW, 1887, Jour. Ornith., p. 309 (Kasongo); 1905, Die Vögel Afrikas, vol. 3, p. 622; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 364. SHARPE, 1890, *in* Jameson, The story of the rear column, p. 417. SHELLEY, 1890, Ibis, p. 160 (Yambuya). O.-GRANT, 1908, Ibis, p. 292 (Ponthierville; Semliki Valley); 1910, Trans. Zool. Soc. London, vol. 19, p. 365 (Mpanga Forest, 5000 ft.; Beni; Mawambi). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 305 (Moera; Beni–Mawambi; Ukaika). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 292; 1923, idem, vol. 11, p. 334 (Luebo; Kamaiembi; Makumbi; Ngombe in Kasai; Basongo; Kabambaie; Djoko-Punda); 1924,

idem, vol. 12, p. 418 (Bikoro; Eala; Ikengo); 1925, idem, vol. 13, p. 14 (Kunungu); 1926, idem, vol. 13, p. 197 (Makaia Ntete).

Hylia prasina prasina BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 373 (northern Belgian Congo). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 153 (Kartushi; Malisawa; Kampi-na-Mambuti; Lower Congo). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 712. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 139 (Panga; Kotili; Medje; Bondo Mabe; Nava R.; Mauda). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 571 (Saidi). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 3, p. 1369.

SPECIMENS: Bafawaboli, male, September 11. Avakubi, male, January 11; immature male, female, November 9. Medje, male, September 19; immature female, March 16. Rungu, female, June 24.

ADULTS: Iris dark brown; bill blackish brown, upper edge of mandible and corner of mouth yellow; feet brownish green.

DISTRIBUTION: Portuguese Guinea to Cameroon and northern Angola, including Fernando Po, and eastward to the Uelle, the Nandi district of Kenya Colony, and the vicinity of Bukoba. Specimens from Upper Guinea and Uganda are very much alike in color and size, but those from the island of Fernando Po, separated as *H. p. poensis* Alexander, differ in the more whitish coloration of throat and breast. Male birds are always distinctly larger than females.

Mainly because of the broad, flattened form of the epibranchials, or "horns" of the hyoid apparatus, Bates[1] decided that this small greenish bird with pale eyebrows must be allied to the sunbirds rather than to the warblers. He even proposed a family Hyliidae, in which *Pholidornis* was also placed, because of similar flattening of the hyoids. In other respects these two genera bear little resemblance to the Nectariniidae or to each other, and for the present I prefer to retain *Hylia* in the Sylviidae. It must be admitted that its firm plumage, rather strong bill, and well-developed nasal operculum are all somewhat exceptional.

In the Congo *Hylia prasina* is found wherever there is heavy lowland forest, or even good forest galleries, but does not ascend much above 5000 feet. From the Mayombe Forest to the Semliki Valley, and from the Upper Uelle to the southern Kasai it seems to be a rather common bird. Wherever there is thick undergrowth in the forest, or in sunny openings grown up with

[1] 1924, Ibis, p. 253; 1930, Handbook of the birds of West Africa, p. 462.

tangled vegetation, or in second-growth woods, it is encountered from time to time, usually within 10 yards of the ground. Its dull coloration is not apt to attract the eye and only occasionally one is seen in a mixed bird party. The call-note is harsh and sunbird-like, but the bird has also a pleasant whistled note of two syllables.

In the Cameroon Bates[1] took breeding birds at all seasons, and in the Ituri we found considerable enlargement of the gonads in June and September. A young bird still attended by its mother was secured in November, but an adult male in January was non-breeding. Nesting must continue throughout the whole of the rainy period.

Nests are globular, built loosely of dead leaves and lined with plant down. They are hidden in forks of bushes, in pineapple plants, or on the lowest branches of small trees. Eggs are white, unmarked. Bates reported two sets of one each, measuring about 19 by 14.5 mm., but Holman found two nests, each with two eggs, and many empty ones, which might serve as sleeping quarters.

The food of *Hylia* consists entirely of insects, though I made definite notes in only two cases. Bates mentioned scale insects as often eaten.

FAMILY **TURDIDAE**. CHATS, ROBINS, THRUSHES

KEY TO THE GENERA OF TURDIDAE AS FOUND IN THE CONGO

1. Outermost primary one-half, or more than one-half, as long as the next primary 2
   Outermost primary less than one-half as long as the next, sometimes even shorter than the primary-coverts 15
2. Outer rectrices conspicuously tipped with white 3
   Outer rectrices not plainly tipped with white 4
3. Middle and greater wing-coverts tipped or margined with white ..... *Erythropygia* (p. 487)
   Wing-coverts not so marked, but alula quills white-tipped, and some primaries show white on outer webs near base ..... *Tychaëdon* (p. 482)
4. Outer rectrices mainly rufous, the central ones either rufous, brown, or blackish 5
   Outer rectrices not rufous, except sometimes at very base, or along margin of outer webs 9
5. Throat and breast dull gray or whitish, sometimes with black spotting ..... *Cichladusa* (p. 513)
   Throat and breast not so colored 6

[1] 1908, Ibis, p. 567; 1909, idem, p. 71.

6. Back deep rufous, a whitish line over the eye.....*Bessonornis* (p. 504)
Back usually brown, olive, gray, or black, with at most a faint wash of rufous.....7
7. Rictal bristles very long, about as long as bill.....*Sheppardia* (p. 502)
Rictal bristles not so greatly developed.....8
8. Small; wing only 65–72 mm. long; central rectrices blackish.....
.....*Cossyphicula* (p. 516)
Mostly larger; and with no distinct black pattern on tail unless wing exceeds 79 mm.....*Cossypha* (p. 517)
9. Outer rectrices with large areas of yellow, their tips black; throat dark slate color, a small white spot on fore neck, breast yellow.....
.....*Pogonocichla* (p. 510)
Rectrices more plainly colored, with rufous, if present, only at very bases or on outer margins.....10
10. Tail mainly black, deep gray, or blackish brown; head and back similarly dark, with sometimes a patch of white on head or throat.....11
Tail brown or olive, no black on back, little black about head.....13
11. Abdomen and rump rufous, rectrices with some rufous at very base.....
.....*Thamnolaea* (p. 534)
Abdomen never rufous, tail wholly dark.....12
12. Wing length less than 80 mm.....*Pentholaea* (p. 549)
Wing length more than 85 mm.....*Myrmecocichla* (p. 537)
13. Tail less than 40 mm. long, greenish; throat and chest orange.....
.....*Stiphrornis* (p. 507)
Tail more than 40 mm. long, brownish; throat whitish, cinnamon, or rufous
.....14
14. Small: wing length less than 78 mm.; rictal bristles about as long as bill..
.....*Sheppardia* (p. 502)
Larger: wing length over 80 mm.; rictal bristles less developed..*Alethe* (p. 495)
15. Well-marked white areas on bases of primaries and outer secondaries, but often hidden when wing is folded.....16
No distinct white areas on bases of those remiges, though inner margins may be whitish or rufous, or there may be rufous areas.....17
16. White areas on bases of primaries extend across both webs; rump white...
.....*Myrmecocichla* (p. 537)
White areas towards bases of inner primaries and adjacent secondaries do not extend beyond inner webs; rump not white.....*Geokichla* (p. 573)
17. Primaries and outer secondaries with rufous or cinnamon areas on basal portion of inner webs.....18
Inner webs of remiges not so marked, though there are usually lighter inner margins.....20
18. Breast cream-colored, with heavy black spotting.....*Geokichla* (p. 573)
Breast rufous or brown, without spots.....19
19. Bill relatively long, of normal thrush form, culmen to base about 19–21 mm.
.....*Neocossyphus* (p. 563)
Bill short, widened at base like a flycatcher's, culmen to base about 15–16 mm.....*Stizorhina* (p. 567)
20. Outer rectrices broadly tipped with white, tail elsewhere bright rufous, with some black subterminal bars.....*Erythropygia* (p. 487)

Tail not so colored....21
21. Rump and upper tail-coverts uniform dark brown, olive, or grayish, similar to back; bill of adults yellow to orange-red; wing more than 104 mm. long....*Turdus* (p. 581)
Rump or upper tail-coverts white or rufous, differing from back, or else they are spotted or barred with black....22
22. Upper tail-coverts white, sometimes lightly tipped with rufous or blackish. 23
Upper tail-coverts rufous, usually unspotted, but sometimes with bars or central spots of black....24
23. Wing less than 80 mm. long....*Saxicola* (p. 551)
Wing more than 80 mm. long....*Oenanthe* (p. 544)
24. Large, with wing exceeding 95 mm.; head of adult males bluish; females more gray or brownish, speckled....*Monticola* (p. 571)
Smaller; coloration more often plain brownish or grayish, sometimes with black on cheeks or throat....25
25. Wing length 83 mm. or more; metatarsus exceeding 24 mm.; color brownish, tail more rufous, without variegated pattern....*Luscinia* (p. 561)
Wing length usually less than 83 mm.; metatarsus less than 24 mm....26
26. Upper tail-coverts and back spotted with black....*Saxicola* (p. 551)
Upper tail-coverts plain rufous....27
27. Outer rectrices rufous, with distinct blackish tips; never any black on throat ....*Cercomela* (p. 557)
Outer rectrices rufous, with no more than a dusky stripe on outer web; males with black on throat in breeding plumage....*Phoenicurus* (p. 559)

KEY TO THE CONGO SPECIES OF *Tychaëdon*

Ear-coverts gray, an ill-defined grayish band across chest but no cinnamon wash on the whitish breast....*T. leucosticta*
Ear-coverts reddish brown, chest and sides of breast with a conspicuous wash of cinnamon or light rufous....*T. barbata*

Tychaëdon leucosticta collsi (Alexander)

Erythropygia collsi ALEXANDER, 1907, Bull. Brit. Ornith. Club, vol. 19, p. 46 (type locality: Libokwa, near Uelle R., Belgian Congo). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 427 (northeastern Congo forest).

Erythropygia reichenowi SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 289 (Beni).

Aëdonopsis collsi CHAPIN, 1927, Bull. Amer. Mus. Nat. Hist., vol. 53, p. 478.

Erythropygia collsi collsi SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 485. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 118.

SPECIMENS: Avakubi, four males, February 27, April 11, 17, May 18; immature male, May 27; female, June 2; immature female, September 18. Ngayu, male, August 2. Babeyru, male, July 29. Manamama (between Ngayu and Bafwabaka), female, May 1.

ADULTS OF BOTH SEXES: Iris dark brown, bill black, with base of lower mandible gray, feet pale flesh color.

DISTRIBUTION OF THE SPECIES: From the forests of Sierra Leone to Canhoca in northern Angola and eastward to the Semliki Valley. The nominate race, known from only a few localities in Upper Guinea, is washed with buff on the breast and is still rustier on the flanks. *T. l. collsi* has been found only in the heavy forests of the northeastern Congo; its chest and flanks are washed with gray, not buff. Six adult males from the Ituri have wing 78.5–82 mm., tail 61.5–67, culmen to base 18–19, metatarsus 26–27. Two adult females: wing, 70, 72; tail, 54, 55; culmen to base, 17, 17.5; metatarsus, 23, 25.

Tychaëdon leucosticta reichenowi (Hartert) appears to be known only from the type, a male collected at Canhoca in northern Angola by W. J. Ansorge. Its wing measures 82 mm., tail 74, culmen to base 18, metatarsus 27.5. It would seem that this bird differs from *collsi* not only in its longer tail but in the more grayish, less ruddy coloration of the back.

Colls's ground robin is really not rare in untouched areas of the Upper Congo forest from Stanleyville and the Lower Uelle eastward to the vicinity of Irumu and Beni. I have heard it singing from Ayena near the Tshopo River and Banalia on the Aruwimi to Ibambi on the northern edge of the Ituri forest and along the Irumu-Beni road. But I have never been surprised that there are so few specimens in museums. In addition to those already mentioned in print I know of only one immature bird from Angu in the Berlin Museum and another young female which we secured at Angumu on July 31, 1937.

The bird's extraordinary shyness accounts for its apparent rarity. My first specimen was captured by natives in 1910, and it was not until July, 1913, near Ibambi, that I became aware of a new bird song, as sweet as any I had ever heard, although its author proved more than elusive—almost ghostly.

The performance was prolonged and unusually melodious, a rather high-pitched, warbling lay, alternately rising and falling, and then stopping unexpectedly. After much stalking I made sure that it was a small bird perching in the undergrowth, but it would always see me first and fly off, though sometimes singing again from its new concealment. My black helper, Nekuma, long made a special search for it, and in September, 1913, he secured a female

of *T. l. collsi* which had accompanied a singing bird. This was not very satisfying evidence, and it was not until February of the following year that I observed and collected a singing male.

During this dry period we camped in the forest along the Ituri River, and two of the birds were often heard at daybreak near our camp. Early one morning, finally, they started their music very close to me, so close that it was hard to say from what side it came, but kneeling low and peering about I succeeded in locating one of them. I afterwards learned that this ground robin is not fond of dense herbaceous growth, such as phryniums, but prefers

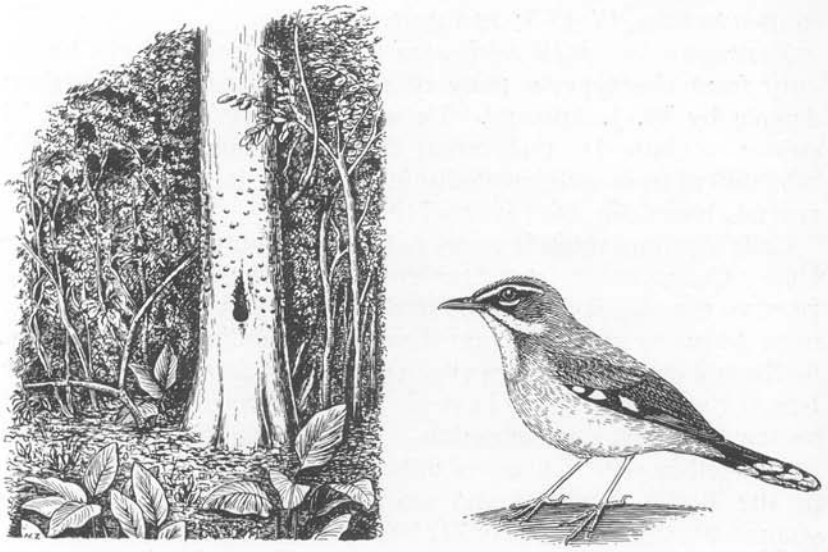

FIG. 21. Colls's forest chat, *Tychaëdon leucosticta collsi*, with sketch to show location of a nest in a hole in tree trunk.

a more open growth of woody bushes in virgin forest and seems to favor the vicinity of large, rounded termite mounds.

We gave *collsi* the palm as the finest singer of the dense forest. Not knowing any Mangbetu name for it, Nekuma spoke of it as "the bird that plays the bugle," or "the king of music." The Ababua of the Lower Uelle, I learned, have put the song to words: "When I die, don't tie me up in palm-splints, the rats would see me; but bind me up with stout bark, and they won't find me." This corresponds well with the usual length of the song, three to

five seconds. Like *Cossypha niveicapilla*, it can vary the volume of its voice, a weak delivery sometimes giving an impression of distance, but unlike *Cossypha* it sings its own song with little variation and no suspicion of mimicry. The only defect, if such it be, was a flow of notes so smooth as to suggest something mechanical, a manner savoring somewhat of the phonograph.

Besides their remarkable song, these small thrushes have a low call, a short hoarse "chuck!," sometimes repeated at intervals as they walk about on the ground. I am inclined to think that they sing throughout the year; they certainly do so from February to September. The breeding season likewise is a long one, for birds with gonads enlarged were procured in February and June, and a nest was found on April 11.

We were following an elephant path that morning on the north bank of the Ituri when one of these birds fluttered away from the base of a large tree, alighting on the ground where it was hidden immediately. At the spot whence it had flown we were rewarded by finding its nest, concealed in a small natural cavity in the bole of the tree, about 5 feet from the ground. There was a single nestling, whose feathers were just beginning to burst their sheaths, in a small cup nest composed mainly of thin dry plant stems like those of flowers, with a few dry leaves.

The old birds were so suspicious that only after an hour and a half of waiting did the male bird come walking about on the dry leaves at the base of the tree. Two days afterward the young bird disappeared, though surely not ready for flight. Such disappearances of nestlings or eggs, and abandonment of nests when disturbed, seemed more frequent than in northern climes. Such a general rule it is that natives say the birds carry off their eggs or young to safety.

Evidence from 10 stomachs shows *Tychaëdon l. collsi* to be almost wholly insectivorous. No fruit was present, but insects always, and in addition two small millipedes and several tiny snails had been swallowed. Among the insects we noted several small beetles, the heads of termites (once), a small caterpillar and another insect larva, as well as one grasshopper.

[*Tychaëdon leucosticta reichenowi* (Hartert)]

Erythropygia reichenowi HARTERT, 1907, Bull. Brit. Ornith. Club, vol. 19, p. 95 (type locality: Canhoca, Angola).

It would not be surprising if this subspecies were found in suitable forest patches along the Kwango River, where it might reach Belgian Congo territory.

Tychaëdon barbata barbata (Finsch and Hartlaub)

Cossypha barbata FINSCH AND HARTLAUB, 1870, Die Vögel Ost-Afrikas, Nachträge und Berichtigungen, p. 864 (type locality: Caconda, Benguella). DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, p. 148 (L. Tanganyika). NEAVE, 1907, Mem. Proc. Manchester Lit. Phil. Soc., vol. 51, no. 10, p. 63 (road to Ndola, Northern Rhodesia); 1910, Ibis, p. 140 (Kambove, 4500 ft.; Kaluli R.; upper Lualaba R.; Lufupa R.).

Erythropygia barbata DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (Mpala). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 297 (Dogodo R.); 1929, Bull. Cercle Zool. Congolais, vol. 5, p. 103 (Elisabethville).

Erytropygia barbata SALVADORI, 1907, Boll. Mus. Zool. Anat. Comp. Torino, vol. 22, no. 570, p. 8 (Lukonzolwa).

Tychaedon barbata SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 286.

Erythropygia barbata barbata SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 485 (Katanga). VERHEYEN, 1940, Mus. Roy. Hist. Nat. Belgique, vol. 16, no. 2, p. 5 (Kanzenze).

DISTRIBUTION OF THE SPECIES: From Angola east to Northern Rhodesia, the Katanga, and the eastern coast of Africa from Southern Somaliland to Portuguese East Africa and Zululand.

Tychaëdon barbata barbata ranges from Angola to Lake Tanganyika and the west side of Lake Nyasa. *T. b. rovumae* (Grote), living at lower levels in Nyasaland, ranges to the coast of southern Tanganyika Territory and south to Inhambane. It is ruddier brown above, more rufous on the chest, and the white throat area is not bordered with gray. *T. b. quadrivirgata* (Reichenow) of the coast of Kenya Colony is paler beneath than *rovumae*, and *T. b. greenwayi* (Moreau) of Mafia and Zanzibar islands is more grayish above. *T. b. erlangeri* (Reichenow) is a small pale race of the lower Juba River. A deeply colored race, *T. b. wilsoni* Roberts, is described as ranging from northeastern Zululand to northeastern Transvaal.[1]

It is interesting to note the close similarity in color pattern between *T. barbata* and *T. leucosticta*, the latter differing mainly in the comparative lack of rufous pigmentation. There must also be much similarity in behavior and voice. *T. signata*

[1] It seems that *quadrivirgata* and the other eastern races may be specifically distinct from *T. barbata* (see Benson, 1946, Bull. Brit. Ornith. Club, vol. 67, p. 32).

(Sundevall) of Cape Province, Natal, and Zululand is another close ally.

Tychaëdon barbata barbata is rather widely distributed in the southeastern Congo and ranges northward to the Manyema District, although not known from the Kasai. It keeps mostly to thickets, close to the ground, but sometimes ventures out into savanna woods. Rockefeller and Murphy obtained specimens in the Marungu highland at Kasoko, 4100 feet, and Lubenga, 5650 feet.

The song has been described by Benson as a beautiful crescendo, heard most frequently in the early part of the rainy season. Nesting is known to be in progress from September to December. The site for the nest is a hollow in a tree or stump, usually about a yard from the ground. Its materials include a little grass and rootlets, and the eggs are either two or three, very pale greenish, with heavy spotting of russet brown and lilac. Their dimensions are about 19.4–20.5 by 14.4–15.5 mm.

KEY TO THE CONGO SPECIES OF *Erythropygia*

1. Whole upperparts often rufous, but back sometimes brown; no white markings on wing-coverts, no streaks on lower parts; wing 74 mm. or longer.. ..... *E. galactotes*
   Rump rufous, but crown and back usually browner; wing-coverts with prominent white spots or margins; wing less than 73 mm. long..... 2
2. Chest only indistinctly streaked with dark gray on a whitish ground; back dark brown, a little lighter but scarcely more rufous than the dusky brown crown..... *E. hartlaubi*
   Chest more distinctly streaked with black or dark brown; back rufous or rufous brown, crown grayish or brown..... *E. leucophrys*

Erythropygia leucophrys munda (Cabanis)

Thamnobia munda CABANIS, 1880, Ornith. Centralbl., p. 143 (type locality: Malanje, northern Angola).

Erythropygia munda REICHENOW, 1887, Jour. Ornith., p. 306 (Leopoldville); 1905, Die Vögel Afrikas, vol. 3, p. 770.

Erythropygia ruficauda SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 338 (Tshisika). BERLIOZ, 1925, Bull. Mus. Hist. Nat. Paris, vol. 31, p. 349 (Luluabourg).

Erythropygia ruficauda munda SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, pp. 338, 398 (Kabambaie; Macaco; Kwamouth).

Erythropygia leucophrys munda DE SCHAUENSEE, 1932, Proc. Acad. Nat. Sci. Philadelphia, vol. 84, p. 191 (Boma). BOWEN, 1934, Proc. Biol. Soc. Washington, vol. 47, p. 165. GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 184.

Erythropygia leucophrys ruficauda BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 68 (Brazzaville).

SPECIMENS: Boma, male, January 8. Leopoldville, two males, July 6, December 21.

ADULT MALE: Iris dark brown; bill dark brown with base of mandible yellow; feet light brown.

DISTRIBUTION OF THE SPECIES: From southern Cape Province north to the Loango Coast, clearings in the Congo forest, and Lado on the White Nile. Also in the eastern part of the continent to Uganda and Kenya Colony, and if *leucoptera* is conspecific (as now seems certain) to Somaliland.

Erythropygia leucophrys leucophrys (Vieillot) of Cape Province and Natal is heavily streaked on the breast and virtually without rufous on the tail quills. *E. l. ovamboensis* Neumann of Southwest Africa and southern Angola is a little more ruddy and has but a few streaks on the fore neck. Farther north in Angola and in the Kasai and Lower Congo the streaking of the chest becomes more extensive, and the bases of the outer rectrices become rufous. These are the characters of *E. l. munda*.

In the clearings of the equatorial forest, from the Loango Coast to the Ituri, lives *E. l. ruficauda*, differing from *munda* mainly in the greater extent of rufous on the rectrices. *E. l. vansomereni* of Uganda and the eastern Congo border is a little more rufous on the back, a little lighter rufous on the rump than *ruficauda*, while *E. l. zambesiana* of Rhodesia, the lower Zambesi Valley, Nyasaland, and the southeastern Congo has the tail similarly rufous, with black tips and bars a little narrower. *E. l. soror* Reichenow, of the coastal areas of Tanganyika Territory, is very like *zambesiana*.

Erythropygia leucophrys brunneiceps Reichenow of the arid region of Tanganyika Territory and adjacent area in Kenya Colony is larger, darker above, with more white on wing-coverts, and with conspicuous blackish streaks on the chest. From the base of Kilimanjaro, the Taita district of Kenya Colony, and the dry country near Baringo, north to Somaliland, the coloration is paler, the chest streaking light gray and very faint, the white on the wing more extensive, and the tail long and very rufous. The northern birds are *E. l. leucoptera* (Rüppell), those of eastern Kenya Colony *E. l. vulpina* Reichenow.

In this outline I have purposely omitted a number of inter-

mediate races which have been named from various regions outside the Congo. A very complete review by Bowen, in 1934,[1] recognized no fewer than 15 subspecies. The race *munda* is the common form in the savannas of the southern Congo, recognizable by the small areas of rufous on its rectrices, the breast being rather well streaked. We have a considerable series from Luluabourg and several examples from the shores of Stanley Pool and the Lower Congo. In all this wide region of savannas it is a rather common bird, frequenting bushes and high grass, and singing from low trees. In behavior it is exactly like *E. l. ruficauda*.

Erythropygia leucophrys ruficauda Sharpe

Erythropygia ruficauda SHARPE, 1882, Proc. Zool. Soc. London, p. 589, pl. 45, fig. 1 (type locality: Malimbe, Portuguese Congo); 1890, *in* Jameson, The story of the rear column, p. 420. HARTLAUB, 1887, Zool. Jahrb., vol. 2, p. 316 (in part). REICHENOW, 1887, Jour. Ornith., p. 301 (Manyanga); 1905, Die Vögel Afrikas, vol. 3, p. 773 (in part). SHELLEY, 1890, Ibis, p. 159 (Yambuya). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127. FLOWER, 1894, Proc. Zool. Soc. London, pp. 600, 601 (Ipoto).

Erythropygia ruficauda saturata NEUMANN, 1920, Jour. Ornith., p. 83 (type locality: Yambuya, lower Aruwimi R.).

Erythropygia leucophrys ruficauda SCLATER, 1929, Bull. Brit. Ornith. Club, vol. 49, p. 63; 1930, Systema avium Aethiopicarum, pt. 2, p. 482. BOWEN, 1934, Proc. Biol. Soc. Washington, vol. 47, p. 163 (Avakubi; Uelle). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 422 (in part. Malimbe). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 118 (Buta; Mauda).

Erythropygia zambesiana saturata BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 423 (Uelle R.).

SPECIMENS: Panga, male, September 25. Medje, juvenile male, May 19. Avakubi, eight males, January 20, February 18, April 2, 9, June 2, October 27, November 9.

ADULT MALE: Iris dark brown; bill brownish black, with base of mandible pinkish to light yellow, corners of mouth yellow; feet pinkish gray to pale buff.

DISTRIBUTION: From Malimba on the coast of the Enclave of Cabinda to the clearings in the Upper Congo forest, eastward to the Ituri. In the Uelle District the species is rare but seems to be represented by this race. At the eastern margin of the Congo forest this scrub robin becomes scarce, and in the Rut-

[1] Proc. Biol. Soc. Washington, vol. 47, pp. 157–167.

shuru Valley it is replaced by the race *vansomereni*.

About Avakubi in the Ituri forest *E. l. ruficauda* was not uncommon but lived of course only in clearings where a scrubby second growth was coming up, or where fallen trees still littered the ground. This provided cover, for by nature the birds are retiring, and no females were collected. The song of the male is given from a perch in some small tree and consists of a few semi-musical notes.

In that latitude the season of reproduction lasts virtually through the whole year, for males with enlarged testes were taken in the Ituri during January, February, April, June, October, and November. The nest is not known but must be similar to that of *E. l. vansomereni* and *zambesiana*. Our young specimen retains enough of the juvenal plumage to show that the feathers of the back have ochreous brown centers and dusky borders, giving the spotted pattern characteristic of so many thrushes.

Insects furnish all the food, and among the contents of the few stomachs examined there was one small caterpillar.

Erythropygia leucophrys vansomereni Sclater

Erythropygia leucophrys vansomereni W. L. SCLATER, 1929, Bull. Brit. Ornith. Club, vol. 49, p. 62 (type locality: Mokia, southeast of Ruwenzori); 1930, Systema avium Aethiopicarum, pt. 2, p. 483. BOWEN, 1931, Catalogue of Sudan birds, vol. 2, p. 44 (Kajo-Kaji; Yei); 1934, Proc. Biol. Soc. Washington, vol. 47, p. 163 (Rangu in southern Bahr-el-Ghazal Province). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 118 (Mahagi Port).

Erythropygia ruficauda HARTLAUB, 1887, Zool. Jahrb., vol. 2, p. 316 (in part. Djanda). REICHENOW, 1891, Jour. Ornith., p. 62; 1905, Die Vögel Afrikas, vol. 3, p. 773 (in part. Djanda). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 372 (Mokia). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 3, p. 287 (L. Albert).

Erythropygia brunneiceps soror REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 373 (Ruanda). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 288 (Urundi).

Erythropygia leucoptera ruficauda SCLATER AND M.-PRAED, 1918, Ibis, p. 683 (Yei).

Erythropygia ruficauda ? subsp. VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 237 (Kigezi; Kivu).

Aidon leucopterus EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 56 (Nyamsansi on L. Albert).

Aedon leucopterus EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 261 (Madjamboni).

Erythropygia zambesiana vansomereni JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1000.

DISTRIBUTION: From the Lado district of the southern Sudan through Uganda and the vicinity of Lakes Albert and Edward to the Kivu and Karagwe. This race differs from *ruficauda* in being more rufous on the back, with narrower black tips on the median rectrices.

Besides the published records from the western side of Lake Albert and the southeastern base of Ruwenzori, there are specimens collected by Rudolf Grauer in the Rutshuru Plain, on the highland west of Lake Edward, and in the Kagera basin. I have myself seen this bird at Katwe and at the north end of the Kasali Mountains.

It is at home in thickets, gives a churring alarm note and more melodious song. A nest found by Serle[1] near Lake Victoria was cup-shaped and compact, built of grass blades, a few twigs, and a little earth, the lining of rootlets. Placed in a tuft of coarse grass, it held two eggs. These measured 18.5 by 13.9 and 19.4 by 14.1 mm., and were creamy white with profuse spotting of light chestnut and lilac.

Erythropygia leucophrys zambesiana Sharpe

Erythropygia zambesiana SHARPE, 1882, Proc. Zool. Soc. London, p. 588, pl. 45, fig. 2 (type locality: Tete, Zambesi R.). NEAVE, 1910, Ibis, p. 141 (Dikulwe R., 4000 ft.; upper Lufira R.; upper Lufupa R.). SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 286 (Kafubu R.).

Erythropygia ruficauda DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, p. 148 (L. Tanganyika); 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (Mpala).

Erythropygia leucophrys makalaka BOWEN, 1934, Proc. Biol. Soc. Washington, vol. 47, p. 164 (Marungu).

Erythropygia leucophrys zambesiana BOWEN, 1934, Proc. Biol. Soc. Washington, vol. 47, p. 164 (Katanga District ?). LYNES AND SCLATER, 1934, Ibis, p. 41 (L. Bangweolo). VINCENT, 1935, Ibis, pp. 502, 503 (Katanga). GRANT AND M.-PRAED, 1940, Bull. Brit. Ornith. Club, vol. 61, p. 19 (in part). VERHEYEN, 1947, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 23, no. 10, p. 4 (Musosa).

Erythropygia leucophrys ruficauda BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 422 (in part. Lufupa R.).

Erythropygia leucophrys kabalii WHITE, 1944, Bull. Brit. Ornith. Club, vol. 64, p. 49 (type locality: Chikonkwelo stream, Balovale, Northern Rhodesia; also at Mwinilunga, and possibly Katanga); 1946, Ibis, p. 90 (Mwinilunga).

Erythropygia zambesiana zambesiana GRANT AND M.-PRAED, 1947, Bull. Brit. Ornith. Club, vol. 67, p. 59.

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[1] 1943, Ibis, p. 68.

DISTRIBUTION: From the coast of Portugese East Africa to the eastern part of Rhodesia, Nyasaland, and the Katanga. I cannot believe that *zambesiana* is specifically distinct from *leucophrys*, as has recently been claimed, nor do I think that the Katanga birds need be separated as either *makalaka* or *kabalii*. Both these races are more or less intermediate between *munda* and *zambesiana*, and we must expect considerable intergradation.

In the Katanga Neave reported *E. l. zambesiana* to be a shy, restless little bird, frequently found among thickets and long grasses on the edge of native gardens. Its song consisted of a few penetrating notes constantly repeated. Rockefeller and Murphy obtained specimens at Baudouinville and at Lubenga, 5650 feet, in Marungu.

Lynes found a nest with two eggs at Bangweolo in December. The nest is usually placed low down in a large tuft of grass and is built of dry grasses, lined with rootlets. The eggs are white with brown or rust-red blotches and spots, measuring 18.2–19.2 by 13.6–14.7 mm. A nest with three eggs was found in northwest Rhodesia near the Kafulafuta River in January by Paget-Wilkes.[1]

Erythropygia hartlaubi Reichenow

Erythropygia hartlaubi REICHENOW, 1891, Jour. Ornith., p. 63 (type locality: Mutjora in upper Semliki Valley, East Congo); 1905, Die Vögel Afrikas, vol. 3, p. 775 (Karevia; Nyangabo). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 372 (Mubuku Valley, 6000 ft.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 288 (Rutshuru Plain; Beni; Moera; Irumu). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 297 (Mai-na-Kwenda; old Mission St. Gustave; Bulaimu; Kibati); 1932, idem, vol. 21, p. 314 (Ngoma); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 118 (Poko); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 106 (Mugunga, 1500 m.; Nzulu, 1600 m.). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 163. FRIEDMANN, 1930, The African Republic of Liberia and the Belgian Congo, vol. 2, p. 761 (Kamaniola). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 484.

Cossypha griseistriata SHARPE, 1902, Bull. Brit. Ornith. Club, vol. 13, p. 8 (type locality: Kangow's, Toro, Uganda).

Erytropygia hartlaubi LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 32 (Rutshuru).

Erythropygia hartlaubi hartlaubi VAN SOMEREN, 1932, Novitates Zool., vol. 37, p. 376 (Kigezi). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 424, fig. 114. JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 1003.

[1] 1931, Ibis, p. 482.

SPECIMENS: Babonde, male, July 16. Rungu, male, June 27. Nzoro, four males, April 21, August 6, 8.

ADULT MALE: Iris dark brown; bill blackish with a little light gray at very base of mandible, corners of mouth pale yellow; feet bluish gray or pinkish gray.

ADULT FEMALE: Similar to male; feet pale brownish gray tinged with lilac.

DISTRIBUTION: High-grass savannas, usually near forest borders, from the western Cameroon to the northern Congo, Uganda, and Kenya Colony east to the base of Mt. Kenya. In the eastern Congo it extends southward through the Kivu District to the Manyema; and while there is no record from the Kasai, this scrub robin is known from Vungu in the Lower Congo and Ndala Tando in northern Angola.

I can find no real difference between specimens from the Semliki Valley and those of Kenya Colony or of the Cameroon, and therefore do not recognize *E. h. kenia* Van Someren.[1] To understand the distribution one must remember that very high grass and shrubbery are essential to this bird. It lives not only in lowlands, but up to levels of 7000 feet and more, provided the vegetation is suitable. It does not dwell in solid forest.

In the Uelle District it is found occupying a relatively narrow belt, for we never saw it at Faradje, and but once near Niangara. It prefers the country to the southward near the forest, where there is more elephant grass, and near Nzoro we found it common, as it probably was also near Rungu, Pawa, and Babonde. Hartlaub's scrub robin was generally observed about the high, cane-like grass known in the Uelle trade dialect as "baka," and the song given by the male from the top of some small tree, often overlooking the elephant grass, consists of half a dozen short whistled notes, repeated at frequent intervals. The effect is pleasant but not particularly musical.

We collected the species there only from April to August, but as breeding males were examined in three of the months concerned, it is safe to say that breeding is carried on during the rainy period of the year. Two out of three stomachs held pieces of insects, including one grasshopper, while the third had a small millipede.

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[1] 1931, Jour. East Africa Uganda Nat. Hist. Soc., no. 37, p. 196 (Mt. Kenya).

Along the eastern border of the Congo I subsequently saw and collected the species near the new post of Beni, at Bambumé's village close to the type locality, on the plateau northwest of Lake Edward at 7200 feet, at Luofu, and to the east of the post of Rutshuru. In 1929 Rockefeller and Murphy secured a male at Kita-Kita, south of Kama in the Manyema District.

Very little is known about the nesting. At Jinja, Uganda, in February Belcher found a nest only 8 inches from the ground in a mass of prickly creepers about a yard high. There were two eggs.

Erythropygia galactotes syriaca (Hemprich and Ehrenberg)

Curruca galactodes var. *syriaca* HEMPRICH AND EHRENBERG, 1833, Symbolae physicae...Avium, decas 1, fol. bb (type locality: Beyrouth, Lebanon).

Agrobates galactotes familiaris VRIJDAGH, 1949, Bull. Cercle Zool. Congolais, vol. 19, p. 23 (Ishwa Plain).

Erythropygia galactotes syriacus VRIJDAGH, 1949, Gerfaut, year 39, p. 74.

DISTRIBUTION OF THE SPECIES: Portugal, Spain, North Africa, east to Turkestan and northwest India, and in the dry area south of the Sahara from Senegal to Somaliland. There are probably five races, differing either in size or in amount of rufous coloration above; three of them are migratory. *E. g. galactotes* (Temminck), very rufous and with wings 84–90 mm., nests from Portugal and Morocco to Palestine and migrates to the French Sudan and the vicinity of Khartoum. *E. g. minor* (Cabanis) is sedentary, from Senegal across the Sudan to Eritrea and North Somaliland, and it is rufous but small, wings only 77–83 mm. In the interior of eastern Somaliland lives *E. g. hamertoni* Ogilvie-Grant, still smaller and darker brown.

Two other eastern races migrate into northeastern Africa. From Greece, Asia Minor, and Syria *E. g. syriaca*, with brown back and rufous rump, comes south to Kavirondo, Taveta, and Mombasa. After breeding from Transcaucasia to Turkestan *E. g. familiaris* (Ménétriés) travels to the northern borders of Kenya Colony and Uganda. This last race is more grayish on the back, less rufous on rump.

On the Ishwa Plain near Mahagi, December 9, 1942, J. M. Vrijdagh obtained a male specimen which he has finally referred to *syriaca*. Its wing is said to measure 84 mm.; its back is dull brown. Only in this corner of the Congo is the species to be expected in its off season.

In referring *galactotes* to the genus *Erythropygia* I am merely following the custom of recent years. The striking resemblance in color between this species and *Erythropygia paena* cannot be denied. Meinertzhagen[1] would transfer the whole genus to the Sylviidae and states that the young are unspotted. While I have seen no spotted young of *galactotes*, I do find plenty of light spotting on the upper surface in the juvenal plumage of *Erythropygia paena*, *leucophrys*, and *hartlaubi*. The chest in the two latter species is also dappled, as it should be for young Turdidae. While the species *galactotes* does seem to be a northern offshoot of the African *Erythropygia*, it may deserve further investigation.

KEY TO THE CONGO SPECIES OF *Alethe*

1. Middle of the crown with a partially concealed yellowish or orange rufous patch.....*A. castanea*
   Middle of crown uniform blackish, brown, or gray; a light superciliary line present, though not always conspicuous.....2
2. Throat whitish, chest soiled whitish, or with a wash of dull buff.....*A. poliocephala*
   Throat and fore neck rufous or chestnut, chin gray.....*A. poliophrys*

Alethe castanea castanea (Cassin)

Napothera castanea CASSIN, 1857, Proc. Acad. Nat. Sci. Philadelphia, vol. 8, p. 158 (type locality: Moonda R., Gaboon).

Alethe castanea SCHOUTEDEN, 1920, Rev. Zool. Africaine, vol. 7, p. 192 (Temvo).

Alethe castanea castanea SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 199 (Ganda Sundi). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 478 (Gaboon, perhaps to northern Angola).

DISTRIBUTION OF THE SPECIES: Forested areas from Southern Nigeria, Fernando Po, and the Cameroon eastward to Uganda and south to the Kasai District and Lower Congo. Schütt is reported to have found it in northern Angola. In Upper Guinea, from Togo to Portuguese Guinea, the closely allied *A. diademata* (Bonaparte), which may be regarded as another race, takes its place.

Alethe castanea castanea lacks the white tail spotting of *diademata* and has a much more rufous back. It ranges from the Benin Division of Southern Nigeria and the Island of Fernando Po through the lowland forests of the Cameroon and Gaboon south-

[1] 1949, Bull. Brit. Ornith. Club, vol. 69, p. 110.

ward to the Belgian Mayombe. *A. c. woosnami*, with upperparts a little less rufous, replaces the nominate form in the whole Upper Congo forest and Uganda.

There are but two published records of *castanea* from the Mayombe District, though it is probably not rare there. I have heard it calling at Ganda Sundi, and in voice and behavior it is known to agree with *woosnami*.

The only description of a nest is by Bates,[1] who had one brought him by natives. It was flattish, made of fine rootlets, with a little moss, bits of bark, and earth intermixed; the lining was of black rootlets. The situation was reported as beneath the end of a decaying log in the forest. The eggs were pinkish white, nearly covered by spots and blotches of rich maroon, light red, and dull lilac, and the dimensions appear to have been about 24–26 by 17–18 mm.

Alethe castanea woosnami Ogilvie-Grant

Alethe woosnami OGILVIE-GRANT, 1906, Bull. Brit. Ornith. Club, vol. 19, p. 24 (type locality: Irumu, eastern Ituri District, Belgian Congo); 1910, Trans. Zool. Soc. London, vol. 19, p. 374, pl. 15, fig. 1. REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 372.

Alethe castanea woosnami SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 289 (Beni; Moera; Mawambi; Ukaika). VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 244 ("Ruwenzori"). BEQUAERT, 1922, Bull. Amer. Mus. Nat. Hist., vol. 45, p. 313 (Avakubi). SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 337 (Basongo; Luebo; Belenge); 1925, idem, vol. 13, p. 15 (Kunungu; Mongende); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 117 (Poko; Buta; Panga; Mauda; Nava R.). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 478 (Uelle R.). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 416. JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 992.

Alethe CHAPIN, 1931, Nat. Hist., vol. 31, p. 603 (Lukolela).

Alethe castanea SCHOUTEDEN, 1939, Bull. Cercle Zool. Congolais, vol. 16, p. 15 (Ituri).

SPECIMENS: Basoko, immature male, December 11. Banalia, female, September 26. Avakubi, four males, January 17, February 24, December 7; two immature males, September 6, November 7; two juvenile males, January 17, May 18; two females, January 17, February 5; immature female, January 17; juvenile female, November 1. Penge, male, April 20; female, April 21. Gamangui, three males, February 5, 16; five females,

[1] 1911, Ibis, p. 623; 1930, Handbook of the birds of West Africa, p. 399.

February 4, 7, 8, 10, 16; immature female, February 6. Niangara, male, June 15.

ADULTS OF BOTH SEXES: Iris dark brown; bill black; feet bluish gray.

IMMATURE FEMALE: Iris grayish brown; bill brownish black, corners of mouth yellow; feet dull greenish buff.

DISTRIBUTION: Lowland forests of the Upper Congo and of Uganda, eastward to Mabira. In the gallery forests of the Uelle it ranges a little to the north of Niangara but not to Faradje. In the Kasai it reaches the region of Luebo, and in the Middle Congo this race has been found near Lukolela and Bolobo.

In Uganda and the eastern Congo borderland it is restricted to the heaviest forests and does not ascend the higher mountains. Grauer obtained a few specimens near Kindu on the Lualaba, and the range should extend to the border of the Manyema forest.

Though never seen in the clearings, this is a common bird in the Ituri forest, keeping to the heavily shaded undergrowth. It has a soft, whistled note of two syllables, the second slightly prolonged, which Nekuma taught me to remember as "man-zui..." That seemed most appropriate, for driver ants are known as "manzui" in the Bangala trade dialect of the Uelle. At Lukolela it was equally common and known to the Bobangi as "elosi." The syllables "lo-sî," they explained, imitated its call, so often heard in the forest.

If the name were not already preëmpted for the Formicariidae of the New World, this bird should most certainly be known as an ant thrush, so often is it found in attendance upon columns of doryline ants. So we may call it the rufous-crowned ant chat. Du Chaillu,[1] the discoverer of the species, was well aware of this habit, and Alexander, Sjöstedt, and Bates have added further notes.

My own observations have already been given on pages 216–219 of Part 1 of the present work. Darting down from the bushes on the moving columns of ants, these ant chats seize food of some sort, and fly up again to a perch, where they flit the wings slightly after the manner of the American bluebird. I conclude that Du Chaillu was right in asserting that they prey on the insects routed out by the ants, rather than on the ants themselves.

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[1] 1861, Explorations and adventures in equatorial Africa, p. 319.

Very probably the insects being carried by the ants are also seized, or the birds would not so often be active where the column is crossing an open path. This would also account for the occasional ants that are swallowed.

Every one of the 10 stomachs of *Alethe c. woosnami* examined contained insect remains, and yet in only three cases were there single driver ants. We noted beetles in four cases, crickets in two, termites in one, and also a single caterpillar. Five spiders should also be mentioned. Termites may be more attractive than indicated, for nine specimens of Woosnam's ant chat were snared at Gamangui with fragments of termite nests, and no record was kept of their stomach contents. Still more noteworthy is the fondness of this bird for small frogs, the bones of which were present in five out of the 10 stomachs.

Out of 18 adults collected, only one (on April 20) was in condition to breed. Nine examples taken in February all had small gonads, so there may be a suspension of breeding in the driest period of the year. But young still entirely clad in spotted juvenal plumage were secured at Avakubi in January, May, and November, and they indicate that eggs may be laid there from April to November or December. Bates[1] reported similar conditions with *castanea* in the Cameroon.

Alethe poliocephala carruthersi Ogilvie-Grant

Alethe carruthersi OGILVIE-GRANT, 1906, Bull. Brit. Ornith. Club, vol. 19, p. 25 (type locality: 150 miles west of Entebbe, 5000 ft., in Toro District, Uganda; also north of Beni); 1910, Trans. Zool. Soc. London, vol. 19, p. 374, pl. 15, fig. 2 (Mpanga Forest, 5000 ft.). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 372. SCHOUTEDEN, 1914, Rev. Zool. Africaine, vol. 3, p. 272 (Kilo); 1918, idem, vol. 5, p. 296 (Moera). BANNERMAN, 1920, Rev. Zool. Africaine, vol. 7, p. 290 (Poko; Iri R.).

Alethe poliocephala REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 371 (northwest of Beni).

Alethe uellensis REICHENOW, 1912, Jour. Ornith., p. 321 (type locality: Angu on Uelle R.). SCHUBOTZ, 1912, Ber. Senckenbergischen Naturf. Gesellsch., vol. 43, p. 356.

Alethe poliocephala carruthersi SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 290 (Moera; Mawambi; Ukaika; Mawambi-Irumu). BEQUAERT, 1922, Bull. Amer. Mus. Nat. Hist., vol. 45, p. 313 (Avakubi). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 479. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 118 (Poko; Nava R.; Bondo Mabe); 1938, Bull.

[1] 1908, Ibis, p. 568.

Cercle Zool. Congolais, vol. 15, p. 60 (upper Lindi R.). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 416. JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 994.

SPECIMENS: Avakubi, two males, March 29, April 17; three immature males, February 24, June 2, November 5. Penge, immature male, April 21. Ngayu, male, December 12. Babeyru, male, juvenile male, July 29; immature female, August 1. Medje, two males, March 29, July 12; female, April 1.

ADULT MALE: Iris red-brown; bill black; feet pale flesh color, sometimes dark brown on the larger scales.

IMMATURE MALE: Iris grayish brown; bill dusky brown, with basal half of mandible yellowish and corners of mouth yellow; feet pinkish white.

DISTRIBUTION OF THE SPECIES: From Sierra Leone through the forests of Upper and Lower Guinea, and thence to Mt. Kenya and to the Mbisi Forest near Lake Rukwa. The Upper Guinea race is *A. p. castanonota* Sharpe, which ranges eastward to the northwest Benin Province in Nigeria, and is distinguished by its chestnut brown ear-coverts.

Alethe poliocephala poliocephala (Bonaparte) is the race of Fernando Po, the southern Cameroon, and Gaboon, with gray-black ear-coverts and deep rufous back. It has never been found in the Mayombe Forest or on the Loango Coast, yet it has been reported from Quicolungo in northwestern Angola.

Alethe poliocephala carruthersi, of the northeastern Congo forest and the lowland forest patches of Uganda, has also been reported from the Lotti Forest in the southeastern Sudan. It is smaller than *poliocephala* and has wings of adults about 80–88 mm., while the color of the back is much less ruddy.

The highlands of Kenya Colony east of the Rift Valley have *A. p. akeleyae* Dearborn, dull-colored, with wings 94–98 mm.; the rather similar *A. p. kungwensis* Moreau, with wings 93–100 mm., inhabits the mountain forest of Kungwe, on the east side of Lake Tanganyika; and another large form, *A. p. ufipae* Moreau, has recently been discovered at 8000 feet in the Mbisi Forest near Lake Rukwa.

Although the race *carruthersi* has been reported from 9000 feet on Mt. Elgon and at 5000 feet near Kakamega and Fort Portal, it is distinctly a lowland bird in the Congo. I was surprised not to find it at Lukolela, nor is it known anywhere along the southern border of the Congo forest.

In haunts and habits Carruthers' ant chat resembles *Alethe castanea*, though it is not quite so common in the Ituri, and much more silent. I cannot recall hearing any note. The birds keep to the uncut forest and are frequently seen near moving driver ants. The nesting habits of the species are still unknown, but we took breeding individuals in March, April, and July, a bird just out of the nest on July 29, and immature birds with remnants of juvenal plumage on November 5 and February 24. With the possible exception of the end of the rains and the brief dry season, therefore, they breed throughout the year.

The young bird in complete juvenal plumage can easily be distinguished from the same stage of *Alethe castanea woosnami* by its paler under surface. In the young *woosnami* the abdomen is bright cinnamon, whereas in *carruthersi* it is nearly white, with at most a slight wash of cinnamon at the tips of the feathers. Both species have the throat soiled whitish or buff, lightly streaked at most with blackish, the upperparts heavily spotted with cinnamon-rufous.

The 10 stomachs investigated, without exception, contained insect remains, including beetle elytra, termites, and two mole crickets. There were also insect eggs (once) and a small millipede. Only two individuals had eaten termites, and in one case they were large winged ones. It is to be noted that in no case had any driver ants been swallowed. Two of the birds had also eaten small frogs or tree frogs, the bones of which remained.

[*Alethe poliocephala poliocephala* (Bonaparte)]

Trichophorus poliocephalus BONAPARTE, 1850, Conspectus generum avium, vol. 1, p. 262 ("West Africa"; type from Fernando Po).

The nominate race of this ant chat ranges from Fernando Po and forested Cameroon to the Gaboon and northwestern Angola. Rudolf H. Braun assures me that he has collected it at Quicolungo in Angola, so there is every reason to expect it in forested areas of the Lower Congo.

Alethe poliophrys Sharpe

Alethe poliophrys SHARPE, 1902, Bull. Brit. Ornith. Club, vol. 13, p. 10 (type locality: Ruwenzori). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 749; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 371 (northwest of L. Tanganyika). JACKSON, 1906, Ibis, p. 544; 1938, The birds of Kenya Colony and. Uganda, vol. 2, p. 995 (east of Rutshuru Valley). O.-GRANT, 1910, Trans.

Zool. Soc. London, vol. 19, p. 373 (Mubuku Valley, 6500–9000 ft.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 291 (mountains east of Rutshuru Plain, 1600 m.). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 296; 1932, idem, vol. 21, p. 314 (Mt. Mikeno; Lulenga; Burunga); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 106. BEQUAERT, 1922, Bull. Amer. Mus. Nat. Hist., vol. 45, p. 312. CHAPIN, 1927, Ibis, p. 360 (west Ruwenzori). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 479. BERLIOZ, 1936, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 8, p. 331 (Mbwahi). VERHEYEN, 1947, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 23, no. 9, p. 2 (Mt. Kabobo); 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 73 (Mangwa; Kianiamakue; Kanyabisika; Nyabukoko).

Alethe poliocephala carruthersi ? BERLIOZ, 1936, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 8, p. 332 (Mbwahi).

ADULTS OF BOTH SEXES: Iris deep red-brown; bill black; feet pale flesh color, claws light gray.

DISTRIBUTION: Mountain forests along the border between the Congo and Uganda, from Ruwenzori and the highland west of Lake Edward south to the Kivu Volcanoes and the highlands northwest of Lake Tanganyika. H. J. Brédo has recently found it on Kabobo, a mountain only 90 kilometers north of Albertville.

Specimens from Ruwenzori, with wings 90–99 mm. long, seem somewhat smaller than those from west of the Ruzizi Valley and Uvira. The latter, when adult, have wings 95–105 mm. long and may be slightly deeper in color beneath. Males of course average larger than females but scarcely differ in color.

The gray-browed ant chat inhabits only the undergrowth of thick forest and was found by Grauer as low as 5200 feet on the highland east of the Rutshuru Valley, but it usually lives between 6000 and 9000 feet. Never more than two or three are seen together, and not infrequently they are attacking a column of driver ants. One female which I collected at 8700 feet on the western slope of Ruwenzori had made a full meal of these ants, probably from 60 to 80, many of them small, but some were fairly large soldiers. A head from one of the soldiers was still planted in the skin outside one corner of the bird's mouth. In addition it had swallowed one small snail with spiral whitish shell 10 mm. long. The ants which I collected at the spot were identified by Joseph Bequaert as *Dorylus nigricans* subsp. *burmeisteri* Schukard, a form likewise common in the lowlands.

Ants are of course not the principal food, and in another stomach I found only pieces of shiny green insects, probably

beetles. Woosnam (1910) was struck by these birds' behavior toward driver ants, and thought a meal of them must be very unsatisfactory. At Faradje, however, I once watched a chicken picking up such ants one by one, apparently enjoying its fare.

Spotted young were taken in the highland west of Uvira by Grauer in March and in June. That would indicate a rather prolonged breeding season during the rains, but no nest has yet been reported. The juvenal plumage is readily distinguished from that of *A. castanea* and *poliocephala* by the dark color of throat and fore neck. The feathers there are blackish brown, with a median stripe of rufous.

Sheppardia cyornithopsis lopezi (Alexander)

Callene lopezi ALEXANDER, 1907, Bull. Brit. Ornith. Club, vol. 19, p. 46 (type locality: Libokwa, Lower Uelle District, Belgian Congo). BANNERMAN, 1920, Rev. Zool. Africaine, vol. 7, p. 290 (Panga in Uelle; Kembe near Ubangi R.).

Alethe (Callene) cyornithopis lopezi SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 292 (Moera; Beni; Mawambi; Ukaika).

Vibrissosylvia cyornithopsis lopezi SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 80.

Sheppardia cyornithopsis lopezi FRIEDMANN, 1930, Occas. Papers Boston Soc. Nat. Hist., vol. 5, p. 324. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 477. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 117. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 990. MACDONALD, 1940, Ibis, p. 671.

Illadornis cyornithopsis lopezi SCHOUTEDEN, 1937, Bull. Cercle Zool. Congolais, vol. 13, p. 43 (Buta).

SPECIMENS: Avakubi–Ngayu, male, July 23. Ngayu, female, July 25; immature male, December 25.

ADULT MALE: Iris brown; bill black, a little pinkish at very base of mandible; feet light bluish.

ADULT FEMALE: Iris dark brown; bill black with base of mandible light yellowish gray, corners of mouth pale yellow; feet pale violet, claws gray.

DISTRIBUTION OF THE SPECIES: Sierra Leone and the Cavally River eastward to the Upper Congo forest and smaller forested areas in the southeastern Sudan, Uganda, and Kavirondo region.

Sheppardia cyornithopsis houghtoni Bannerman is the representative in the Upper Guinea forest, *S. c. cyornithopsis* (Sharpe) in the lowland forest of southern Cameroon. *S. c. lopezi* of the northeastern Congo forest has the flanks brownish, not rufous. In the highlands of the eastern Congo, Uganda, and

Kavirondo region it is replaced by *S. c. aequatorialis*, with small bill, but flanks again rufous like chest. *S. c. acholiensis* Macdonald of the Imatong Mountains, southern Sudan, is like *aequatorialis* but less russet brown on crown and back.

Sheppardia sharpei (Shelley), of wooded highlands from northwest of Lake Nyasa to Uluguru and Usambara in Tanganyika Territory, seems to me specifically distinct, and Macdonald (1940) regards *gunningi*, *bensoni*, and *sokokensis* of the eastern lowlands as forming still another specific group.

The sudden change of race as one goes from a level of 3000 feet in the eastern Congo to the higher mountain forests is unusual, but I cannot follow Macdonald in treating *aequatorialis* as a species. The range of *S. c. lopezi* is probably not limited to the northeastern section of the Congo forest, and Pitman is reported to have secured one example in the Manzira Forest at 4000 feet, near Masaka, Uganda. One may also expect it in the more central parts of the Upper Congo.

Wings of adults measure 65–77 mm., tails 44–54, culmen to base 14.5–16, the males being markedly larger than females, though there is little difference in color. Our immature male is fully fledged, with wing 72 mm., but retains enough of the juvenal plumage on crown, wing-coverts, and breast to show that it was conspicuously spotted above with deep ochraceous, just as in *Alethe*.

This is a bird of virgin forest, doubtless not so rare in the Ituri as it seems. Usually elusive in the extreme, it keeps to the bushes, on or close to the ground. Occasionally one may appear at the edge of a forest road, perching on a root or low stump. The male gives a series of three or four short whistles, not very musical, which are occasionally repeated so as to seem to continue without a pause. The male and female taken in July were adult, but not breeding.

In the Semliki Forest near Masimango's, 2400 feet, I secured one more adult female in February, 1926. But at Lukolela, near the southern edge of the forest belt, I never saw the species. The food in two stomachs consisted of insects, including termites, probably of the worker caste.

Sheppardia cyornithopsis aequatorialis (Jackson)

Callene aequatorialis JACKSON, 1906, Bull. Brit. Ornith. Club, vol. 16, p. 46

(type locality: Kericho, Lumbwa, Kenya Colony). O.-GRANT, 1910, Trans. Zool Soc. London, vol. 19, p. 369 (Mpanga Forest, 5000 ft.).

Alethe (Callene) cyornithopsis aequatorialis SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 291 (east of Rutshuru Plain, 1600 m.).

Vibrissosylvia cyornithopsis aequatorialis SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 80. GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 159 (Lulenga).

Sheppardia cyornithopsis aequatorialis FRIEDMANN, 1930, Occas. Papers Boston Soc. Nat. Hist., vol. 5, p. 324. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 477 (highland west of L. Albert). SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 314 (Burunga; west of Ngoma); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 107. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 990.

Sheppardia aequatorialis aequatorialis MACDONALD, 1940, Ibis, p. 669.

DISTRIBUTION: Highlands between 4500 and 6500 feet, from the eastern Ituri, Kivu District, and northwest of Lake Tanganyika, to the base of Mt. Elgon, Kakamega, and the western base of the Mau Plateau.

In this race the flanks are rufous like throat and chest, the white of the abdomen narrowed. Measurements are: wing 64–73 mm., tail 44–55, culmen to base 14–15. The smaller size of the bill is characteristic.

The race *aequatorialis* seems always to replace *lopezi* in forested areas above 4500 feet but is not known from the higher levels of Ruwenzori or the Kivu Volcanoes. I have taken an adult male at Djugu, 5400 feet, west of Lake Albert, and Rockefeller and Murphy secured another at Mateli, near 5000 feet, west of Uvira.

In behavior this robin-like bird seems exactly similar to the lowland race, keeping in undergrowth close to the ground. No one has yet described its song or found its nest, but it may be expected to sing in a brief, "thin" voice, like *S. sharpei usambarae* as described by Moreau.[1] The cup-shaped nest of that East African form was found in the bushy growth springing from cut stumps or from the roots of forest trees, 3 or 4 feet from the ground. The eggs were two, pinkish buff, with red-brown blotches around the larger end measuring 20–20.8 by 14.8–15.7 mm.

Bessonornis archeri archeri (Sharpe)

Cossypha archeri SHARPE, 1902, Bull. Brit. Ornith. Club, vol. 13, p. 9 (type locality: Ruwenzori). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 755; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 372 (west Ruwenzori,

[1] 1933, Ibis, pp. 15, 16; 1937, idem, p. 326.

2000–2500 m.). JACKSON, 1906, Ibis, p. 544. O. GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 370, pl. 16, fig. 2 (Mubuku Valley, 6000–11,000 ft.). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 296; 1932, idem, vol. 21, p. 314 (Lulenga; Nya-Muzinga). VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 240. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 472 (ridge west of L. Tanganyika). GROTE, 1934, Anz. Ornith. Gesellsch. Bayern, vol. 2, p. 311. JACKSON, 1938, The birds of Kenya Colony and. . . Uganda, vol. 2, p. 984.

Bessonornis bocagei albimentalis GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 159 (Mt. Sabinyo, 2700 m.; Kibati; Burunga; Mt. Mikeno, 3600 m.; Mt. Karisimbi, 3400 m.).

Alethe poliothorax BERLIOZ, 1936, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 8, p. 331 (in part. Mbwahi).

Cossypha archeri albimentalis SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 108 (Kikere, 2226 m.; Burambi, 2325 m.; Kundhuru-ya-Tshuve, 3000 m.; L. Ngando).

DISTRIBUTION OF THE SPECIES: Higher mountains from Ruwenzori through the Kivu District to the region northwest of Lake Tanganyika. *B. a. archeri* is found on Ruwenzori, the mountains northwest of Lake Edward, through the Kivu to the Rugege Forest. *B. a. albimentalis* has a little more white on the chin, and the abdomen is more apt to be whitish. The latter race is restricted to the mountains northwest of Lake Tanganyika and west of the Ruzizi Valley.

Although usually referred to the genus *Cossypha*, this rufous-breasted robin is plainly a member of the same group as *Callene anomala* Shelley and *Callene albigularis* Reichenow, which have been placed with *Alethe* and *Bessonornis*. *Callene frontalis* (Blyth) of Sikkim has much longer feet, and these African birds show more resemblance to some species of the Oriental genus *Brachypteryx*. The pattern about the head evidently induced Sclater to place *albigularis* near *Bessonornis humeralis* Smith, even though the tail patterns are very different; so I shall refer *archeri* provisionally to the genus *Bessonornis*.

The juvenal plumage of *B. archeri* has no light spotting on the upperparts and only slight dusky edging of the rufous breast feathers. The young of *B. humeralis* are spotted above, as are those of all species of *Cossypha*.

Archer's robin is a characteristic inhabitant of thickets and mountain-forest undergrowth, from 6000 feet up to the lower edge of the heath zone; and in places it ventures up to 11,000 feet or, more rarely, to 13,000 feet. In addition to half a dozen on Ruwenzori, I collected one at 8300 feet near Mulu, northwest of Lake

Edward, and five more on the central Kivu Volcanoes. All these plainly belong to the nominate race, as do two secured by Grauer in the Rugege Forest.

Not at all sociable, this species usually stays close to the ground, and only occasionally is it seen as much as 30 feet above it. The call note is a frog-like, double "tonk-tonk," and the bird may raise its tail to an angle of 45 degrees. It is attracted to driver-ant columns but does not seem to eat the ants themselves. The song was described by Woosnam as a "melancholy piping note, like a cart-wheel which wants oil and creaks each time it comes round to a certain spot." Such a sound I often heard from places where I knew this robin must occur, but I never succeeded in watching the singer.

No one has found the nest, which may be expected to resemble that of *B. anomala*, a deep cup placed in a hollow of a dead tree 4 feet from the ground.[1] The eggs of *anomala* were described as putty-colored, measuring 25-27 by 15-17 mm.

In the six stomachs of *B. archeri* that I examined there were always pieces of beetles and other small insects, once a number of termite heads, and once the remains of a small round millipede.

Bessonornis archeri albimentalis (Sassi)

Cossypha bocagei albimentalis SASSI, 1914, Anz. K. Akad. Wiss. Wien, vol. 51, p. 311 (type locality: forest west of L. Tanganyika, 2000 m.); 1915, Jour. Ornith., p. 117; 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 284, pl. 7.

Cossypha b. albimentalis JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 984 ("Kivu volcanoes"; highland west of Tanganyika).

DISTRIBUTION: Mountain forests to the northwest of Baraka and west of the Ruzizi Valley. This race differs but slightly from nominate *archeri*, though it does seem more apt to have a white chin and a superciliary stripe continuing farther back. It does not extend to the Kivu Volcanoes, as has sometimes been supposed.

In behavior it is exactly like the nominate race, and a number of specimens have been taken, between 6450 and 9350 feet. Twelve are now in the American Museum. Rockefeller and Murphy obtained five on Mt. Kandashomwa and two as far west as Luvumba on the Lusigi or upper Ulindi River.

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[1] See Belcher, 1930, The birds of Nyasaland, p. 218.

Stiphrornis erythrothorax xanthogaster Sharpe

Stiphrornis xanthogaster SHARPE, 1903, Bull. Brit. Ornith. Club, vol. 14, p. 19 (type locality: River Ja, Cameroon). SCHOUTEDEN, 1924, Rev. Zool. Africaine, vol. 12, p. 419 (Ikengo).

DISTRIBUTION OF THE SPECIES: Forests from Sierra Leone to the Congo and Uganda, also on Fernando Po. *S. e. erythrothorax* Hartlaub, the Upper Guinea race, has a deep olive upper surface, deep orange throat and chest, the lower breast and belly whitish. It is replaced by *S. e. gabonensis* Sharpe, with slaty crown and back, on Fernando Po and along the coastal area of the Cameroon and Gaboon; this latter race may perhaps reach the Mayombe.

In the interior of the Cameroon and along the middle Congo River lives *S. e. xanthogaster*, with paler golden throat and chest but a faint yellowish tinge on the lower under surface. *S. e. mabirae* of the forests of Uganda and the eastern Congo is just a little more olivaceous on the back, a trifle deeper orange rufous on the fore neck.

It is not easy to distinguish specimens of *xanthogaster* that I collected at Lukolela from those of *mabirae* taken in the Ituri forest. I expect gradual intergradation between these two races across the Upper Congo forest, whereas the change from *gabonensis* to *xanthogaster* in the Cameroon forest is rather abrupt. The latter race has been taken at Yukaduma, Assobam, and Bitye in southern Cameroon, while *gabonensis* is the race dwelling at Ebolowa and Efulen.

On the middle Congo River Schouteden secured *xanthogaster* at Ikengo, and I collected five examples at Lukolela, where breeding was certainly under way in November. The behavior was the same as that of *S. e. mabirae*, and four stomachs contained only small pieces of insects and their larvae.

[*Stiphrornis erythrothorax gabonensis* Sharpe]

Stiphrornis gabonensis SHARPE, 1883, Catalogue of the birds in the British Museum, vol. 7, p. 174, pl. 6, fig. 2 (type locality: Gaboon).

Since it inhabits the coastal area from Fernando Po and the Cameroon southward, this race might be expected to reach the Mayombe Forest. Maclatchy has recently obtained a specimen at Kango in the Gaboon, but there is no record thus far of any occurrence on the Loango Coast or in the Mayombe.

Stiphrornis erythrothorax mabirae Jackson

Stiphrornis mabirae JACKSON, 1910, Bull. Brit. Ornith. Club, vol. 25, p. 85 (type locality: Mabira Forest, Uganda). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 292 (Biogo).

Stiphrornis near *gabonensis* FLOWER, 1894, Proc. Zool. Soc. London, p. 604 (Ulike in Urumbi).

Stiphrornis xanthogaster O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 365 (Mawambi). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 304 (Ukaika).

Stiphrornis xanthogaster mabirae BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 375. GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 150 (Kartushi).

Stiphrornis erythrothorax mabirae SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 546. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 121 (Panga; Poko; Mauda); 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 60 (upper Lindi R.). JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 1088.

Stiphrornis erythrothorax SCHOUTEDEN, 1939, Bull. Cercle Zool. Congolais, vol. 16, p. 15.

SPECIMENS: Panga, female, September 14. Avakubi, two males, April 2, November 15; immature male, July 14. Penge, immature male, April 22. Ngayu, male, July 24. Babeyru, male, July 27. Gamangui, seven males, February 5, 6, 7, 9, 10, 12; four females, February 4, 7, 10, 11. Medje, two males, January 23, June 11; female, March 11.

ADULTS OF BOTH SEXES: Iris dark brown, bill black, feet pinkish gray to pale violet.

IMMATURE MALE: Iris brown; bill above and beneath blackish, but rather dull yellow all along the sides, corners of mouth brighter yellow; feet very pale buff.

DISTRIBUTION: Eastern half of the Upper Congo forest and the forest patches of Uganda eastward to the Mabira. This tiny orange-throated robin is confined to the heavy forest and may be expected to range southward to the Manyema but not to the gallery forests of the Kasai. We have a specimen from Angumu, a little south of the Equator in the District of Stanleyville.

At Gamangui in the Ituri it was a common bird, as proved by the 11 examples snared in nine days by our Medje trappers. Nevertheless it is a bird one seldom sees. Remaining low down in the undergrowth, and often hopping on the ground, this little sprite keeps well out of harm's way, seldom tarrying if it crosses a forest path in front of you. The brilliancy and conspicuousness

of its orange gorget are greatly enhanced by the way the plush-like feathers stand out from the throat. At times its presence in a thicket is announced by a low, hoarse "ch-chic!," difficult to distinguish from one of the notes of *Malacocincla rufipennis*. Gyldenstolpe told of hearing clear notes indicating an excellent songster.

Though so fond of virgin forest, it seems not to be restricted to it. I have seen examples in woods badly mutilated by natives where there was much disagreeable undergrowth. In all the six stomachs examined insect remains were present and included small beetles, some termites (one case), and a single caterpillar.

Dissections show that reproduction goes on through the greater

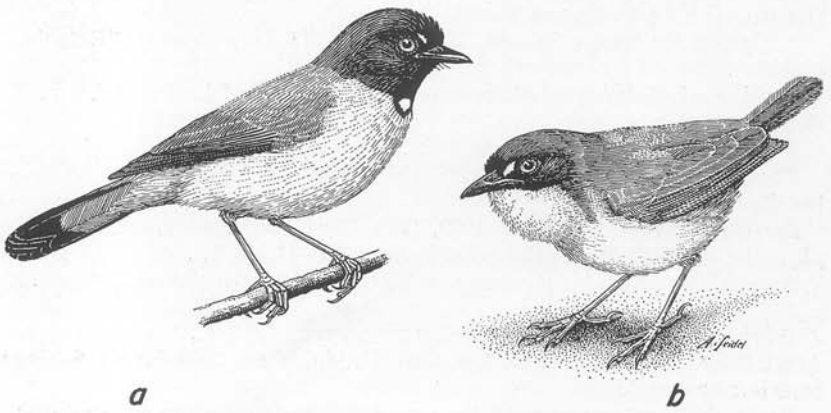

FIG. 22. A. White-starred robin, *Pogonocichla stellata ruwenzorii*. B. Orange-throated robin, *Stiphrornis erythrothorax mabirae*.

part of the year, for in the Ituri there were birds with gonads enlarged in January, February, April, June, July, and September. Of the birds taken in February, six were in condition to breed, and five were not. The only specimen taken from October to December was non-breeding, but this offers no conclusive evidence. The nest and eggs of the species are still unknown, except that a nest made of moss and placed at the base of a forest tree was brought to Bates in the Cameroon, together with the sitting bird.

It was my feeling, while in the Congo, that the genus *Stiphrornis* should be allied with *Sheppardia* and *Alethe*, being thrush-like rather than sylviine. The young are now known to have rufous terminal spots on the back, but this first plumage is shed very

early, although the spotting remains on the greater wing-coverts. The throat feathering at first is whitish, with narrow blackish margins, the orange appearing there only with the adult body plumage. Adult males average brighter orange on the fore neck than females and have slightly longer wings.

Pogonocichla stellata ruwenzorii (Ogilvie-Grant)

Tarsiger ruwenzorii OGILVIE-GRANT, 1906, Bull. Brit. Ornith. Club, vol. 19, p. 33 (type locality: Mubuku Valley, 7000 ft., east Ruwenzori); 1908, Ibis, p. 307 (Mfumbiro Volcanoes, 7000 ft.). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 374 (Rugege Forest; foot of Mt. Karisimbi, 2400 m.; north of Beni; west Ruwenzori, 1800 m.; Tshingogo; northwest of L. Tanganyika). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 288 (Urundi; Kisenyi–Rutshuru). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 297 (Busuenda; Kibati; Sibatwa Forest; "Baraka").

? *Pogonocichla intensa* SHARPE, 1902, Ibis, p. 115 (type locality: "Entebbe," Uganda).

Tarsiger orientalis intensus REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 778 (Ruwenzori ?).

Pogonocichla orientalis JACKSON, 1906, Ibis, p. 534.

Tarsiger eurydesmus REICHENOW, 1908, Ornith. Monatsber., p. 48 (type locality: Rugege Forest).

Tarsiger ruwenzori O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 394, pl. 18, fig. 4; pl. 19, fig. 19 (Mubuku Valley, 6000–11,500 ft.).

Pogonocichla cucullata ruwenzori VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 243.

Pogonocichla margaritata intensa GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 155 (Mt. Muhavura, 2900 m.; Mt. Sabinyo, 2600 m.; Burunga).

Pogonocichla stellata ruwenzorii SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 487. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 313 (Lulenga; Kibati; Nya-Muzinga; Mt. Niragongo); 1933, idem, vol. 22, p. 375 (Kisenyi–Ruhengere; Bigogo). JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 1007. GRANT AND M.-PRAED, 1940, Bull. Brit. Ornith. Club, vol. 61, p. 21; 1941, idem, vol. 61, p. 38. VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 74 (Kianiamakue; Nyabukoko; Kanyabisika; Kalonge).

Pogonocichla stellata ruwenzori GRANVIK, 1934, Rev. Zool. Bot. Africaines, vol. 25, p. 85.

Pogonocichla stellata intensa BERLIOZ, 1936, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 8, p. 331 (Mbwahi). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 110 (Kamatembe, 2100 m.; "Bunyoni"; Kibga, 2400 m.); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 338 (forest west of Astrida). PETERS AND LOVERIDGE, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 251 (Lulenga–L. Kivu; Ruanda).

Pogonocichla margaritata ruwenzorii FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 259.

Pogonocichla stellata SCHOUTEDEN, 1942, Bull. Cercle Zool. Congolais, vol. 17, p. 61.

DISTRIBUTION OF THE SPECIES: From Knysna in Cape Province north through eastern Transvaal to Nyasaland, highlands in East Africa and the eastern Congo to Mt. Elgon. The range is very discontinuous, restricted to areas of forest, mostly at higher levels, but at some places in East Africa down to 1600 or even 1000 feet.

Perhaps as many as nine races are to be recognized. *P. s. transvaalensis* (Roberts) of southeastern Africa differs from *P. s. stellata* (Vieillot) of Natal and eastern Cape Province, as well as from all the races north of the Zambesi, in having white on the alula and edges of primaries. The race *johnstoni*, described from southern Nyasaland, seems scarcely distinguishable from *P. s. orientalis* (Fischer and Reichenow), which extends to Uluguru and Usambara. The yellowish tail areas reach to within about 7 mm. of the tips of the outer rectrices. *P. s. macarthuri* Van Someren of the Chyulu Hills is described as still paler yellow beneath than *orientalis*.

On Kilimanjaro and other mountains west to Mbulu lives *P. s. guttifer* (Reichenow and Neumann), deeply and richly colored, with broader black tips on the tail-feathers. *P. s. keniensis* Mearns, occupying most of the humid highlands of Kenya Colony, is like *guttifer*, but the gray head and green back are both somewhat lighter. *P. s. elgonensis* (Ogilvie-Grant) of Mt. Elgon has lost virtually all yellow from its black rectrices.

Pogonocichla stellata ruwenzorii is another brightly colored race, with the yellow of the tail reaching to within 14 to 20 mm. of the tips, differing from *keniensis* in the greenish outer margins of most of the secondaries. The white supraloral spot is decidedly reduced; wings of adults 73–85 mm.; males distinctly larger than females. Its range includes all the mountain forests above 6000 feet from Ruwenzori and the highlands northwest of Lake Edward through the Kivu District to Urundi and the mountains northwest of Lake Tanganyika. Yet on Mt. Kungwe, east of Lake Tanganyika, Moreau (1943) has found birds closely resembling *orientalis*. The one specimen I have seen from the Rugege Forest is certainly colored like *ruwenzorii*, except that the white supraloral spot seems unusually conspicuous. The name *intensa* was based on a discolored specimen wrongly labeled as from

Entebbe. It is now believed to have come from the Kenya highlands rather than from Ruwenzori, so the name may take precedence over *keniensis*.

The white-starred robin is a common bird of the lower undergrowth in woods from 6000 feet up to the lower edge of the heath zone just above 9000 feet. Higher up it may be seen occasionally, at 11,500 or even 13,000 feet on Ruwenzori if the vegetation is sufficiently rich. West of Lake Edward it was noted fairly often between Lubero and Luofu, and I took two specimens near Mulu, northwest of Lake Edward, at 8100 feet.

Rudolf Grauer collected series on the lower slopes of the Kivu Volcanoes and on the highland northwest of Baraka, as well as one in Urundi and one in the Rugege Forest. On the central Kivu Volcanoes it seemed not to go much above 9500 feet, for I did not notice it in the *Hagenia* woods. On Mt. Kandashomwa, west of the Ruzizi Valley, I have found it up to 9700 feet.

Two or three birds are all one ever sees together, perching in bushes and behaving much like chats or European robins. Not infrequently they are attracted by moving swarms of driver ants and dart down to the ground near them, just as *Alethe poliophrys* does in the same places. The call note is a reiterated "crrrk, crrrk...," and the song, heard only infrequently, is a thin, high-pitched repetition of two whistled notes, "we-three, we-three, we-three...," which could easily escape notice.

Although a dozen or more were carefully watched through binoculars, the silvery white spot on the fore neck never seemed visible. A captive bird of this species, Jean Delacour tells me, displayed this median white spot from time to time, and then the white supraloral markings also became more conspicuous.

The nest of this species is made of dead leaves and grasses, with a softer lining, and of domed form. It may be placed on a sloping bank, on the ground near a stump, in a cavity low down on some tree, or on a sloping bough, but always within 6 feet of the ground. The eggs are two, sometimes three, and those of *ruwenzorii* have been described by Ogilvie-Grant (1910) as rather pointed oval, slightly glossy, and white freckled with light red and lilac-gray, most thickly toward the larger end. The measurements are 22–23 by 15.5–16 mm.

Nesting is known to take place on Ruwenzori in December and January and probably continues through the greater part of the

year. In the Kivu District I have taken specimens with gonads enlarged in March and June. The proportion of birds seen in juvenal dress is always rather high, about one in five. This plumage is boldly spotted on crown and back, but on those regions it is soon replaced by plain olive feathers. Some individuals molt directly from the spotted juvenal dress to the adult.[1]

The nine stomachs I examined all contained insect remains, no fruit. Small beetles were often noted, once a weevil, and one or two small caterpillars were present in four cases. One bird had eaten a dozen termite workers, and only one (in juvenal plumage) a single small driver ant.

KEY TO THE SPECIES OF *Cichladusa*

1. Throat gray or pale buff, and breast uniform light gray in adults, both without spots or stripes of blackish..... *C. ruficauda*
   Middle of throat pale buff, unmarked, but chest marked with blackish.....2
2. Throat and fore neck almost completely encircled by a black line, which may be interrupted in the mid-line of the breast..... *C. arquata*
   Breast with conspicuous rounded spots of black, which do not form a closed crescent but extend backward nearly or quite to the flanks... *C. guttata*

Cichladusa ruficauda (Hartlaub)

Bradyornis ruficauda HARTLAUB, 1857, System der Ornithologie Westafrica's, p. 66 (type locality: Gaboon).

Cichladusa ruficauda SHARPE, 1883, Catalogue of the birds in the British Museum, vol. 7, p. 71 (Landana). SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 398 (Kwamouth); 1924, idem, vol. 12, pp. 271, 419 (Kisantu; Kidada; Leopoldville; Eala; Bikoro); 1925, idem, vol. 13, p. 15 (Bolobo); 1926, idem, vol. 13, p. 199 (Banana; Moanda; Temvo; Matadi). PETIT, 1926, Dix années de chasses, p. 119 (Boma). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 481. CHAPIN, 1931, Nat. Hist., vol. 31, p. 600 (Lukolela). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 421, fig. 113.

SPECIMENS: Boma, male, January 11; immature male, December 31. Matadi, male, December 25; immature female, December 26.

ADULTS OF BOTH SEXES: Iris rather light red-brown; bill blackish; feet rather light bluish.

DISTRIBUTION: From the coast of the southern Gaboon, in savanna country, to Stanley Pool, Lake Tumba, and southern Angola. A common bird from the Lower Congo up to Coquilhatville, yet evidently rare if present in the Kasai District.

[1] For a thorough study of the plumages, see Moreau, 1951, Ibis, pp. 383–401.

During the dry period of the year (July and August) these rufous-tailed thrushes seem particularly shy and are heard singing mainly at daybreak and dusk from the palm crowns where they roost during the night. As the rains come on in September and October they are more in evidence, going in pairs, the male singing a loud and rich song, especially in the early morning and late evening. A phase of melodious notes often alternates with "chewee" notes in a higher pitch. Toward dusk the song increases in volume and spirit, but I noted no inclination to mimic other species.

Wherever there are *Borassus* palms the species is greatly attached to them. They serve as roosting places and as the site of the mud nest, lined with palm fibers. Otherwise *Elaeis* palms are appreciated, and the nest may be built also in a hollow in a baobab or on some ledge about a brick building. Breeding begins in October or November and goes on until April. A nest seen at Leopoldville on November 15 contained two eggs, very pale greenish, with dull rufous speckling around the blunt end.

The young have rounded dusky borders on the grayish breast feathers, and in this resemble the young of *C. arquata*, to which *ruficauda* is nearly related. But the young of *C. guttata* have heavy black spots on the sides of the breast, and that species is evidently much more distinct.

In seven stomachs of *C. ruficauda* I noted beetles or other insects in every case, with a few of their larvae, as well as one spider and some fibers from a palm nut.

Cichladusa arquata Peters

Cichladusa arquata W. PETERS, 1864, Monatsber. K. Akad. Wiss. Berlin (1863), p. 134 (type locality: Sena, lower Zambesi R.). DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, p. 148 (L. Tanganyika). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 373 (Ruzizi Valley). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 286. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 296 (Bigoisagua; Sanghé-Ruzizi). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 480. FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 254 (Kongolo). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 996 (Baraka district). WHITE, 1944, Ibis, p. 149 (Luapula R. near Kasenga).

Cichladusa arcuata DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (Tanganyika). O.-GRANT, 1908, Ibis, p. 300 (east of Kasongo).

Cichladusa arguata YOUNG AND WINTERBOTTOM, 1938, Ostrich, vol. 9, p. 94 (Chibwa, northeast of L. Bangweolo; Loangwa Valley).

DISTRIBUTION: Lower Zambesi Valley and the Sabi River in Southern Rhodesia north through eastern Africa to Mombasa, Unyamwezi, the Kagera and Ruzizi valleys, and the Manyema savanna.

Were it not for the black line encircling the pale buff throat, the rufous bases of the primaries, and the yellowish gray iris, *arquata* would doubtless be regarded as a race of *C. ruficauda*. *C. guttata*, spotted on breast and faintly streaked above, is less closely allied, and in the coastlands between Mombasa and Morogoro its range overlaps that of *arquata*. Five specimens of *arquata* from the Ruzizi Valley and Manyema have wings 87–94 mm. and thus show no difference in size from those of Nyasaland.

Being fond of river valleys and palms, this bird is not expected on high open plateaus, and in the southeastern Congo it seems to be restricted to the lowlands around Lake Tanganyika, the Lualaba and Luapula rivers, and Lake Bangweolo. Very like *ruficauda* in behavior, it has long been noted for its full, ringing song, which sometimes suggests that of a *Cossypha*, though apt to be varied with rasping or rattling notes. Often a familiar bird in villages, it shows a decided attachment to *Borassus* and other palms, along the borders of woods.

The breeding season is a long one, from December to April or May, and the nest is apt to be placed on the base of a stout palm frond, on a stiff leaf of a fan palm, or on some convenient support beneath the eaves of a house. Built largely of mud, with vegetable fibers or grasses, it holds two eggs, white to bluish white, speckled with reddish brown, measuring 24.5–26 by 16.3–17 mm.

In Nyasaland Benson[1] found the young being fed on roaches, beetle larvae, smooth caterpillars, centipedes, and even small frogs.

Cichladusa guttata guttata (Heuglin)

Crateropus guttatus HEUGLIN, 1862, Jour. Ornith., p. 300 (type locality: middle course of the Bahr-el-Abiad, or White Nile).

Cichladusa guttata SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 208 (Tunguru).

Cichladusa guttata guttata SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 481. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 567 (Kasenyi). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 118; 1941,

[1] 1944, Ibis, p. 463.

Rev. Zool. Bot. Africaines, vol. 34, p. 266. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 153 (Gondokoro; Rhino camp).

DISTRIBUTION OF THE SPECIES: Northern Bahr-el-Ghazal Province, southern Abyssinia and Southern Somaliland to Lake Albert, northern Kenya Colony, and eastern coastlands south to Uluguru and Dodoma.

Cichladusa guttata guttata of the Bahr-el-Jebel has the wings 82–88 mm., and in the Turkwell district 85–90 mm. *C. g. rufipennis* Sharpe, of Lamu Island and from the lower Tana River to Southern Somaliland, differs in having deeper rufous outer webs on primaries, the crown a trifle grayer brown, and wings 75–82 mm. Specimens from northeastern Tanganyika Territory, Mombasa, and Ukamba have the primaries colored as in *rufipennis*, upperparts more rufous brown, and wings 79–85 mm. In some respects they are thus intermediate between the two races commonly recognized.

This rufous-tailed chat with spotted breast is a rather common bird around the shores of Lake Albert but does not venture up on the neighboring plateaus or into the forested Semliki Valley. At Kasenyi I found it in the patches of dense bush amid savanna, and it did not show any fondness for the *Borassus* palms.

It has a pleasant song that reminds me of *C. ruficauda*, and I never heard it mimic any other bird, although it is known to do so in southern Abyssinia. Breeding is carried on during the rains, and the cup-shaped nest is of mud, well bound together with grass and leaves, saddled on a bough about 6 feet from the ground. C. R. S. Pitman[1] has given excellent descriptions of nests and eggs; the latter are turquoise-blue without markings, averaging 21.7 by 15.3 mm., and normally two in a set.

Cossyphicula roberti rufescentior (Hartert)

Cossypha roberti rufescentior HARTERT, 1908, Bull. Brit. Ornith. Club, vol. 23, p. 9 (type locality: forest 90 km. west of L. Edward, 1600 m.); 1920, Novitates Zool., vol. 27, p. 473. REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 372. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 472. VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 73 (Kianiamakue near Lutunguru).

DISTRIBUTION OF THE SPECIES: Highlands of Fernando Po and Cameroon, and those in the eastern Congo to the west of Lake

[1] 1930, Oologists' Rec., vol. 10, pp. 7–10, 2 figs.

Edward and of the Ruzizi Valley. It has only recently been found by W. Serle in the British Cameroons.

Grote[1] proposed a separate genus for this small robin-chat because of its broad bill, with rictal bristles not greatly developed, and its small feet. The tail pattern, largely rufous but with blackish median rectrices, is a great aid to identification.

Cossyphicula roberti roberti (Alexander) is still known only from around 4000 feet on Fernando Po and 3000 feet in the British Cameroons. *C. r. rufescentior* of the eastern Congo is more rufous on the flanks and under tail-coverts. There is little difference in color between the sexes. Wing of males 68.5, 72 mm., of female 65; tail of males 45, 49, of female 43; culmen to base 14.5–16; metatarsus 20–22.

Grauer secured only a male and a female at the type locality, and in August, 1929, Rockefeller and Murphy collected another male at the village of Mateli, near the upper Elila River, more than 200 miles farther south. We may be sure that it is not restricted to any small area. Still more recently, J. de Wilde again secured *rufescentior* in the region of Lutunguru.

Sterling Rockefeller noted that his example behaved like a flycatcher, perching low down in bushes and branches of small trees, and occasionally darting out to catch an insect in the air. The iris was dark reddish brown, bill blackish, feet silver-brown.

KEY TO THE CONGO SPECIES OF *Cossypha*

1. Median rectrices rufous, a little darker at most than outer ones 2
   Median rectrices black, brown, or olive, very different from rufous outer ones 4
2. With a narrow white superciliary line extending to behind the eye . . . . . *C. polioptera*
   No white supercilium, some whitish at most showing above lores 3
3. Wing exceeding 75 mm., tail exceeding 60 mm . . . . . *C. bocagei*
   Wing less than 75 mm., tail less than 52 mm. long . . . . . *C. insulana*
4. With a distinct white superciliary line, middle of crown not white 5
   No white line just above eye 7
5. Wing-coverts light blue, or conspicuously streaked with bright blue . . . . . *C. cyanocampter*
   Wing-coverts brown or gray, not more bluish than outer edges of remiges . . . 6
6. Whole underparts orange rufous . . . . . *C. heuglini*
   Only throat and chest rufous, lower breast and abdomen gray and whitish . . . . . *C. caffra*

[1] 1934, Anz. Ornith. Gesellsch. Bayern, vol. 2, p. 311.

7. Whole head mainly rufous, crown darker and browner than cheeks and supercilium..... *C. natalensis*
Crown with a broad median band of white, sides of head mostly black..... *C. niveicapilla*

Cossypha insulana insulana Grote

Cossypha insulana Grote, 1935, Ornith. Monatsber., p. 95 (new name for *Callene poensis* Alexander; type locality: Bilelipi, Fernando Po).

DISTRIBUTION OF THE SPECIES: Higher parts of Fernando Po, British Cameroons, mountains west of Lake Edward, and Kungwe highland on the east side of Lake Tanganyika.

This small robin-chat would look very like a *Sheppardia* if it had longer rictal bristles and less rufous cheeks. It has been retained in the genus *Cossypha* because of the resemblance in color pattern to *C. bocagei*, yet these two cannot possibly be races of one species, and the relationship of *insulana* to *C. polioptera* is even less close.

Cossypha insulana insulana may be restricted to the island of Fernando Po; and from Mt. Kupé in the British Cameroons Serle[1] has recently described *C. i. granti* as differing by the olive-brown instead of blackish color of its crown. The species is far more widely distributed than had been suspected, for in the Rothschild Collection I found a single immature specimen sexed as a female, taken in 1908 by Rudolf Grauer at 90 kilometers west of Lake Edward. That locality was undoubtedly in mountain forest at 5000 feet or more. At Tring the bird had been labeled as *C. roberti rufescentior*, though it has no black pattern on the tail and appears to differ little from nominate *insulana*. Remiges and rectrices are those of the juvenal dress, and the whole crown still shows faint ochreous speckling. The plumage of chest and flanks has been molted and is bright rufous, the abdomen cinnamon-buff. Wing 65 mm., tail 46 mm. Another specimen has now been secured for the Congo Museum by A. Prigogine in the region of Lutunguru, but until it has been compared with others it might be wiser to use only a binominal name for the form inhabiting the Kivu.

Its general resemblance to the nominate race is all the more surprising since Moreau has discovered on Mt. Kungwe a valid eastern race, *C. i. kungwensis*, which is somewhat lighter in color both above and below than the nominate subspecies.

[1] 1949, Bull. Brit. Ornith. Club, vol. 69, p. 53.

In view of all this, I feel that we must expect *C. insulana* to live in mountain forest on the slopes of the western Kivu mountains over a fairly long distance. It may well be represented there by an unnamed race.

[*Cossypha insulana kungwensis* Moreau]

Cossypha polioptera kungwensis MOREAU, 1941, Bull. Brit. Ornith. Club, vol. 61, p. 60 (type locality: Ujamba Forest, Mt. Kungwe, 7900 ft.).

Cossypha kungwensis MOREAU, 1943, Ibis, pp. 392, 406 (Kungwe-Mahare mountain forests); 1947, idem, p. 222 (Nyamansi forests, 4300 ft.). GRANT AND M.-PRAED, 1946, Bull. Brit. Ornith. Club, vol. 67, p. 38.

Still known only from the Kungwe and Nyamansi forests in Tanganyika Territory. A search should be made for representatives of this species on all the highlands around the northern end of Lake Tanganyika. They may well occur in damp forests above 4500 or 5000 feet, and must live near the ground.

Cossypha bocagei Finsch and Hartlaub

Cossypha bocagei FINSCH AND HARTLAUB, 1870, Die Vögel Ost-Afrikas, p. 284 (type locality: Biballa, Mossamedes Province, Angola). NEAVE, 1907, Mem. Proc. Manchester Lit. Phil. Soc., vol. 51, no. 10, p. 62 (Ndola, Northern Rhodesia); 1910, Ibis, p. 139 (Kambove, 4500 ft.; upper Lualaba R., 4500 ft.). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 472. WHITE, 1946, Ibis, pp. 90, 509 (Mwinilunga; Kayishila Forest). A. W. VINCENT, 1947, Ibis, p. 199 (Elisabethville).

Cossypha bocagei bocagei GROTE, 1934, Anz. Ornith. Gesellsch. Bayern, vol. 2, p. 311.

DISTRIBUTION: From the western highlands of Angola and those of Northern Rhodesia to the Upper Katanga and the country north of Lake Nyasa. It seems closely allied to *C. polioptera*, but has less black in the eye region and a lighter rufous tail. Their ranges are not known to overlap, and Grote has proposed that they be regarded as conspecific.

Relatively few specimens have been taken in the Katanga, though there is one in the Congo Museum from Elisabethville received from Richard. According to Neave, this robin-chat frequents dense evergreen woods only, is extremely shy, and has a musical but penetrating note.

White finds it common, seldom seen, yet readily snared on the ground in the thick evergreen forest patches of the Mwinilunga District, just south of the Congo border. Eight specimens from

the northern Mwinilunga District, which I have examined, seem to have breast and flanks somewhat lighter rufous than a series of 10 from the highlands of Angola. They do not differ in size.

Near Elisabethville Alfred Vincent found a nest on November 23, a cup of moss lined with black vegetable fibers, placed in a cavity of a stump only 30 inches from the ground. This was in a thick patch of evergreen forest. The ground color of the two eggs was cream, almost obscured by mottling of pale chestnut brown and ashy gray. They measured 21.3 by 15.9 and 22 by 16.2 mm.

Cossypha polioptera polioptera Reichenow

Cossypha polioptera REICHENOW, 1892, Jour. Ornith., p. 59 (type locality: Bukoba, Lake Victoria). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 108 (Djalasinda).

Cossypha polioptera polioptera SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 473. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 985.

Cossypha bocagei polioptera GROTE, 1934, Anz. Ornith. Gesellsch. Bayern, vol. 2, p. 311.

Cossypha archeri SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 117 (Djalasinda).

DISTRIBUTION OF THE SPECIES: From the Lotti Forest in the southeastern Sudan, the base of Mt. Elgon and Kisumu, across Uganda to Bukoba and the highland near Mahagi; appearing again at Ndala Tando in Angola, on the Cameroon and Nigerian highlands, and on the Tingi Mountains in Sierra Leone.

Cossypha polioptera polioptera of the Uganda region and northern Angola has a black stripe behind the eye below the white superciliary line. In *C. p. nigriceps* Reichenow, from the Cameroon westward, the white eyebrow touches the rufous cheeks. *C. p. tessmanni* Reichenow of the upper Kadei River, eastern Cameroon, is said to be darker than *nigriceps*, especially on the cheeks.

Within our limits only the nominate race has been found, and only two examples were secured. One was collected by Schouteden in June, 1925, at Djalasinda, a small mountain forest near Mahagi. The altitude there is close to 5900 feet, and the bird is scarcely to be looked for below 4000 feet. Scrubby woods in ravines seem to be its favorite haunt. The other was obtained by Vrydagh at Nioka at 5740 feet. In view of the occurrence in Angola, we must not overlook the possibility of occurrence somewhere in the Kivu or Manyema. The West African race is reported to have a short, pleasant song and to be trapped readily with termites as bait.

In Uganda Van Someren found nests in June and October; the eggs were olive green.

Cossypha natalensis Smith

Cossypha natalensis A. SMITH, 1840, Illustrations of the zoology of South Africa, Aves, pl. 60 (type locality: Port Natal, South Africa). BOCAGE, 1881, Ornithologie d'Angola, pt. 2, p. 257 ("Congo"). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 754 (Kwango R.). LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 18 (Lower Congo). JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 986 (Mubende; L. George). SCHOUTEDEN, 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 338 (Kirinda). WHITE, 1946, Ibis, p. 510 (Kayishila Forest).

? *Cossypha reclamator* HARTLAUB, 1857, System der Ornithologie Westafrica's, p. 76 ("Congo").

Bessonornis natalensis SCHOUTEDEN, 1925, Rev. Zool. Africaine, vol. 13, p. 15 (Kunungu).

DISTRIBUTION: From the coast of Natal northward to Southern Somaliland, southwestern Abyssinia, and the southeastern Sudan; also to Ngamiland, Angola, and the Loango Coast. Within our limits it has been found in the Lower and Middle Congo, on the Kwango River, and eastward to the Sankuru and Ruanda. Malbrant has sent us one example from Brazzaville, and Father Windmolders one from Kabinda, Sankuru. It should occur in the Upper Katanga, and Rudolf Grauer collected specimens not only in the Kagera Valley but one also at the base of Mt. Mikeno in the Kivu. Jackson reports it from Mubendi in Uganda and from Lake George; Cave obtained a specimen at Bengengai near the northern border of the Uelle. A. I. Good tells me that he obtained one example in savanna country just north of Yaunde in the Cameroon. This is not a bird of the Congo forest belt, and sporadic occurrences to the northward indicate a possibility of some migratory movement.

Despite its enormous range, no geographic races have yet been proved to exist. In the main it is a lowland bird, ascending into highlands only sporadically. It avoids the Lower Guinea forest, although dependent on patches of dense woods in savanna districts. This is a very well-known bird in eastern and southeastern Africa, celebrated for its imitations of the calls and songs of other birds. Indeed, except for some long-drawn piping notes, practically all its excellent singing is borrowed from a great variety of species, shorebirds, bee-eaters, rollers, kingfishers, cuckoos, bar-

bets, bulbuls, flycatchers, shrikes, orioles, sunbirds, weavers, and others.

The nest is usually placed in a hollow or a cleft in a stump or tree, even among rocks, and not high up. The eggs are three, varying from olive green to chocolate brown, measuring 22–24 by 16.3–17.2 mm. In Uganda the nesting season is said to be in April and May; on the southern edge of the Congo it should begin toward October.

Cossypha caffra iolaema Reichenow

Cossypha caffra iolaema REICHENOW, 1900, Ornith. Monatsber., p. 5 (type locality: Kilimanjaro). MOREAU, 1943, Ibis, p. 392 (Mbisi in Ufipa).

DISTRIBUTION OF THE SPECIES: Cape Town and Natal north to Seeheim in Great Namaqualand, Nyasaland, the Kivu District, Ankole, and the highlands of Kenya Colony.

Cossypha caffra caffra (Linnaeus) of southern and eastern Cape Province and the coast of Natal has a narrow white eyebrow extending but little behind the eye. *C. c. drakensbergi* Roberts is similar but slightly larger and lives on the Drakensberg and the highlands of eastern Transvaal. *C. c. namaquensis* Sclater, a large form with broader and longer eyebrow, occupies Namaqualand, the western Karroo, and western Transvaal.

Cossypha caffra iolaema, darker and grayer above than the preceding races, with well-developed eyebrow and wings 78–92 mm., lives in the highlands of eastern Africa from Nyasaland to Kenya Colony, reaching Mt. Kenya, Mt. Ngiro, and Mt. Elgon. *C. c. kivuensis* Schouteden, like *iolaema* but with all the coloration of the underparts distinctly deeper, wings 80–89 mm., is restricted to the highlands from northwest of Lake Tanganyika through the Kivu to Ankole.

The East African race, *iolaema*, is to be expected in the Congo only in the southeastern highlands and thus far has been collected only at Sambwe, 6100 feet, in Marungu by Rockefeller and Murphy in February, 1929. There they obtained an adult male, an immature male, and a female in juvenal plumage. The adult specimen is plainly paler than *kivuensis*. Moreau has reported *iolaema* from Ufipa in Tanganyika Territory.

In East Africa this is a very familiar bird above 5000 feet, wherever there are suitable thickets and the climate is fairly moist, and it reaches 8500 feet on Kenya and Elgon, 10,000 feet on the

Aberdares. Less secretive than most of its congeners, it sings sometimes like a European robin, sometimes as richly as a song thrush. I have not heard it mimic.

Nests were found by Serle[1] near Nairobi in December and in April, and breeding may continue there until June. The nests are substantial cups of twigs, leaves, and other plant materials, lined with rootlets, placed about a yard from the ground in thick shrubs, or in a recess on an earthen bank. Eggs are two to three, pale green diffusely marked with light brown and some lilac; they measure 21.9–22.4 by 16.2 mm.

Cossypha caffra kivuensis Schouteden

Cossypha caffra kivuensis SCHOUTEDEN, 1937, Rev. Zool. Bot. Africaines, vol. 30, p. 165 (type locality: Kivu Volcanoes); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 108 (Tshamugussa; Mt. Gahinga, 3475 m.; Burambi, 2325 m.).

Cossypha caffra SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 285 (northwest of L. Tanganyika, 2000 m.).

Cossypha caffra iolaema VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 239 (in part. Kivu). SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 314 (Nya-Muzinga). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 152 (Kivu highlands; Urundi). FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 252.

Bessonornis caffra iolaema GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 160 (Kibati; Burunga).

Cossypha caffra iolema SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 475 (in part). JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 988 (in part).

DISTRIBUTION: From the mountains northwest of Baraka on Lake Tanganyika across the Kivu highland to Ankole. Grauer secured at least six specimens in the region of Baraka and Uvira, between 1900 and 2400 meters. Rockefeller and Murphy obtained one on Mt. Kandashomwa, at 9000 feet. The other records are from the immediate vicinity of the volcanoes, and I know of none from Urundi, the Kagera Valley, or even the highland west of Lake Edward.

During my own visit to the Kivu I noted this robin-chat particularly in the rather open woods just north of Kibati. It was less common on the slopes of the volcanoes, though I did take one specimen in a ravine filled with senecios, lobelias, and blackberry

[1] 1943, Ibis, p. 67.

bushes at 12,500 feet on Mt. Karisimbi. The behavior was exactly like that of *iolaema*, and the food consisted of small insects, varied with fruits such as the mountain blackberries. The nest of this race has not yet been found.

Cossypha cyanocampter bartteloti Shelley

Cossypha bartteloti SHELLEY, 1890, Ibis, p. 159, pl. 5, fig. 4 (type locality: Yambuya, Aruwimi R.). SHARPE, 1890, *in* Jameson, The story of the rear column, p. 402. O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 371 (Mpanga Forest, 5000 ft.).

Cossypha, an *bartteloti* EMIN, 1894, *in* Flower, Proc. Zool. Soc. London, p. 604 (Valiasnge on Lindi R.).

Cossypha cyanocampter bartteloti REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 758. SCHOUTEDEN, 1914, Rev. Zool. Africaine, vol. 3, p. 272 (Kilo); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 117 (Buta; Poko; Kotili; Mauda; Bondo Mabe; Bambili; Niangara; Rungu). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 285 (Moera; Beni; Ukaika). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 473. JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 985.

Cossypha CHAPIN, 1915, Amer. Mus. Jour., vol. 15, p. 281.

Cossypha cyanocompter bartteloti LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 32.

Cossypha cyanocampter bartelotti SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 296 (in part. Kilo); 1932, idem, vol. 21, p. 314.

SPECIMENS: Stanleyville, male, November 8. Banalia, male, September 21. Avakubi, nine males, January 12, April 28, July 4, 5, 6, August 2, 14, September 30; female, April 28; immature male, March 12. Babonde, male, July 18. Medje, four males, March 27, 30, May 9, 17; two females, March 28, April 15. Niangara, male, May 6.

ADULTS OF BOTH SEXES: Iris dark brown, bill black, feet dark gray to grayish brown.

DISTRIBUTION OF THE SPECIES: Forested regions from Sierra Leone to the Gold Coast, and from the base of Mt. Cameroon eastward to Uganda, North Kavirondo, and the Lotti Forest in the southeastern Sudan. From the Cameroon it also extends southward to the Gaboon River but apparently little farther.

Cossypha cyanocamper cyanocampter (Bonaparte), the Upper Guinea race, extends also to forested southern Cameroon and to Kango near the Gaboon River. The ochreous rufous color of throat and breast is distinctly deeper and richer than that of *C. c. bartteloti*, which occupies the whole eastern part of the range, in the

northeastern Congo, Uganda, the near-by Lotti Forest, and Kakamega in Kenya Colony. The wing of *bartteloti* measures 76–86 mm.

No specimens are yet reported from the Ubangi River, so we do not know whether nominate *cyanocampter* reaches the Belgian Congo there. Nor are any known from the Mayombe. Once or twice at Lukolela I thought I heard the familiar song of this species, but finally decided I must have been mistaken. It appears to be lacking from the whole southern margin of the Upper Congo forest. Yet it extends out in the gallery forests of the Uelle to Niangara and Mauda, is heard frequently in the Semliki Forest to the very base of Ruwenzori, and ascends the Lendu Plateau to around 5000 feet at Djugu.

From Stanleyville to the northeastern border of the Congo forest these robin-chats are characteristic birds of dense second-growth thickets in old clearings or plantations. Keeping near the ground, they are so well hidden and so wary that were it not for their voices they might pass unnoticed. They will often sing in bushes close to a path, and the best way to see them is to break one's way rapidly into the thicket (a little noise does not matter) and then squat down motionless to look about. Here of course one sees far better than from outside the screen of foliage, and generally the bird has not gone very far, indeed it sometimes comes back as if to see what's up. A prolonged pursuit generally ends only in silencing the bird, obviating all chance of its being found.

Among the natives of the region the blue-shouldered robin-chat is famous as a mocker of other birds. In the north it shares the Mangbetu name of "Magwámbili" with *C. niveicapilla*. While its notes do not carry very far, they are sweet and varied, consisting largely of rich, leisurely whistles, among which imitations of many well-known birds mingle with notes that suggest a boy learning to whistle. Perhaps for this reason the natives say that it can even mimic the human voice. But out the notes continue to flow, copies of other birds' voices, usually less loud than the originals, being woven into a melodious whole at once recognizable as the song of the robin-chat. Many times near Avakubi I have heard thrushes of this species introduce verses of song with a curious dry, croaking rattle, an imitation, I am almost sure, of some small frog.

When a singing bird takes alarm and becomes silent, natives whistle to it more or less after its own fashion. The song is often resumed. But whistling a bar from any popular air will work equally well. The following 14 species I have heard mimicked: *Kaupifalco monogrammicus, Haliaeetus vocifer, Vinago calva, Cuculus solitarius, Cuculus clamosus, Cercococcyx mechowi, Clamator cafer, Chrysococcyx cupreus, Halcyon badia, Tockus camurus, Nicator vireo, Macrosphenus flavicans, Stizorhina fraseri,* and *Chlorophoneus bocagei.*

Males seem to be responsible for all the music, and I have heard as many as three singing within a circle of 15 yards. During the dry season (January in the northern Ituri) they became almost silent. Breeding birds were secured there in almost every month from March to August, inclusive; three non-breeding adults from the end of September to January. Bates[1] found a similar lull in reproduction in the Cameroon. He reported nests of *C. c. cyanocampter* in dark thickets, loosely built of decaying leaves and stems, with a few fibers inside. The eggs were two, distinctly glossy, varying from rather bright greenish blue to pale bluish green, more or less obscured with mottling and clouding of rufous and lilac-gray, especially toward the large end. Dimensions were 22–23.5 by 15–16.5 mm.

In 15 stomachs of *Cossypha c. bartteloti* we failed to find any trace of fruit, insects always being present, as well as four small round millipedes and a spider. The insects consumed were in great measure small beetles, but five birds had eaten caterpillars, one of which was noted as hairy, one had taken many small worker termites, and others a green cicada and a hemipter.

Cossypha heuglini heuglini Hartlaub

Cossypha heuglini HARTLAUB, 1866, Jour. Ornith., p. 36 (type locality: Wau, Bahr-el-Ghazal Province). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (in part. Ituri; "Uelle"; Ruzizi-Kivu). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 373 (Ruanda; L. Galago; north end of L. Edward). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 285 (Kisaka; Urundi; Uvira; Ruzizi Valley). LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 32 (Kabare; Rutshuru). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 296 (Beni; Zambo; Busuenda; Lisasa); 1940, idem, vol. 34, p. 60 (Kawa Forest). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 207 (Tunguru). VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 240 (shores

[1] 1908, Ibis, p. 568; 1911, idem, p. 626.

of L. Albert). HENDRICKX, 1944, Ostrich, vol. 15, pp. 203, 207 (southwest of L. Kivu).

Cossypha heuglini intermedia REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 373 (Kisenyi; Usumbura).

Cossypha cyanocampter bartelotti SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 296 (in part. Kibati; Molekera; Busuenda; old Mission St. Gustave; Talia-Semliki).

Cossypha heuglini occidentalis VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 240 (Kivu). FRIEDMANN, 1930, Occas. Papers Boston Soc. Nat. Hist., vol. 5, p. 327 (eastern Ituri District; Ruanda). BANGS AND LOVERIDGE, 1933, Bull. Mus. Comp. Zool., vol. 75, p. 193 (Ruanda). FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 249 (in part). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 109 (Mugunga; Nzulu; Bitale on L. Bulero; Ruhengeri; Mai-ya-Moto; Rwindi; Kalendo, 1925 m.; Kanyabayongo); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 338 (Kibingo; Astrida); 1943, idem, vol. 37, p. 270 (Gabiro; Luvungi).

Bessonornis heuglini occidentalis GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 161 (Mt. Muhavura, 2200 m.; Tamohanga; Kasindi).

Bessanornis heuglini occidentalis FRIEDMANN, 1930, The African Republic of Liberia and the Belgian Congo, vol. 2, p. 760 (Kamaniola).

Bessanornis heuglini heuglini FRIEDMANN, 1930, The African Republic of Liberia and the Belgian Congo, vol. 2, p. 760 (Ruanda).

Cossypha heuglini heuglini SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 470. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 314 (Lulenga; Ngoma); 1933, idem, vol. 22, p. 375 (Byihayi); 1935, idem, vol. 27, p. 402 (Luvungi; Tshibinda; Gabiro; Nyanza on L. Tanganyika); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 117 (Mahagi Port); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 109. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 980. GRANT AND M.-PRAED, 1940, Bull. Brit. Ornith. Club, vol. 61, p. 12. VERHEYEN, 1947, Exploration du Parc National de la Kagera, Mission Frechkop, fasc. 2, p. 13 (Katodjo).

Cossypha semirufa heuglini BOWEN, 1931, Catalogue of Sudan birds, vol. 2, p. 45 (Rumbek; Kajo-Kaji).

DISTRIBUTION OF THE SPECIES: From southwestern Abyssinia and the Juba River south to northern Zululand and Ngamiland, west to the Ubangi-Shari Province, the eastern edge of the Congo forest, the Loango Coast, and western Angola.

Cossypha heuglini heuglini is a large race, with wings 88–105 mm., median rectrices brownish olive, back slaty, often with a slight rufous wash. It ranges from southern Abyssinia to the Shari River, Lake Albert, the Kivu District, western Kenya Colony, and the interior of Tanganyika Territory. *C. h. intermedia* Cabanis of the East African coastlands is smaller, wings 82–98 mm. It extends from the Juba River south to Zululand and

the Transvaal, unless *euronota* Friedmann, south of the Rovuma, proves really to be more olivaceous on the back.

Cossypha h. occidentalis was described from Marungu, and stated to be more washed with olive rufous above. In size it resembles nominate *heuglini*, and has wings 89–102 mm. I accept *occidentalis* provisionally as extending from the west side of Lake Tanganyika to Luluabourg in the Kasai, and south through the Katanga to Nyasaland and possibly Ngamiland. *Cossypha h. subrufescens* of Angola, the Lower Congo, and Loango Coast is rather like nominate *heuglini* in size and color, except that its median rectrices are mainly blackish brown.

It has sometimes been stated that these forms are all races of *C. semirufa* (Rüppell), but the occurrence of *semirufa* almost alongside *heuglini* in southern Abyssinia, Kenya Colony, and on Kilimanjaro seems to preclude such close relationship.

The nominate form of Heuglin's robin-chat is a common bird in the Kivu District, the Semliki Valley, on the west shore of Lake Albert, and the Lendu Plateau, though still unrecorded from the Uelle. It lives mainly in thickets and second growth, avoiding heavy forest, and ascends the mountains in places to 7000 feet. In behavior *heuglini* resembles *C. niveicapilla*, but is a little less shy and elusive. Its singing resembles that of the white-capped species, but in my opinion it is not quite so melodious and does not include so many imitations of other birds. Yet Jackson at Entebbe heard it mimic three kinds of cuckoos, the green pigeon, plover, and a nightjar.

In that part of Uganda nests were found between April and July and again from October to December, made of twigs and dead leaves, with a lining of rootlets and fibers, and placed in thick growth up to 10 feet above the ground. Eggs were two, pale olive green with smears of pale brown, so that they seem almost uniform.

Cossypha heuglini occidentalis Reichenow

Cossypha heuglini occidentalis Reichenow, 1909, Jour. Ornith., p. 108 (type locality: Lufuku River, west of L. Tanganyika); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 373. Friedmann and Loveridge, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 249 (in part. West of L. Tanganyika).

Cossypha cyanocampter Dubois, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, no. 3, p. 148 (L. Tanganyika).

Cossypha semirufa Dubois, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, no. 3, p. 148 (L. Tanganyika).

Cossypha heuglini DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, no. 3, p. 148 (L. Tanganyika); 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (in part. Mpala; Kibongo). MATSCHIE, 1887, Jour. Ornith., p. 155 (Lufuku R.; Masembe; Kaué brook; "Lualaba" = Luvua R.). SALVADORI, 1907, Boll. Mus. Zool. Anat. Comp. Torino, vol. 22, no. 570, p. 8 (Lukonzolwa). NEAVE, 1907, Mem. Proc. Manchester Lit. Phil. Soc., vol. 51, no. 10, p. 62 (near Kapopo); 1910, Ibis, p. 140 (Kambove, 4500 ft.; upper Lualaba R., 3500 ft.; Bunkeya R., 3000 ft.).

Cossypha intermedia SCHALOW, 1887, Jour. Ornith., p. 243. REICHENOW, 1887, Jour. Ornith., p. 309 (Kasongo).

Cossypha henglini OUSTALET, 1904, Bull. Mus. Hist. Nat. Paris, vol. 10, p. 538.

Cossypha subrufescens REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 760 (in part).

Bessonornis heuglini occidentalis SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 337 (Kabambaie).

Cossypha heuglini subrufescens FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 150 (Katanga).

Cossypha heuglini heuglini VERHEYEN, 1947, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 23, no. 10, p. 3 (Musosa).

DISTRIBUTION: From the vicinity of Kasongo and the southwest shore of Lake Tanganyika to the Kasai, the Mwinilunga District of Northern Rhodesia, Nyasaland, and perhaps Ngamiland. Though not admitted by Grant and Mackworth-Praed (1940), this race does seem to differ in having a more marked rufous wash on the back.

We have two males collected by Rockefeller and Murphy at Lake Suzi in southern Marungu, a small series from Luluabourg in the Kasai, and seven from the Mwinilunga area in Rhodesia. None of these resembles the race *subrufescens*. Specimens from southern Nyasaland may approach *intermedia*.

This robin-chat is evidently a common bird in all the southeastern Congo, living in thick scrub, often near water, up to 4500 feet at least. Accounts of behavior of the birds in Northern Rhodesia and Nyasaland agree well with those of the northern *heuglini*. The song is rich and melodious during the rains and occasionally includes mimicry of other birds. The breeding season is said to be from October to January, and the nests are placed in bushes or on a stump, 5 to 10 feet up, or rather often in crevices of earthern banks near streams. The eggs are two to three, light chocolate brown, measuring about 23 by 17.5 mm.

Cossypha heuglini subrufescens Bocage

Cossypha subrufescens BOCAGE, 1869, Proc. Zool. Soc. London, p. 436 (type

locality: Caconda, Benguella). SHARPE, 1883, Catalogue of the birds in the British Museum, vol. 7, p. 41 (Congo R.; Landana). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 760.

Cossypha heuglini SHARPE, 1873, Proc. Zool. Soc. London, p. 717. BOCAGE, 1881, Ornithologie d'Angola, pt. 2, p. 258 (Congo). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (Lower Congo).

Cossypha CHAPIN, 1915, Amer. Mus. Jour., vol. 15, p. 281 (in part).

Bessonornis heuglini subrufescens SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 397 (Kwamouth); 1924, idem, vol. 12, p. 271 (Kisantu; Kidada).

Cossypha heuglini subrufescens FRIEDMANN, 1930, Occas. Papers Boston Soc. Nat. Hist., vol. 5, p. 328. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 471. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 389.

Cossypha semirufa subrufescens BOWEN, 1931, Proc. Acad. Nat. Sci. Philadelphia, vol. 83, p. 58, map.

SPECIMEN: Boma, immature male, December 31.

DISTRIBUTION: From Pointe Noire, on the coast of the French Congo, and Mouila in the Gaboon south to the Lower Congo and Angola, at least as far as Capelongo. Very like the other races in haunts and behavior, the race *subrufescens* is common about Boma in patches of scrub and is apt to sing loudly at sunset. I heard one mimic other birds, among them a bee-eater. At Matadi, Thysville, Leopoldville, and Bolobo robin-chats were heard singing which I took to be of the same kind, and Schouteden collected this form at Kwamouth.

In northern Angola Rudolf Braun[1] told of its imitating frogs, goatsuckers, *Glaucidium perlatum*, and many other birds. It doubtless breeds during the rains, but the nest and eggs have not been described. The stomach of my single specimen was filled with blackish winged termites.

Cossypha niveicapilla niveicapilla (Lafresnaye)

Turdus nivei-capillus LAFRESNAYE, 1838, Essai d'une nouvelle manière de grouper les genres, p. 16 (type locality: Senegal).

Cossypha verticalis SHELLEY, 1888, Proc. Zool. Soc. London, p. 21 (Tomaya). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (Uelle). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 761.

Cossypha CHAPIN, 1915, Amer. Mus. Jour., vol. 15, p. 281 (in part).

Cossypha verticalis verticalis SCLATER AND M.-PRAED, 1918, Ibis, p. 682 (Yambio; Tembura; Yei; Uelle R.).

Bessornis verticalis EMIN, 1919, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 2, p. 495. SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 3, pp. 258, 269 (Mangbetu country).

[1] 1930, Jour. Ornith., p. 48.

Bessonornis verticalis verticalis BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 389 (northern Belgian Congo).

Cossypha niveicapilla niveicapilla SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 475. BOWEN, 1931, Catalogue of Sudan birds, vol. 2, p. 46 (Yei; Yambio). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 117 (Poko; Buta; Mauda).

Cossypha niveicapilla MACDONALD, 1940, Ibis, p. 537.

? *Cossypha niveicapilla melanonota* BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 68 (Les Ouaddas; upper Kemo R.).

SPECIMENS: Niangara, male, April 30; immature male, November 7; female, May 27. Nzoro, female, August 6. Faradje, five males, February 26, August 19, 29, September 4, October 21; immature male, August 29; juvenile male, November 30; four females, April 2, May 10, July 25, September 4; juvenile female, November 27.

ADULTS OF BOTH SEXES: Iris dark brown; bill black; feet very dark brown.

IMMATURE: Iris dark brown; bill dusky brownish, corners of mouth yellow; feet flesh color.

DISTRIBUTION OF THE SPECIES: Senegal to the southern Bahr-el-Ghazal, Sennar, and southwestern Abyssinia, southward to the Lower Congo, Stanleyville, Lake Kivu, Ukerewe Island in Lake Victoria, and Kasulu on the northeast side of Lake Tanganyika.

Cossypha niveicapilla niveicapilla, with dark slaty back, occupies the more wooded areas of Upper Guinea and is found also in the gallery forests near the Congo-Nile divide and in Sennar. *C. n. melanonota*, with blackish back, replaces the nominate race in the Cameroon highlands, as well as in the lowland forest area from southern Cameroon to the Lower Congo. Thence it extends eastward to Stanleyville, the eastern Congo border, Uganda, North Kavirondo, and perhaps to southern Abyssinia.

The fact that there is intergradation between the two races has been overemphasized by Macdonald (1940). I find no difficulty in assigning the birds of the Uelle District to *C. n. niveicapilla*. Our specimens from that region are not noticeably darker on the back than those of Upper Guinea. Six adult males from the Uelle have wings 99–107 mm., tails 89–97; six females, wings 92–96, tails 84–88. Haberer collected a male at Duma on the Ubangi River, but this nominate race scarcely extends southward into the solid forest of the Upper Congo. Young in juvenal plumage are heavily spotted on head and body, but the tail is colored as in the adult.

The white-crowned robin-chat is a common bird of gallery forest and thickets in the savannas of the northern Congo. As I waited at dusk for goatsuckers to appear on the roads in the Mangbetu country, the silence would often be broken by a glorious thrush song, rich and loud, which I traced to this robin-chat. It was well known to the natives as "Magwámbili" and dwelt in thickets, but was not quite so shy as *C. cyanocampter.*

Like the nightingale, when it sang by day it was less apt to attract attention. Boyd Alexander (1907) did not exaggerate when he compared the "red thrush" with Europe's famous songster. I am not sure which has given me greater delight. The notes of *Luscinia* are more disconnected; the *Cossypha* does not sing so far into the night.

It seemed that the robin-chat controlled the volume of its voice, which became greater as darkness fell. One that sang in some woods about a spring began by imitating calls of large bee-eaters, especially *Merops apiaster* which had been passing on migration around October 20. Then he sang bee-eater notes in varied keys, and finally gave a rich, continuous song built entirely of bee-eater calls.

This *Cossypha* must be quick to learn. On the edge of the post of Faradje I listened for the first time to the rolling "ree-chee. . ." which seemed to represent the song of the common honey-guide. No sooner had the honey-guide flown away than a robin-chat in the bushes below repeated the honey-guide's performance several times, in lower tones. I doubt that the mimic had ever heard *Indicator indicator* sing before.

The various birds I have heard imitated by this race of *Cossypha* in the Uelle are as follows: *Kaupifalco monogrammicus, Haliaeetus vocifer, Numida meleagris, Vinago calva, Cuculus c. jacksoni, Chrysococcyx cupreus, Halcyon chelicuti, Merops apiaster, Merops nubicus, Scoptelus aterrimus, Lybius guifsobalito, Caprimulgus p. nigriscapularis, Indicator indicator, Turdus o. centralis, Chlorophoneus sulfureopectus,* and *Oriolus auratus.*

The breeding season of *C. n. niveicapilla* in the northern Congo is protracted. We took birds with enlarged gonads from February 26 to October 21 and young recently fledged at the end of November. A nest at Faradje on May 10 was a bowl-shaped structure in a small tree, 5 feet above ground, in thick woods. Rather bulky, it was composed externally of dry leaves and a few rotten

twigs, then came an intermediate layer of leaf stems, and the lining was of rootlets. The dark olive green eggs were two in number, but three are known to be laid occasionally; their dimensions are 22–24 by 16–17.6 mm.

In diet *niveicapilla* is mainly insectivorous. Of 13 individuals examined, only three had berries or seeds from fruit in their stomachs, whereas insect remains were never wanting. Small beetles were most common, but a mantis, some ants, and one small hairy caterpillar were noted; and in addition to insects a tiny millipede and the shell of a minute snail were also found.

Cossypha niveicapilla melanonota (Cabanis)

Bessornis melanonota CABANIS, 1875, Jour. Ornith., p. 235 (type locality: Chinchoxo, Portuguese Congo).

Cossypha albicapilla REICHENOW, 1874, Correspondenzbl. Afrikanischen Gesellsch., no. 10, p. 177.

Cossypha melanonota SHARPE AND BOUVIER, 1877, Bull. Soc. Zool. France, vol. 2, p. 477 (Condé). BOCAGE, 1881, Ornithologie d'Angola, pt. 2, p. 552 (Shiloango R.). SHARPE, 1883, Catalogue of the birds in the British Museum, vol. 7, p. 46. REICHENOW, 1887, Jour. Ornith., p. 306 (Leopoldville). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (Stanley Falls). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 371 (Mubuku Valley, 5500 ft.; Mokia).

Cossypha verticalis melanonota REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 762; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 372 (north of Beni; Kirk Falls). LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 32. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 296 (Moera; Mutiba; Boga: Buwissa; Lisasa; Bulaimu).

Bessonornis verticalis melanonota BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 389. GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 162 (Sake).

Bestornis verticalis EMIN, 1922, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 3, p. 375 (Mswa).

Cossypha niveicapilla melanonota SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 475. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 406. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 987. SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 109 (Rutshuru; Rwindi).

SPECIMENS: Stanleyville, two males, November 29.

ADULT MALE: Iris dark brown; bill black; feet purplish gray.

DISTRIBUTION: Genderu and Tibati in Cameroon south to the Gaboon, Lower Congo, Stanley Pool, Stanleyville, and eastern edge of the Congo from Lake Kivu north to Lake Albert. Supposedly also from Kasulu and Lake Victoria through Uganda to

Nandi, and to southwestern Abyssinia. In the region between Lake Albert and Abyssinia the color of the back varies somewhat, for here the two races tend to merge. My two specimens from Stanleyville have backs as jet-black as any I have seen. Their wings measure 104.5 and 106 mm., tails 92 and 95.

Even in the Semliki Valley the back is not always quite black, though always darker than in the Uelle. Since 1926 I have taken specimens referable to *melanonota* at Kasenyi, near Irumu, Beni, and at Kisaro's in the eastern Rutshuru Valley. One might expect this bird along the southern edge of the forest in the Manyema or Sankuru District, but specimens from there seem to be wanting.

In behavior and voice *melanonota* is very like the nominate race. It haunts thickets and wooded patches but does not penetrate the main body of forest. Largely a lowland bird, it ascends to 4800 feet near Beni, and to over 5000 on Idjwi Island, where two very black-backed examples were secured by Grauer.

I found it a finer singer and more of a mimic than *C. heuglini* in the Rutshuru Valley, where one imitated *Cuculus solitarius*, always a favorite with robin-chats, and *Caprimulgus p. nigriscapularis* as well. At Stanleyville, living among coffee trees and thickets near the edge of the settlement, it sang more loudly than *C. cyanocampter*, but not in so rich a tone. There *melanonota* mimicked *Kaupifalco*, *Francolinus squamatus*, *Merops s. persicus*, and *Turdus olivaceus centralis*.

In Uganda nests have been found in May and June. The breeding season in the eastern Congo seems less clearly defined. Jackson tells of nests placed from 3 to 5 feet above the ground in a young palm, a wild banana plant, and a *Pandanus;* eggs are two to three, dark olive in color.

In three stomachs examined by me there were always remains of insects, including beetles, also a small round millipede and some seeds from fruit.

Thamnolaea cinnamomeiventris subrufipennis Reichenow

Thamnolaea subrufipennis REICHENOW, 1887, Jour. Ornith., p. 78 (type locality: near Ussure, Tanganyika Territory). SALVADORI, 1907, Boll. Mus. Zool. Anat. Comp. Torino, vol. 22, no. 570, p. 8 (Lukonzolwa). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 295 (Beni).

Cossypha claudi ALEXANDER, 1907, From the Niger to the Nile, vol. 2, p. 308 (Kodja hill near Mt. Gaima).

Thamnolaea CHAPIN, 1915, Amer. Mus. Jour., vol. 15, p. 281.

Thamnolaea albiscapulata subrufipennis SCLATER AND M.-PRAED, 1918, Ibis, p. 684.

Thamnolaea cinnamomeiventris subrufipennis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 463. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 116. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 143. FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 246. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 971.

Thamnolea cinnamomeiventris subrufipennis BECQUET, 1942, Bull. Soc. Bot. Zool. Congolaises, vol. 5, p. 22 (Nioka).

SPECIMENS: Gaima Hills, near Nzoro, male August 6. Near Aba, two males, July 13, 18; female, December 14. Piagga, near Faradje, female, February 20.

ADULTS OF BOTH SEXES: Iris dark brown, bill and feet black.

DISTRIBUTION OF THE SPECIES: Bogosland, eastern Sennar and Kordofan, south through eastern Africa to the eastern Cape Province, westward across the Sudan to the upper Niger and southeast Senegal. Occurrence is rather local, and dependent upon steep, bare rocks. The white-capped forms of the Sudan must be regarded as conspecific with *cinnamomeiventris*, so there are about eight races.

Thamnolaea cinnamomeiventris cinnamomeiventris (Lafresnaye) ranges from Cape Province to Southern Rhodesia. The male is black headed, and the rufous on rectrices is restricted to the very base. *T. c. subrufipennis* has more rufous on the bases of its tail quills, and the tail-coverts are not so deep chestnut. As in the nominate race, the female lacks the white shoulder patch and is gray on head, back, and wings. This is a wide-ranging form, from the Zambesi through East Africa to Uganda, the northeastern corner of the Congo, Lado, and southern Abyssinia. But in Usambara it is replaced by *T. c. usambarae* Neumann, which lacks the pale border just below the black chest of the male.

Thamnolaea cinnamomeiventris albiscapulata (Rüppell) of Eritrea and northern Abyssinia, west to Sennar, differs notably in that the female is black and rufous, lacking only the white shoulder patch of the male. The longer tail-coverts are black in both sexes.

In the vast area from Kordofan to Togoland males have white shoulder patches and a large white crown; females are gray and rufous. But in view of their behavior and distribution, they seem certainly to be races of this same species. *T. c. kordofanensis* Wettstein occupies Kordofan and the Nuba Mountains; *T. c. coronata* Reichenow extends from Darfur to northern Cameroon

and Togoland, so it may approach our limits in the Ubangi-Shari District.

Near the upper Niger River the crown patch is again lost. The white shoulder patch of the male covers the lesser and middle wing-coverts in *T. c. cavernicola* Bates, from Fiko, within the great bend of the Niger. It is more restricted and mixed with black in *T. c. bambarae* Bates from Kulikoro and Satadugu, farther west. Gray replaces black in the females of both these races, and the way in which *coronata* occupies the area between *cavernicola* and *subrufipennis* supports the inclusion of the white-capped forms as subspecies.

The race *subrufipennis* reaches only the eastern and northeastern edges of the Congo, particularly near Lake Moero, Lake Edward, Mahagi, and the Upper Uelle. It requires hills with much bare rock in savanna country and seems not to venture into the cool mountain regions of the Kivu. Yet in Nyasaland and East Africa it ascends to 7000 feet.

Seek the most precipitous hills that can be found, and you may share the thrill I experienced as I stood at the foot of a dark, forbidding granite cliff, watching the crag-martins coursing back and forth, and then listened almost breathless as a black-and-rufous rock-chat in full song flitted along the face of the rocky wall, 40 yards overhead. The grayer female bird usually follows her mate as they alight on rocks and trees alike. He sings continually, the body held horizontally, standing high on his legs, and slowly raising and lowering the tail.

This *Thamnolaea* is one of Africa's fine singers, its inaccessible haunts lending romance to a full and varied clarion voice more like that of the Indian shama (*Kittacincla macroura*) than any other I know. Sometimes it reminded me, too, of *Cossypha niveicapilla*, though there was no imitation of other birds, and a certain similarity was noticeable to the less gifted *Myrmecocichla nigra*. The rock-chat sang much more courageously in the somewhat rainy month of July than it did in December, though then it was still going in pairs. In Nyasaland Benson[1] twice heard this chat mimic the calls or songs of half a dozen other passerine birds.

Much to my surprise, dissections indicated that my birds in the Upper Uelle did not nest in the rainy season, but in the latter part

[1] 1940, Ibis, p. 606.

of the drought, for the only breeding bird was taken on February 20. The nest is known to be located in crevices of rocks or in abandoned cliff-swallow nests; the eggs are two, blue or light bluish green, spotted with rusty reddish, about 24.5 by 18 mm.

Two of the three stomachs we examined held the remains of insects, but the same number contained fruit, in one case recognizable as that of a *Ficus* growing on the slopes of a hill and continually visited by fruit pigeons.

KEY TO THE CONGO SPECIES OF *Myrmecocichla*

1. Upperparts grayish brown, rump whitish; underparts paler, throat whitish; most of primaries white at base ..... *M. thollon*;
   Coloration darker, or black and white 2
2. Whole plumage dark brown ..... *M. nigra*, ♀
   Coloration black, with considerable white on lesser wing-coverts, and sometimes on crown or throat 3
3. Most of the greater wing-coverts wholly black, though some inner ones may be partially white; no white on crown or throat ..... *M. nigra*, ♂
   Greater wing-coverts mainly white, or white over more than basal half; some white usually on forehead, crown, or throat ..... *M. arnotti*, ♂, ♀

Myrmecocichla tholloni (Oustalet)

Saxicola tholloni OUSTALET, 1886, Naturaliste, vol. 8, p. 300 (type locality: Leketi, on the upper Alima R., French Congo).

Oenanthe chaboti MENEGAUX AND BERLIOZ, 1923, Mission Rohan-Chabot, vol. 4, fasc. 1, p. 139, pl. 4 (type locality: Lwasinga R., Kubango district, Angola).

Myrmecocichla lynesi BANNERMAN, 1927, Bull. Brit. Ornith. Club, vol. 47, p. 147 (type locality: Huambo, 5500 ft. Angola).

Myrmecocichla tholloni BERLIOZ, 1928, Bull. Mus. Hist. Nat. Paris, vol. 34, pp. 140–142.

Myrmecocichla tholloni tholloni SCLATER, 1928, Bull. Brit. Ornith. Club, vol. 49, p. 17 (Middle Congo); 1930, Systema avium Aethiopicarum, pt. 2, p. 466. LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 79 (Banda-Idiofa pastures).

DISTRIBUTION: Grasslands from the interior of the French Congo southward over the highland of central Angola to the Lwasingwa River, near latitude 15° S., an affluent of the Longa River. Oustalet's type from Leketi had been lost, and the species was redescribed as *Oenanthe chaboti* and *Myrmecocichla lynesi*. Malbrant has sent us two male specimens taken in 1942 some 50 kilometers south of Djambala, and they show no significant difference from examples secured at Mombolo and Huambo in Angola. He tells me that this is a common bird in the whole region of

Leketi. Despite its pale coloration, *M. tholloni* is clearly an ally of *M. aethiops* and *formicivora*.

Lynes, who knew this chat on the open meadows of the Benguella Plateau and of the western Kasai, wrote that its behavior resembles that of *M. nigra* except for a "peculiar flittering way of flight." He had reason to believe that nesting took place at the end of the dry season. Malbrant tells us that this chat is characteristic of open grasslands in the French Congo, from Mayama north to Ewo and west to Franceville. It spends much of its time on the ground, but will perch readily on trees or telegraph wires and goes in pairs or parties of four or five. We may be sure the nest is placed in some hole in the ground.

Myrmecocichla nigra (Vieillot)

Oenanthe nigra VIEILLOT, 1818, Nouveau dictionnaire d'histoire naturelle, vol. 21, p. 431 (type locality: west coast of Africa, i.e., Malimba).

Myrmecocichla nigra HARTLAUB, 1857, System der Ornithologie Westafrica's, p. 65 (Congo). BOCAGE, 1881, Ornithologie d'Angola, pt. 2, p. 268. REICHENOW, 1887, Jour. Ornith., p. 302 (Manyanga); 1905, Die Vögel Afrikas, vol. 3, p. 706 (in part); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 369 (L. Mohasi; Mpororo; south slope of Mt. Sabinyo; Rutshuru Plain; north end of L. Edward; Tshingogo). HARTERT, 1900, Novitates Zool., vol. 7, p. 51 (Karimia); 1917, Bull. Brit. Ornith. Club, vol. 37, p. 41. O.-GRANT, 1908, Ibis, p. 299 (east of Kasongo). NEAVE, 1910, Ibis, p. 142 (Kambove, 4500 ft.). MOURITZ, 1914, Ibis, p. 34 (Sibokwa). SALVADORI, 1914, Ann. Mus. Zool. Napoli, new ser., vol. 4, no. 10, p. 28 (Ruanda). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 293 (Kisaka; Ishangi; Kasindi–Beni). LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 32 (Rutshuru; Kasindi). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 295 (Biogo; Masidongo; Mission St. Gustave; Kabemba; Mai-na-Ivi; Molekera; Mai-na-Kwenda; Kalegela; Kibati); 1923, idem, vol. 11, pp. 337, 398 (Macaco; Kabambaie; Kwamouth); 1924, idem, vol. 12, p. 271 (Kisantu; Kidada); 1925, idem, vol. 13, p. 15 (Bolobo region); 1926, idem, vol. 13, p. 199 (Moanda); 1933, idem, vol. 22, p. 375 (Kisenyi; Rwaza); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 116 (Mauda; Rungu; Faradje; Mahagi Port); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 107 (Molindi R.; Munagana; Burambi, 2325 m.; Mai-ya-Moto; Katanda; Mabenga); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 338 (Kibingo; Bimba; Astrida); 1943, idem, vol. 37, p. 270 (Gabiro; Kinunu). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pts. 2, 3, pp. 205, 237 (Dungu; Mbiambana; Mangbetu; Tunguru). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 165 (Makora). NEUNZIG, 1926, Jour. Ornith., pp. 751, 752. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 466. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 377, fig. 102 (Voro Rapids; Angu). FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 247. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 974. LYNES, 1938, Rev.

Zool. Bot. Africaines, vol. 31, p. 79 (Biano Plateau; Banda). VERHEYEN, 1947. Exploration du Parc National de la Kagera, Mission Frechkop, fasc. 2, p. 12 (Gabiro; Katodjo).

Myrmecocichla levaillanti HARTLAUB, 1882, Abhandl. Naturwiss. Ver. Bremen, vol. 8, p. 188 (Langomeri).

Saxicola nigra OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127.

Thamnolaea arnotti DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (Lower Congo).

Myrmecocichla stoehri SCLATER, 1906, Jour. South African Ornith. Union, vol. 11, pp. xxxi, 98 (type locality: Lavusi, Serenje District, Northern Rhodesia).

Myrmecocechla nigra MENEGAUX, 1918, Rev. Française Ornith., vol. 5, p. 259 (Bubé).

Thamnolaea nigra SCLATER AND M.-PRAED, 1918, Ibis, p. 684 (Yei; Uelle R.).

Mycmococichla levaillantii EMIN, 1919, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 2, pp. 424, 427 (Tobbo; Kuterma).

Myrmecocichla levaillantii SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 3, p. 256.

Myrmeocichla nigra GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 183 (Luluabourg).

Myrmecocichla nigra stoehri WHITE, 1946, Ibis, pp. 89, 509 (Luakera R. in Mwinilunga District).

SPECIMENS: Zambi, male, June 25. Kwamouth, male, December 19. Niangara, male, November 22. Faradje, two males, April 29, October 18; immature male, May 1; three females, March 26, April 29, October 19; immature female, May 1.

ADULTS OF BOTH SEXES: Iris dark brown, bill and feet black.

DISTRIBUTION: From Uganda and Lado westward to the Cameroon highlands and then, locally, to Fouta Djalon; southward also to Urundi, the Katanga, and Northern Rhodesia; and westward again, on the southern side of the Congo forest, to Angola, the Kasai, Lower Congo, and the Enclave of Cabinda. Nowhere, of course, does this bird invade heavy forests of the lowlands or the mountains. Mainly an inhabitant of lowlands, it ascends to well over 6000 feet in the Kivu area.

Myrmecocichla nigra stoehri Sclater, described from Lavusi, near Serenje, Northern Rhodesia, does not seem to differ in any way from the nominate form. On the other hand, specimens from Fouta Djalon and Kouroussa in French Guinea, according to Berlioz,[1] have wings 5 to 7 mm. longer than those of the French Congo and Uganda.

The adult female differs from the male in being uniform dark

[1] 1944, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 16, pp. 97, 98.

brown. The young female in juvenal plumage is wholly blackish brown, distinctly darker than the adult, whereas the young male at the same stage is of a brownish black, browner than the adult male, and without his faint bluish gloss, though the lesser and middle wing-coverts are white, much as in the adult. At no time does the male of *M. nigra* have any white about the head.

This chat is a common bird in all the lowland savannas of the Congo, noted also on the open plateaus, and once even as high as 7600 feet at Burambi in Ruanda. It prefers the lower trees and bushes as perches and feeds largely on the ground, being seen often in cultivated fields. A slow raising and lowering of the tail, sometimes accompanied by a slight "teetering" of the whole body, is

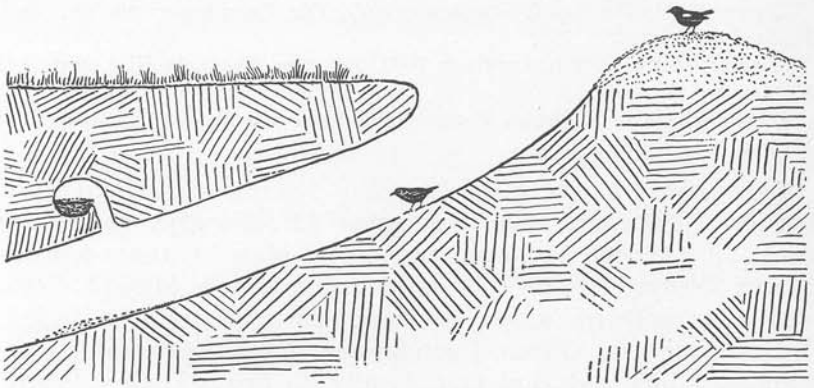

FIG. 23. Diagram of customary nesting site of *Myrmecocichla nigra* in the roof of an aardvark burrow.

characteristic while perching. The song of the male is thrush-like, prolonged and musical, but occasionally with a gurgling quality. When fleeing at the approach of a man, it may sing on the wing. During both dry and rainy seasons the song is heard, but nesting begins in the Uelle District in March, toward the end of the drought, and lasts probably not more than four months. Adults in October and November were not in condition to breed.

We found three nests, all concealed ingeniously within the burrows of aardvarks (*Orycteropus afer*). At from 2 to 6 feet from the entrance, and in the center of the roof, the birds would cut a small ascending tunnel 8 to 10 inches long leading to a larger chamber, round and vaulted. In the bottom of this chamber was the rather shallow nest, made of rootlets and sometimes dry grass.

My first nest was found on May 1, 1911, with the aid of a Logo man who had trapped the parents at the mouth of a burrow. It took us a long time to find the tunnel up from the roof. The nest contained three young, with feather sheaths just sprouting. The following year we knew where to look. A nest opened on March 15, 1912, was still without eggs; another, on March 26, contained two unspotted greenish white eggs which the female was incubating. One of these measures 24 by 17.1 mm., very close to the dimensions given by Jackson (1938) for eggs from Entebbe, Uganda. Jackson found the tunnels bored in old weather-worn "ant-heaps," road-cuttings, or sand pits.

While the nest is being prepared, both male and female spend their time in the immediate vicinity, singing and calling. The male of one pair varied his usual song with sounds very like the calling of a buzzard (*Buteo auguralis*), while between times his mate uttered a still better imitation of the "whă-whă-whă . . ." of a wood-hoopoe (*Scoptelus aterrimus*). Never before had I suspected this chat of mimicking. During the progress of incubation the male is less noisy.

Four stomach examinations sufficed to show that these chats are not entirely insectivorous, since two stomachs contained only berries. Among the insects that filled the others I noted some ants and a single termite.

Myrmecocichla arnotti leucolaema Fischer and Reichenow

Myrmecocichla leucolaema FISCHER AND REICHENOW, 1880, Ornith. Centralbl., p. 181 (type locality: Nguru Mts., Tanganyika Territory).

Thamnolaea shelleyi DE SOUSA, 1886, Jor. Sci. Nat. Lisboa, vol. 11, p. 79 (Ntenkwe). DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, p. 148 (L. Tanganyika). NEAVE, 1907, Mem. Proc. Manchester Lit. Phil. Soc., vol. 51, no. 10, p. 63 (upper Kafue R.); 1910, Ibis, p. 79 (Kambove).

Thamnolaca shelleyi DE SOUSA, 1886, *in* Capello and Ivens, De Angola a Contra-Costa, vol. 2, p. 446.

Thamnoloea arnotti SHELLEY, 1901, Ibis, p. 166 (east shore of L. Moero).

Thamnolaea arnotti DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (in part. L. Tanganyika).

Myrmecocichla arnotti NEAVE, 1910, Ibis, p. 141 (Kambove, 4500 ft.; Dikulwe R., 4000 ft.).

Myrmecocichla arnotti leucolaema NEUNZIG, 1926, Jour. Ornith., p. 753 (eastern Urundi). SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 286 (Elisabethville). VERHEYEN, 1941, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 17, no. 23, p. 12 (Musosa).

Myrmecocichla nigra var. *shelleyi* DE RIEMAECKER, 1927, Rev. Zool. Africaine, vol. 14, p. 279 (Kapunda).

Myrmecocichla nigra var. *leucolaema* DE RIEMAECKER, 1927, Rev. Zool. Africaine, vol. 14, p. 279 (Elisabethville).

Thamnolaea arnotti collaris SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 465 (in part. Northern Rhodesia; southern Belgian Congo). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 79 (Katofio). YOUNG AND WINTERBOTTOM, 1938, Ostrich, vol. 9, p. 94.

DISTRIBUTION OF THE SPECIES: From northeastern Transvaal and Ngamiland north to the Nguru Mountains in the east, the Kagera Valley and southeastern Congo, and to northern Angola on the west.

The young of both sexes are brownish black, with a large white area on wing-coverts, which includes the bases at least of the greater coverts. Later the males acquire some white on forehead or eyebrow, and the females become more or less white on the throat.

There are at least three races, rather easy of recognition, and one more doubtful. *M. a. arnotti* (Tristram) appears to have been discovered near Victoria Falls[1] and is large, with wings 97–111 mm., crown white in adult males, decidedly brown in females, the latter having throat and middle of chest white. It is restricted to the southern border of Angola, the vicinity of the Zambesi, and areas to the south.

Myrmecocichla arnotti harterti of the greater part of Angola has usually less white on the crown of the male, less white on sides of head and on chest of the female. There is little or no white on primary wing-coverts in either sex. Wings of adults measure 98–111 mm.

Myrmecocichla arnotti leucolaema of eastern Africa north of the Zambesi, the region of Lake Nyasa, and the southeastern Congo is much more like *arnotti* in color, but slightly smaller, wings 92–107 mm. The crown of the female is apt to be blacker, white on ear-coverts rather variable.

Myrmecocichla arnotti collaris of the country southwest of Lake Victoria has wings 92–104 mm., and is colored like *leucolaema* except that females have more whitish ear-coverts and in some there is a narrow white collar around the hind neck. Its validity has often been questioned.

[1] See Mackworth-Praed and Grant, 1942, Ibis, p. 521.

Individual variation, perhaps depending in part on age, makes it necessary to compare series before arriving at any satisfactory decision. The range of *leucolaema* in the Congo extends over Marungu and the Upper Katanga northward to Kabalo on the Lualaba, but not to the Kasai District. A half dozen males in the Congo Museum from Kabalo have much more black on outer webs of the greater wing-coverts than those from the Upper Katanga, and females from Kabalo show the same peculiarity. But I shall refer them all to *leucolaema*.

Rockefeller and Murphy secured three specimens at Lubenga, 5650 feet, in Marungu, where they frequented savanna woods. In the Upper Katanga the species inhabits similar light woodlands, and I collected three specimens near Elisabethville, one along a roadside. Pairs or families go about together, raising and lowering the tail as they perch, clinging momentarily to the bark of trees, and moving very actively. As a song the male gives a couple of high, squeaky whistles divided by one or more lower, rasping syllables. A shrill alarm whistle is also noticeable. The wing beats can be noisy at times. But this species is much less tuneful than *M. nigra*.

Instead of burrowing in the ground, *M. arnotti* places its nest in a hollow in the trunk of a tree, 6 to 10 feet or more above the ground. Three eggs are the rule, although there are occasionally four, blue-green, with fine red-brown speckling and larger brown spots sometimes coalescing on the blunt end. The dimensions are 22.4–23.1 by 16.2–16.7 mm. In East Africa and Northern Rhodesia nesting begins in the latter part of September. Near Lake Moero Alfred Vincent found a nest on October 11.[1]

[*Myrmecocichla arnotti collaris* Reichenow]

Myrmecocichla nigra, Form *collaris* Reichenow, 1882, Jour. Ornith., p. 212 (restricted type locality: Kakoma, Tanganyika Territory).

Myrmecocichla arnotti collaris Neunzig, 1926, Jour. Ornith., p. 754.

Not a well-marked race, for males are exactly like those of *leucolaema*, and while females always have ear-coverts whitish, barely half of them show a complete white collar on the hind neck.

The type locality, Kakoma, is east of Lake Tanganyika, and from there the range extends northward to the Kagera Valley,

[1] 1947, Ibis, p. 195.

where Grauer collected a small series near the eastern border of Ruanda. An adult female secured in Ruanda by Douce for the Congo Museum resembles *collaris* and even shows a trace of a white collar. It seems likely that this form will prove to inhabit eastern Ruanda.

Myrmecocichla arnotti harterti Neunzig

Myrmecocichla arnotti harterti NEUNZIG, 1926, Jour. Ornith., p. 754 (type locality: Malanje, Angola).

? *Myrmecocichla arnotti* SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 337 (Tshisika).

DISTRIBUTION: Angola, from the middle Kwango River and Malanje south to the southern edge of the Benguella Plateau.

There is great variation in the extent of white in the plumage of both sexes, but nowhere else in the range of the species is it apt to be so greatly restricted. Few males have the crown wholly white, that color being confined usually to forehead and supercilium. Females commonly have the ear-coverts black, and the white of the throat may be partly concealed by black.

Despite the mention of Damaraland and Ovamboland by Neunzig (1926) in the range of nominate *arnotti*, the species is not known from Southwest Africa, and the specimens of Eriksson in the Rothschild Collection appear to have come from two localities within the southern boundary of Angola.

While unknown in the Kasai District, unless a doubtful record from the southern border can be substantiated, *M. a. harterti* does reach the Kwango District of the Belgian Congo. Schwetz collected one example, now in the Congo Museum, at Franz Joseph Falls on the Kwango River. Dubois' supposed specimen of *arnotti* from the Lower Congo has proved to be *M. nigra*.

KEY TO THE SPECIES OF *Oenanthe* TO BE EXPECTED IN THE CONGO

1. A broad black band across upper breast in both sexes when adult: cheeks and fore crown black ..... *O. pileata*
   No black band across breast, though whole throat sometimes black in males .. 2
2. Back, wings, and sides of head black, throat usually black as well, the feathers with pale fringes when fresh ..... *O. pleschanka* ♂
   Neither throat nor back black 3
3. Back light gray, wings and cheeks blackish ..... *O. oenanthe* ♂
   Back brown or grayish, but wings and cheeks not black 4
4. Back dark brown; wing not over 90 mm., rufous edgings on coverts and inner secondaries; lores and a streak behind eye blackish brown .... *O. bottae*

Back lighter, sandy or gray-brown.....5
5. General color sandy brownish in both sexes; metatarsus 29 mm. or more; culmen (to base) usually over 20 mm.....*O. isabellina*
Coloration less uniform, wings darker; metatarsus usually less than 29 mm.; culmen not over 20 mm.....6
6. Bill larger, culmen (to base) 17–20 mm.; metatarsus 25–29 mm...*O. oenanthe*
Bill more slender, culmen 16–18 mm.; metatarsus 22–23 mm....*O. pleschanka*

Oenanthe pileata livingstonii (Tristram)

Campicola livingstonii TRISTRAM, 1867, Proc. Zool. Soc. London, p. 888 (type locality: Murchison Falls, Nyasaland).

Campicola pileata NEAVE, 1907, Mem. Proc. Manchester Lit. Phil. Soc., vol. 51, no. 10, p. 65 (Alala Plateau); 1910, Ibis, p. 143 (upper Lualaba R., 3500 ft.).

Saxicola pileata livingstonii MOURITZ, 1914, Ibis, p. 27 (Tshinshenda).

Saxicola pileata SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 295 (Dogodo R.).

Oenanthe pileata livingstonei LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 78 (Biano Plateau; Nasondoye; Kamina).

DISTRIBUTION OF THE SPECIES: Cape Province to Angola, the southeastern Congo, and Kenya Colony. *O. p. pileata* (Gmelin) is restricted to the southern part of the range, north to the Transvaal highveld. *O. p. livingstonii*, of slightly smaller size, occupies the remaining area, from lower western Transvaal to northern Angola, the southern Kwango District of the Congo, the Katanga, Tanganyika Territory, Nandi, Laikipia, and Mombasa in Kenya Colony.

While Livingstone's chat is not known from the Lower Congo or Kasai, Schwetz did collect three specimens at Wilhelm Falls on the Kwango River in early August. Others have been secured in the Upper Katanga, and one even at the Dogodo River, in the southeast corner of the Manyema District. Rockefeller and Murphy took one at Mlonde, 3875 feet, Marungu, on May 10.

The usual haunts are open elevated plains, almost treeless, and broad dirt roads. The birds hop on the ground, perch on bushes, posts, or even buildings, and sing pleasantly if not very sweetly. The male occasionally indulges in a flight display, with tail widely spread and wings beating rapidly near the horizontal. This may be accompanied with song, and Benson (1940) tells of hearing mimicry of *Afribyx senegallus*, *Melittophagus pusillus*, *Macronyx croceus*, *Geokichla litsipsirupa*, and *Dicrurus adsimilis* in Nyasaland.

In Kenya Colony this chat has two breeding seasons, April to June and again in December and January. Several observers in

Northern Rhodesia and the Katanga have suspected it of migrating, and there the breeding season must be in or near August. Spotted young were collected by Ansorge near the Kwango River in northern Angola on September 20, plainly hatched during the dry season. All records from the southeastern Congo are between May 10 and early November, with young reported by Lynes as early as August.

The nest is almost always placed in a burrow of some small mammal, usually 18 inches or more from the entrance, and is cup-shaped, of grass, rootlets, and hair. The eggs are three to four, uniform bluish white or greenish white, and measure about 25 by 17 mm.

[*Oenanthe bottae heuglini* (Finsch and Hartlaub)]

Saxicola heuglini FINSCH AND HARTLAUB, 1870, Die Vögel Ost-Afrikas, p. 259 ("Gondar"; but type probably from Sudan).

Oenanthe heuglini SCLATER AND M.-PRAED, 1918, Ibis, p. 687 (Mayik in Bahr-el-Ghazal Province).

Oenanthe campicolina GROTE, 1924, Jour. Ornith., p. 506 (Bozum).

Oenanthe bottae campicolina BLANCOU, 1933, Ois. Rev. Française Ornith., new ser., vol. 3, p. 330 (Ippy in southern Ubangi-Shari).

This species ranges from southwestern Arabia across Abyssinia to Darfur, northern Cameroon, Northern Nigeria, and the French Sudan. Birds of the Sudanese lowlands are strikingly smaller than those of the highlands of Northeast Africa and Arabia.

Oenanthe bottae campicolina (Reichenow) has been reported from Ippy, 110 miles from the Ubangi River, and *O. b. heuglini* has been collected at Mayik in the Bahr-el-Ghazal Province and Shambe on the Bahr-el-Jebel. The validity of the more western *campicolina* has scarcely been proved.

It is possible that this chat may occur occasionally in the dry season along the northern frontier of the Belgian Congo, but thus far it has not been reported there. In the Sudan there appears to be a southward movement toward mid-November, and nesting begins in December, in holes in the ground.

Oenanthe isabellina (Temminck)

Saxicola isabellina TEMMINCK, 1829, *in* Temminck and Laugier, Nouveau recueil de planches coloriées, livr. 79, pl. 472, fig. 1 (type locality: Nubia).

Oenanthe isabellina GROTE, 1937, Ornith. Monatsber., pp. 124 (map), 129. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 964 (Masindi; Butiaba).

DISTRIBUTION: Breeds from Asia Minor, Persia, and southern Russia to Tibet and Mongolia; migrates south to India and northeastern Africa, and westward in the Sudan to Timbuktu. In East Africa it reaches central Tanganyika Territory and Zanzibar during the northern winter.

Long known to have occurred at Wau in the Bahr-el-Ghazal, Lado, Butiaba, and Masindi in Uganda, the isabelline wheatear was to be expected on the Congo side of Lake Albert, even though it has not been found in the Upper Uelle. In 1943 J. M. Vrydagh wrote me that he had collected a specimen on the Ishwa Plain near Mahagi on December 6.

Oenanthe isabellina is slightly larger than the common wheatear, *O. oenanthe*, and always lighter brownish above. The sexes are much alike in *isabellina*, the males never black on the ear-coverts. During their winter period the behavior and the haunts of the two species are exactly similar.

Oenanthe oenanthe oenanthe (Linnaeus)

Motacilla oenanthe LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 186 (Europe; restricted type locality: Sweden).

Saxicola oenanthe oenanthe HARTERT, 1910, Die Vögel der paläarktischen Fauna, vol. 1, p. 679.

Oenanthe oenanthe oenanthe SCLATER AND M.-PRAED, 1918, Ibis, p. 686 (Meridi; Yei). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 450 (Upper Uelle District). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 339, pl. 12. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 116 (Buta).

SPECIMENS: Faradje, male, March 11; two females, February 5, March 1. Aba, male, December 19.

DISTRIBUTION OF THE SPECIES: The breeding range is from northern Quebec to Greenland, Europe, and northern Asia to Alaska; southward also to North Africa, Asia Minor, and northern Persia. A half dozen races are surely recognizable, and there has been considerable discussion as to their respective winter ranges in Africa.

Oenanthe oenanthe oenanthe, with wings of adult males 92–99 mm. and culmen to base 17–19 mm., breeds from Sweden and the British Isles across Europe and northern Asia to Alaska. It winters in Africa as far south as the savannas from Senegal to Northern Nigeria and the Upper Uelle, then pushing southward on

the eastern side of the forest to Tanganyika Territory, Northern Rhodesia, and even Nyasaland.[1]

Oenanthe oenanthe leucorhoa (Gmelin), nesting in West Greenland and adjacent Canadian areas, is larger, with wings of adult males 102–110 mm., but culmen 17–19 mm. It is highly migratory, and known to reach the Cape Verde Islands, Senegal, and Sierra Leone. It seems most unlikely that this race could migrate in any numbers to East Africa. *Oenanthe o. schiöleri* Salomonsen, intermediate in size between the two foregoing, nests in East Greenland, Iceland, and the Faroes. It may be expected also in western Africa, though identification of winter specimens will not be easy.

Oenanthe o. nivea (Weigold) of Spain and *O. o. virago* Meinertzhagen of Crete are probably not much more migratory than *O. o. seebohmi* (Dixon) of the highlands of Morocco and Algeria. It should be noted that males of *seebohmi* become black on the throat, suggesting relationship with *O. phillipsi* (Shelley), a resident bird of highlands in Somaliland.

Winter visitors in eastern Africa are often of such large size that they have been referred to the West Greenland race. But it is far more likely that there are large wheatears breeding somewhere in Asia and that these move in numbers toward northeastern Africa. A dozen males from East Africa with wings 100–104 mm. have the culmen (to base) 19–20 mm.—noticeably longer than in *leucorhoa*. For the present it seems best to call such birds *O. o. rostrata* (Hemprich and Ehrenberg), even though that name was based on large migrant individuals from Upper Egypt and Syria.[2] The types of *argentea* Lönnberg and *palaearctica* Kleinschmidt were somewhat similar examples taken nearer their supposed breeding grounds. It is possible that such a form may occasionally reach the northeast corner of the Congo.

Only the nominate race is known so far from Congo territory and only in the grasslands of the Uelle, near Mahagi and in the Rutshuru Plain. My two males have wings 92 and 96 mm., the females 92–97 mm. A single male from the Rutshuru Plain, taken by Grauer in January, has the wing 93 mm.

I saw none near Lake Edward in February or March, 1927, but

[1] Benson, 1940, Ibis, p. 605; 1942, idem, p. 311.

[2] Mackworth-Praed and Grant, 1951, Ibis, pp. 234–236, prefer the name *libanotica* Hemprich and Ehrenberg.

wheatears are not uncommon in the northeastern Uelle during the dry season. Usually one finds them singly in open cultivated land, on barren rocky hills, and even in manioc fields. They are fond also of freshly burned areas. The date of arrival was early October, and towards the middle of March they appeared more numerous or conspicuous. Then within a couple of weeks all had departed.

[*Oenanthe pleschanka pleschanka* (Lepechin)]

Motacilla pleschanka LEPECHIN, 1771, Novi Comm. Acad. Sci. Petropolitanae, vol. 14, p. 503, pl. 24 (type locality: Saratov on Volga R.).

Saxicola pleschanka REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 728 (Foweira).

Oenanthe pleschanka pleschanka GROTE, 1937, Ornith. Monatsber., pp. 116 (map), 120 (Uganda).

Oenanthe leucomela leucomela JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 963.

The pied wheatear breeds from Dobrudja and southern Russia through central Asia to northern China. In addition to the nominate form, there is a race (*cypriaca* Homeyer) peculiar to Cyprus. The Asiatic race migrates into northeastern Africa, where it reaches the northeastern part of Tanganyika Territory and becomes common in central Kenya Colony. It also visits the White Nile and northern Uganda and was taken by Ansorge at Foweira on the Victoria Nile, so there is a possibility of its occurrence on the shores of Lake Albert.

Pentholaea albifrons clericalis Hartlaub

Pentholaea clericalis HARTLAUB, 1882, Ornith. Centralbl., p. 91 (type locality: Langomeri, in Lado district); 1882, Jour. Ornith., p. 321 (Wandi); 1882, Abhandl. Naturwiss. Ver. Bremen, vol. 8, p. 188. SHELLEY, 1888, Proc. Zool. Soc. London, p. 20 (Kuterma). SCHWEINFURTH AND RATZEL, 1888, Emin Pascha, eine Sammlung von Reisebriefen, p. 365 (Djanda, western Lado district). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (Uelle). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 709 (Rimo). SCLATER AND M.-PRAED, 1918, Ibis, p. 684 (Yei; upper valley of Uelle). EMIN, 1919, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 2, pp. 424, 427, 428 (Tobbo). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 3, p. 237. BERLIOZ, 1922, Bull. Mus. Hist. Nat. Paris, vol. 28, p. 265 (Libogo; between Gombiri Mts. and Yei R.). BANNERMAN AND BATES, 1924, Ibis, p. 232.

Pentholaea albifrons clericalis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 462. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 116 (Niangara; Mauda; Abimva). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 970.

SPECIMENS: Niangara, male, immature male, November 10. Faradje, three males, April 12, September 10, October 25; two females, February 1, September 8. Aba, male, July 17; immature male, July 20; immature female, July 19. Garamba, male, female, July 14; immature male, July 13.

ADULTS OF BOTH SEXES: Iris dark brown, bill and feet black.

DISTRIBUTION OF THE SPECIES: Eritrea and southwestern Abyssinia across the southern Sudan to the Gambia, extending southward to the northern edge of the Guinean forests. *P. a. albifrons* (Rüppell) of Eritrea and northern Abyssinia has the forehead white in the male, the inner margins of the remiges whitish gray for the greater part of their length. *P. a. pachyrhyncha* Neumann, of southwest Abyssinia, is similar but with bill markedly broader at the base.

Pentholaea albifrons clericalis has large white shoulder patches in the male, in addition to the white forehead, and the lining of the wing-quills nearly black. It ranges from northern Uganda near the Bahr-el-Jebel westward to the region of Bozum in the Ubangi-Shari Province. Near Bozum many males have a reduced area of white on the wing-coverts, showing intergradation or hybridism with the Upper Guinea race, and such birds from northern Cameroon are known as *P. a. limbata* Reichenow. From the Cameroon west to the Gambia lives *P. a. frontalis* (Swainson), with a white forehead, black wing-coverts, and lining of wing-coverts glossy gray.

In the Upper Uelle we found this small black and white chat fairly numerous from Nala to Niangara, Aba, and Garamba, usually perching on stumps or small trees in fields under cultivation, but also on the hills near Aba. Schubotz secured two specimens at Api in 1911. Single birds or pairs are the rule; and the piping call is not loud, nor is the more musical song often noticed. One is struck by the relative silence of *Pentholaea*, as compared with the larger *Myrmecocichla nigra*.

Dissections gave no indication of breeding from April to September. Males with large gonads were noted in October and November, before the end of the rains, and nests were found on January 5 and February 1. One was in a hollow cylinder of bark, standing up a foot or two above the ground in burned savanna. The principal materials were dry rootlets and bits of grass, the exterior formed of cobwebs mixed with fire-blackened particles. Two

days later the sitting bird had been killed by some predator. The eggs had been three and, from their broken shells, pale green thickly spotted with light rufous, especially around the larger end.

The other nest was on the ground in a spot that had been burned, beneath a horizontal stick at the base of a small tree. Cobwebs again formed an important part of the nest. It held three nestlings, assuming their spotted juvenal plumage and still retaining some dark smoky brown natal down at the sides of the crown, on the nape, and on the back.

The food must be wholly of insects. In seven stomachs we found nothing else; only once was there a small caterpillar.

KEY TO THE CONGO SPECIES OF *Saxicola*

Upper tail-coverts white, sometimes tipped with rufous or brown; outermost primary much longer than primary-coverts; males with whole head black ..... *S. torquata*

Upper tail-coverts light brown, spotted with blackish; outermost primary about as long as primary coverts; males black only on sides of head, throat pale rufous ..... *S. rubetra*:

Saxicola torquata salax (Verreaux)

Pratincola salax VERREAUX, 1851, Rev. Mag. Zool., p. 307 (type locality: Gaboon). MENEGAUX, 1918, Rev. Française Ornith., vol. 5, p. 259 (Zambi).

? *Pratincola rubetra* JOHNSTON, 1884, The river Congo, p. 364 (Cataract region).

Pratincola torquata OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127.

Saxicola torquata salax MEINERTZHAGEN, 1922, Ibis, p. 27. SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 338 (Basongo); 1926, idem, vol. 13, p. 199 (Boma). GROTE, 1925, Jour. Ornith., p. 631 (Chinchoxo). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 467. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 379. BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 68 (Brazzaville).

Saxicola torquata SCHOUTEDEN, 1925, Rev. Zool. Africaine, vol. 13, p. 15 (Kunungu).

SPECIMENS: Boma, two males, January 2, 11; two females, January 2, 25; immature male, January 11.

ADULTS OF BOTH SEXES: Iris dark brown, bill and feet black.

DISTRIBUTION OF THE SPECIES: The stonechat is an exceptionally wide-ranging bird, breeding in various regions from the Cape of Good Hope to southern Scandinavia, Siberia, Saghalien, and the Kurile Islands. Of approximately 24 subspecies, only the African forms can be discussed here.

Saxicola torquata torquata Linnaeus is restricted to southern and western Cape Province. *S. t. robusta* (Tristram), with more uniform rufous underparts and wings 67–75 mm., extends from eastern Cape Province to Bechuanaland, the Transvaal, and Portuguese East Africa. *S. t. stonei*, similar in color but with wings only 63–69 mm., lives from Southern Rhodesia to the interior of Angola, the Katanga, and Lake Tanganyika. *S. t. promiscua* Hartert of southern Tanganyika Territory agrees with *stonei* in size but has much more white on the lower underparts.

Saxicola torquata salax, with wings 63–69 mm., is a lowland race from the region near the Congo River mouth. Males are white below, with a narrow rufous chest band. *S. t. axillaris* is a larger highland race, with wings 66–73 mm. and rufous of chest restricted, sometimes nearly absent. It occupies mountain grasslands from the Kivu and the eastern Ituri to Kenya Colony and northern Tanganyika Territory.

In Abyssinia lives *S. t. albofasciata* Rüppell, with little or no rufous on chest of males. Darfur has *S. t. jebelmarrae* Lynes; Mt. Cameroon and Clarence Peak have the large *S. t. pallidigula* (Reichenow). *S. t. adamauae* Grote of the Cameroon grasslands is very like *salax*, but has wings 66–73 mm. *S. t. moptana* Bates dwells in the French Sudan, while *S. t. nebularum* Bates is limited to high mountains in Sierra Leone and French Guinea.

The Palearctic races are not highly migratory, and they invade tropical Africa only as far as Somaliland, Abyssinia, and the White Nile. It seems that the races *variegata* (Gmelin) and *armenica* Stegmann both reach the eastern Sudan.

In some parts of Africa the resident subspecies are limited to highlands, but *S. t. salax* comes right down to sea level. Its range is from the Gaboon coast to the Cuanza River, inland to the Bateké Plateau, Bolobo, and the lower Kasai River. Malbrant has secured specimens at Madingou and Djambala in the French Congo.

About Boma in January, 1915, I found *salax* not uncommon, usually near cultivated ground or in the grassy valleys, perching on bushes or even tall grass stalks. At that season they were quite silent, and dissections showed they were not breeding. Three stomachs contained only insect remains, including one large white coleopterous larva.

Saxicola torquata axillaris (Shelley)

Pratincola axillaris SHELLEY, 1884, Proc. Zool. Soc. London, p. 556 (type locality: Kilimanjaro, 7000 ft.).

Pratincola emmae HARTLAUB, 1890, Jour. Ornith., p. 152 (type locality: Ruganda in Ankole; also from Buguera).

Pratincola salax REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 733 (Songa; Lendu); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 369 (L. Mohasi; L. Galago; Mt. Karisimbi; northwest of L. Tanganyika). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 375 (Mubuku Valley, 5000–6000 ft.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 293 (Kisaka; Urundi; Usumbura; Ruzizi Valley; Rutshuru Plain). LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 32 (Rutshuru; Kabare). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 295 (Kibati; Busuenda; Bulaimu; Boga; Mokoto; Tsisilongo; Biogo; Kamabo).

Pratincola rubicola O.-GRANT, 1908, Ibis, p. 300 (Mfumbiro Volcanoes, 5000 ft.). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 370. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 293. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 295 (foot of Mt. Kishasha). EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 239 (Kavalli).

Pratincola torquata axillaris HARTERT, 1910, Jour. Ornith., p. 176 (L. Kivu; eastern Kivu Volcanoes, 2100 m.; northwest of L. Tanganyika, 1600–2300 m.; 80 km. west of Baraka).

Saxicola salax O.-GRANT, 1917, Ibis, p. 81 (Ruwenzori).

Saxicola torquata axillaris HARTERT, 1920, Novitates Zool., vol. 27, p. 472 (Ruganda in Ankole). MEINERTZHAGEN, 1922, Ibis, p. 26. GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 164 (Mt. Muhavura, 2200 m.; Mt. Sabinyo, 2600 m.; Tamohanga; Abeli). FRIEDMANN, 1930, The African Republic of Liberia and the Belgian Congo, vol. 2, p. 760 (Lulenga). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 468. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 314 (Kibati; Ngoma); 1933, idem, vol. 22, p. 375 (Kisenyi; Mutura); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 117 (Djalasinda; Mahagi Port); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 110 (Nzulu; Mugunga; Burunga and Kalondo in Mokoto; Kibumba; Tshamugussa; Mt. Gahinga, 3475 m.; Kundhuru-ya-Tshuve; Ruhengeri; Kanyabayongo; Nyabirehe; L. Ngando; Mt. Visoke); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 338 (Kibingo; Bimba; Kayanza; Astrida) JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 976. PETERS AND LOVERIDGE, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 251 (Idjwi I.).

Pratincola torquata rubicola GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 164 (Kibati).

Saxicola torquata robusta SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 315 (in part. Lulenga; Nya-Muzinga; Kibati; foot of Kishasha); 1933, idem, vol. 22, p. 375 (Kisenyi–Ruhengere).

DISTRIBUTION: Kilimanjaro and the highlands of Kenya Colony, westward across Uganda and northern Tanganyika

Territory to the northern end of Lake Tanganyika, the Kivu District, and the plateau west of Lake Albert. There is considerable resemblance in coloration between this race and *salax*, but the eastern birds are larger, and the males of *axillaris* often have the rufous chest patch still more restricted.

While mainly a highland bird, *axillaris* has been reported from Mahagi Port, and it comes down to about 3000 feet near Irumu, and likewise in the upper Semliki and Rutshuru valleys. From those levels it extends regularly up to 8000 or 8500 feet, wherever suitable grassy areas exist, and is occasionally seen on the Kivu Volcanoes up to 12,300 feet.

This stonechat avoids mountain forest but lives among the bushes, tall grasses, and bracken in open spaces, and sometimes frequents alpine meadows like Lukumi, high up on Mt. Karisimbi, where I saw a pair in June. The weak piping and chattering notes are not apt to attract attention.

Birds ready for breeding were taken on the highland west of Lake Edward in March, and about the Kivu Volcanoes in June, but Grauer also collected four young in full spotted juvenal dress in the region of Lake Kivu between October 4 and December 22. Farther south Rockefeller and Murphy secured a male with gonads enlarged late in June, at 7650 feet on Mt. Kandashomwa. All this points to a double breeding season in the Kivu.

In the highlands of western Kenya Colony nests have been found by Jackson, Granvik, and others, mainly in April and May. They are usually placed in hollows in the earth close to a tussock of grass or a termite mound and are composed of grass and rootlets with some soft lining of fur or hair. Eggs are two to four, grayish blue or dull greenish, speckled with rufous or blotched with brownish, and measure 17.4–21.7 by 13.3–15 mm.

Saxicola torquata stonei Bowen

Saxicola torquata stonei Bowen, 1931, Proc. Acad. Nat. Sci. Philadelphia, vol. 83, p. 8 (type locality: Vila General Machado, Angola). Benson, 1940, Ibis, p. 607 (southern Belgian Congo).

Pratincola torquata Neave, 1907, Mem. Proc. Manchester Lit. Phil. Soc., vol. 51, no. 10, p. 64 (Alala Plateau); 1910, Ibis, p. 142 (upper Lualaba R., 3500 ft.). De Riemaecker, 1927, Rev. Zool. Africaine, vol. 14, p. 279 (Kafubu R.).

Saxicola torquata robusta Sclater, 1930, Systema avium Aethiopicarum, pt. 2, p. 467 (Katanga). Schouteden, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 286 (Elisabethville); 1932, idem, vol. 21, p. 315 (in part. Elisabethville). Grant and

M.-PRAED, 1940, Bull. Brit. Ornith. Club, vol. 61, p. 16. VERHEYEN, 1941, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 17, no. 23, p. 12 (Musosa).

Saxicola torquata orientalis A. W. VINCENT, 1947, Ibis, p. 197.

DISTRIBUTION: From Southern Rhodesia and the interior of Angola to Nyasaland, the Katanga, Marungu, and Mt. Kungwe on the east side of Lake Tanganyika. Males are readily distinguished from those of *axillaris* and *salax* by the extensive rufous of their underparts, which includes the lower breast and flanks. Intergradation with *salax* takes place near the Cuanza River in northern Angola, and on the west side of Lake Tanganyika the Lukuga Valley must separate *stonei* from *axillaris*. No representative is known from the Kasai District.

While generally a highland bird, *stonei* comes well down into the Lualaba Valley, for I have taken specimens at Kiabo and at Kabalongwe. It is not uncommon in the Upper Katanga, and Rockefeller and Murphy collected it in Marungu at Mkuli, 5225 feet, Ketendwe, 6025 feet, and Lake Suzi, 3850 feet. In behavior this race agrees with the others. Breeding begins in the Katanga with August, and the Marungu birds were in their off season by February. Nests have been found in Nyasaland by Belcher and by Benson in October and November, cups of grass with a soft lining, sometimes of hyrax fur, under a stone or an overturned tussock of grass. Eggs number three or four, are greenish blue, usually with reddish markings, and measure 18 by 14.5 mm.

Saxicola rubetra (Linnaeus)

Motacilla rubetra LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 186 (Europe; restricted type locality: Sweden).

Pratincola rubetra EMIN, 1892, Zool. Jahrb., vol. 6, p. 148 (west shore of L. Albert); 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 233 (Kavalli). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127; 1904, Bull. Mus. Hist. Nat. Paris, vol. 10, p. 538 (Ouadda on Ubangi R.). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 370 (Kasenyi; Beni; Mboga). SALVADORI, 1911, Ann. Mus. Civ. Genova, ser. 3, vol. 5, p. 449 (zone of Gurba-Dungu). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 292 (Kisaka; Usumbura; Irumu). LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 32 (Rutshuru). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 295 (Kibati; Mai-na-Kwenda; Tsisilongo; Moera). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 206 (western Makraka; Tunguru; Mswa).

Saxicola rubetra rubetra GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 42. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 315 (Kisenyi; Ngoma);

1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 117 (Buta; Mauda; Dika; Dramba; Faradje); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 112 (Burunga in Mokoto, 2000 m.; Ngesho; Kanyabayongo). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 67 (Ouadda; upper Kemo R.; Bangui).

Saxicola rubetra SCHOUTEDEN, 1935, Rev. Zool. Bot. Africaines, vol. 27, p. 402 (Mulungu); 1942, idem, vol. 36, p. 338 (Astrida); 1943, idem, vol. 37, p. 271 (Gabiro).

Saxicola ruberta HENDRICKX, 1944, Ostrich, vol. 15, p. 210 (southwest of L. Kivu).

SPECIMENS: Ngayu, male, December 13. Niangara, male, November 7. Faradje, five males, February 21, March 8, October 17, 18, November 21.

ADULT MALE: Iris dark brown, bill and feet blackish.

DISTRIBUTION: The whinchat breeds throughout most of Europe and in western Siberia. In autumn it migrates to equatorial Africa and on the eastern side regularly as far as northern Nyasaland. It has been reported from Principe Island and once even from Swakopmund in Southwest Africa.

In western Africa the equatorial forest belt offers a serious obstacle, so that while some whinchats penetrate to its clearings, few ever find their way across. I have never seen one in the grasslands of the Lower Congo or in the neighborhood of Lukolela, yet the Congo Museum has a skin from Kunungu. One of our specimens was taken at Ngayu in the Ituri forest, and at Stanleyville I noted a single bird on November 14, 1914.

Just to the east of the forest, near Beni and Lake Edward, whinchats are rather common during the northern winter. Grauer and I have both taken specimens on the highland near Luofu, and Grauer also secured one 80 kilometers west of Baraka. Rockefeller and Murphy collected a male at Kigoma on the eastern shore of Lake Tanganyika and a female at Sambwe, 6100 feet, in Marungu, on February 28.

Along the northern border of the forest this is a very common bird in the Uelle grasslands from the latter part of the rains through the dry season, usually perching silently on a stump or low bush in native farms and along roadsides. The earliest date noted for its arrival was September 22 in 1912, and the main departure from the Uelle took place toward the middle of March, after the males had undergone the prenuptial molt and regained the bright cinnamon rufous color of the chest. Stragglers remain until mid-April.

The food during their stay consists mainly of insects, though some seeds were also noted in one stomach.

Cercomela familiaris falkensteini (Cabanis)

Saxicola falkensteini CABANIS, 1875, Jour. Ornith., p. 235 (type locality: Chinchoxo, Loango Coast). REICHENOW, 1887, Jour. Ornith., p. 302 (Manyanga).

Phoenicurus familiaris falkensteini REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 783.

Cercomela familiaris falkensteini LYNES, 1926, Ibis, pp. 393, 396 (in part). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 459 (in part). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 361, pl. 13.

Cercomela familiaris omoensis SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 116 (Dramba; Mahagi Port).

SPECIMENS: Boma, male, January 24; immature female, January 17. Aba, two males, July 13, December 14; two females, July 18, December 14.

ADULTS OF BOTH SEXES: Iris dark brown, bill and feet blackish brown.

DISTRIBUTION OF THE SPECIES: From Cape Town northward to the southern edge of the Gaboon forest, the Katanga, and Tanganyika Territory, then north through the Kivu region to the Upper Uelle, Konta in southern Abyssinia, the Nuba Mountains, and westward again to the Northern Territories of the Gold Coast.

Six or seven races are recognizable. *C. f. familiaris* (Stephens) and *hellmayri* (Reichenow) of South Africa are large and dark brownish, *C. f. galtoni* (Strickland) of Southwest Africa is pale, as is also *angolensis* Lynes of the coast of Angola.

Cercomela familiaris modesta (Shelley) seems to be a valid race, occupying Nyasaland, the Katanga, and other adjacent areas. It is rather grayish in color with whitish abdomen. *C. f. falkensteini* is more brownish gray and is found not only in the Lower Congo and on the Loango Coast but north of the equatorial forest from the Gold Coast to the north end of Lake Albert and thence to the Nuba Mountains. *C. f. omoensis* (Neumann), of southwest Abyssinia and the region of Lake Rudolf, is of dark smoky coloration.

My specimens from Boma are almost topotypical of *falkensteini*, and they differ so little from those found near Aba, at the opposite extremity of the Belgian Congo, that I have to agree with Bannerman in synonymizing *gambagae*, *tessmanni*, and *genderuensis*. The wings of my three males measure 75.5, 77, and 79 mm., those

of three females 72, 72, and 73.5. All are smaller than the measurements given for this race by Lynes (1926).

In the Lower Congo I met with this rufous-tailed chat at only one spot just north of Boma, on a hillside near a wooded ravine. About the hills near Aba, on the other hand, a number of individuals were seen, perching in small trees or on stumps in fields cultivated by natives. Away from the hills none was ever found. They wag the tail in a way that recalls the nervous quivering by the European redstart, females of which they so closely resemble. The shrill, whistled note is not loud and is easily overlooked.

In tropical Africa this species is strongly attached to rocky hills, avoiding lowland and mountain forests. Of our six specimens only one was in condition to breed, the male taken near Aba on December 14. This would indicate that nesting takes place there during the drought. At Gambaga in the Gold Coast Alexander found the nest in December, under large stones. In early April in Nigeria Serle[1] discovered a small, cup-shaped nest in a cleft well up on a granite hill. It held three young. The eggs of this species are usually greenish blue with rusty speckling.

My examination of four stomachs disclosed insects in every instance, one of them a grasshopper, but a berry and other small fruits were found in two cases.

Cercomela familiaris modesta (Shelley)

Bessonornis modesta SHELLEY, 1897, Ibis, p. 539, pl. 12, fig. 1 (type locality: Karonga, northwest shore of L. Nyasa).

Ruticilla tithys DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, no. 3, p. 148 (L. Tanganyika).

Ruticilla titys DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31.

Saxicola falkensteini NEAVE, 1907, Mem. Proc. Manchester Lit. Phil. Soc., vol. 51, no. 10, p. 64 (Ndola); 1910, Ibis, p. 143 (Ruwe, 4500 ft.). O.-GRANT, 1908, Ibis, p. 298 (Mfumbiro Volcanoes, 5000 ft.; north of L. Tanganyika).

Phoenicurus (?) *falkensteini* SALVADORI, 1907, Boll. Mus. Zool. Anat. Comp. Torino, vol. 22, no. 570, p. 8 (Lukonzolwa).

Phoenicurus familiaris falkensteini REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 374. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 284 (Uvira; Kisaka).

Phoenicurus phoenicurus phoenicurus SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 313 (Kisenyi); 1933, idem, vol. 22, p. 375 (Nyundo, 1876 m.).

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[1] 1940, Ibis, p. 9.

Cercomela familaris modesta SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 110.

Cercomela familiaris falkensteini JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 968 (Kigezi).

DISTRIBUTION: From the neighborhood of the middle Zambesi north through Nyasaland to the Katanga, Lake Tanganyika, Lake Kivu, Bukoba, and the Mara River, east of Lake Victoria; perhaps westward also to the highlands of Angola.

The name *modesta* has usually been treated as a synonym of *falkensteini*, but specimens from the southeastern Congo and the interior of Angola are usually more grayish, with whiter abdomen, and are somewhat larger than birds from the Lower Congo. Two males from Lubenga 5650 feet, in Marungu have wings 83 and 86 mm.; a female from the same locality has the wing 80 mm. The wing length of the type of *modesta* was given as 83.8 mm., and a single specimen from Kisenyi on Lake Kivu has the wing 83 mm. long. Wing measurements would be about 78–86 mm. for *C. f. modesta*.

In the southeastern Congo and the Kivu District this chat is very local in distribution, no doubt because of its preference for rocky places. The specimen reported by Dubois as *Ruticilla tithys* was taken by Storms at Mpala on June 12, 1884, and I have seen it in the Brussels Museum. At Lubenga in Marungu Rockefeller and Murphy noted the species as common, feeding on insects, both in trees and on the ground. In Ruanda it has been secured by Douce at 6150 feet near Nyundo.

We have a fledgling in spotted juvenal plumage from northern Karagwe in late May, and a nest was reported from the east side of Lake Victoria in August. In Nyasaland, according to Belcher, nesting may begin during August, and eggs are laid in September. The young leave the nest before the first heavy rains fall. Nests are placed under stones on rocky hillsides, in crevices on the side of a ravine, or even in a hole in the wall of a house. One nest is known to have been placed in an old swallow nest beneath a rocky ledge. Three to four eggs form a set, greenish blue to deep blue, speckled with red-brown, and often with a wreath around the blunt end. Measurements are 18.5–19 by 14.5–15 mm.

Phoenicurus phoenicurus phoenicurus (Linnaeus)

Motacilla phoenicurus LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 187 (Europe; restricted type locality: Sweden).

? *Ruticilla phoenicura* REICHENOW, 1874, Correspondenzbl. Afrikanischen Gesellsch., no. 10, p. 177 ("Loango Coast").

? *Ruticilla phaenicura* BOCAGE, 1881, Ornithologie d'Angola, pt. 2, p. 274 ("Loango").

Ruticilla phoenicura HARTLAUB, 1887, Zool. Jahrb., vol. 2, p. 319 (Tomaya). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 ("Ituri"). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 209 (Makraka; Tunguru; Mswa). EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, pp. 12, 69, 82.

Ruticilla phoenicurus SCHWEINFURTH AND RATZEL, 1888, Emin Pascha, eine Sammlung von Reisebriefen, p. 394 (west Makraka).

Phoenicurus phoenicurus phoenicurus SCLATER AND M.-PRAED, 1918, Ibis, p. 679 (Tembura; Meridi; Yei). BOWEN, 1931, Catalogue of Sudan birds, vol. 2, p. 46. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 118 (Dramba).

SPECIMENS: Niangara, male, December 16. Faradje, four males, January 1, March 13, November 22, 28.

DISTRIBUTION OF THE SPECIES: Breeds throughout Europe, in Morocco and Algeria, also eastward in Asia to Irkutsk and the region of Lake Baikal. The nominate race occupies the whole northern area; *P. p. algeriensis* (Kleinschmidt), with blunter wing tips, nests in North Africa, Spain, and Portugal; and *P. p. samamisicus*, with white outer edgings on the secondaries in adult males, has its home from Asia Minor and the Crimea to the Caucasus and Persia.

Phoenicurus p. phoenicurus winters in Africa south to the northern edge of the Guinean forests, the shores of Lake Albert, Bukoba on Lake Victoria, and northern Kenya Colony. Reichenow's old record from the Loango Coast was surely erroneous and may have been based on a redstart found dead by Falkenstein[1] on shipboard off Rio de Oro.

In the northern Uelle District the redstart is a common bird in the middle of the dry season, and was first noticed in 1912 on November 22. In Darfur Lynes saw it passing through from September 19 to the end of October. Most individuals have left the northern Congo again by the middle of March, though Emin noted one at the north end of Lake Albert on March 29. Dubois' record from the "Ituri" is doubtless based on a specimen from the Upper Uelle or the Lado Enclave; we saw none south of the Bomokandi River.

[1] 1877, Jour. Ornith., p. 1.

Perching on bushes along the paths in the dry savanna, the redstart quivers its tail nervously and can be mistaken for nothing save perhaps *Cercomela familiaris*. The latter bird is more attached to hills and rocks.

[*Phoenicurus phoenicurus samamisicus* (Hablizl)]

Motacilla samamisica HABLIZL, 1783, Neue Nordische Beitr., vol. 4, p. 60 (type locality: Samamish Alps, Gilan Province, western Persia).

? *Phoenicurus phoenicurus mesoleucus* SCLATER AND M.-PRAED, 1918, Ibis, p. 780 (Yei).

Phoenicurus phoenicurus samamisicus BOWEN, 1931, Catalogue of Sudan birds, vol. 2, p. 46 (Yei).

The white-winged redstart winters regularly in Abyssinia and has once been reported from Yei, close to our northeastern limit, in November. The specimen was a male collected by Cuthbert Christy, and according to Bowen it was identified at the British Museum. Sclater and Praed (1918) pointed out the possibility, but were less sure that winter specimens could be recognized. In the case of adult males this should not be difficult, since the outer webs of their secondaries are bordered with white.

KEY TO THE SPECIES OF *Luscinia* FOUND IN THE CONGO

Tail usually more rufous than back; small outermost primary 15 mm. or more in length, equaling or exceeding the primary-coverts.... *L. megarhynchos*

Tail scarcely more rufous than back; outermost primary 12 mm. long at most, distinctly shorter than primary-coverts; chest faintly mottled with brownish gray..... *L. luscinia*

Luscinia megarhynchos megarhynchos Brehm

Luscinia megarhynchos C. L. BREHM, 1831, Handbuch der Naturgeschichte aller Vögel Deutschlands, p. 356 (type locality: Germany).

Luscinia philomela SCHWEINFURTH AND RATZEL, 1888, Emin Pascha, eine Sammlung von Reisebriefen, p. 394 (Makraka). EMIN, 1892, Zool. Jahrb., vol. 6, p. 147 (L. Albert); 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, pp. 9, 12 (Tunguru). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127.

Luscinia megarhyncha megarhyncha SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 492 (Mobaye on Ubangi R.). BANNERMAN, 1931, Ibis, p. 74. GROTE, 1931, Mitt. Zool. Mus. Berlin, vol. 17, p. 410; 1936, Ornith. Monatsber., p. 99, map. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 118 (Mauda). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 1011 (Uelle District; Butiaba). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 68 (upper Kemo R.).

Luscinia megarhynchos megarhynchos BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 434, fig. 117.

SPECIMENS: Niangara, male, November 10; immature male, December 19. Faradje, two males, December 3, 11; immature female, November 10.

DISTRIBUTION OF THE SPECIES: From England, western Europe, and Morocco eastward to Turkestan, the Tian Shan, and southern Altai. *L. m. megarhynchos*, with wings 79–89 mm., tail 63–72, occupies the whole of the European area, reaching the Crimea and Asia Minor. *L. m. africana* (Fischer and Reichenow) breeds in Persia and the southern Causasus. It is colored much like the nominate race but has the tail slightly longer, 73–79 mm. *L. m. hafizi* Sewertzoff, breeding from Turkestan eastward, is a paler race, larger than both the foregoing. Its wings measure 91–96 mm., tail 82–88 mm.

The European nightingale (*megarhynchos*) migrates south to western and central Africa, reaching the coast in Sierra Leone, the Gold Coast, and Nigeria. But most individuals winter north of the line of solid forest. Lake Albert, the north shore of Lake Victoria, and Nairobi mark its southern limit farther east.

The Persian race (*africana*) was discovered near Kilimanjaro, and its winter range lies between that region of East Africa, Somaliland, and southern Arabia. The Turkestan nightingale (*hafizi*) also enters northeastern Africa by way of Arabia and Somaliland, reaching Marsabit and the southern coastal region of Kenya Colony.

The European nightingale is a rather common visitor along the upper Ubangi and in the Upper Uelle District, where it arrives about November 1. In 1910 it was first observed on November 10, in 1912 on October 31. Departure took place in March. I have never heard the nightingale's full song in Africa, but others have been more fortunate, both in West Africa and in Uganda.

In my experience the birds sought concealment in the thickest bushes at hand, betraying their presence by a dry, harsh call note ("kh-k-k-k-k-k") or a very broken sort of song. On rare occasions the attempt at a song was heard at night. The little evidence gained from two stomachs indicated a diet wholly of insects.

Luscinia luscinia (Linnaeus)

Motacilla luscinia LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 184 (Europe; restricted type locality: Sweden).

? *Luscinia luscinia* (*philomela*) SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 118 ("Tunguru").

Luscinia luscinia LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 116 (Kasenga on Luapula R.).

DISTRIBUTION: Breeding from southern Sweden and northeastern Germany through southern Russia to Turkestan and the northwestern foothills of the Altai. The thrush-nightingale or sprosser migrates southward into Africa, mainly east of the White Nile, and winters in eastern Africa south to the Zambesi, occasionally to Southern Rhodesia, to Pretoria, and possibly even to Natal.

It is rather surprising that this bird has not yet been reported from the Kivu or Ruanda, and I am not at all convinced that Emin's record of *philomela* from Tunguru on Lake Albert belongs here. It does occur on the eastern side of Lake Tanganyika, for a specimen taken by Böhm at Simbile near Kakoma was described as *Lusciola böhmi* by Reichenow and was said at first to have come from Marungu. Lynes and Vincent collected one male and noted several others singing in good, but not full, form in January at Kasenga on the Luapula River. Further occurrences are to be expected in the region of Lake Moero.

Dates of occurrence in eastern Africa are from the latter part of September to the third week in April. The song of the sprosser is like that of the nightingale and is usually regarded as even more melodious.

KEY TO THE SPECIES OF *Neocossyphus*

Outer rectrices wholly rufous, only a little lighter than the middle ones... *N. rufus*
Outer rectrices blackish brown basally, with large patches of white distally; middle ones entirely blackish brown..... *N. poensis*

Neocossyphus rufus gabunensis Neumann

Neocossyphus rufus gabunensis NEUMANN, 1908, Bull. Brit. Ornith. Club, vol. 21, p. 77 (type locality: Ohumbe, L. Onange, Gaboon). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 286 (Moera; Beni; Beni-Mawambi; Ukaika). BEQUAERT, 1922, Bull. Amer. Mus. Nat. Hist., vol. 45, p. 313 (Avakubi). CHAPIN, 1927, Bull. Amer. Mus. Nat. Hist., vol. 53, p. 478. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, pp. 328, 416, fig. 88. SCHOUTEDEN, 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 39 (Buta). GRANT AND M.-PRAED, 1946, Bull. Brit. Ornith. Club, vol. 66, p. 46.

Neocossyphus rufus arrhenii LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 30 (type locality: Beni in Semliki Valley). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 162 (Lesse); 1926, Arkiv Zool., vol. 19A, no. 1, p. 54. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 447. SCHOUTEDEN, 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 60 (upper Lindi

R.). VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 73 (Kabakuli R.; Luhule R.).

Neocossyphus rufus SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 293.

SPECIMENS: Avakubi, male, September 24; female, April 17. Penge, male, April 24.

ADULTS OF BOTH SEXES: Iris dark brown; bill blackish; feet pale flesh color.

DISTRIBUTION OF THE SPECIES: *Neocossyphus r. rufus* Fischer and Reichenow, with wings 117–130 mm. long, inhabits Zanzibar Island and forests near the East African coast from Uluguru north to the lower Tana River. It is widely separated from *N. r. gabunensis* of the Lower Guinea forest, and the latter is deeper in color, with wings 110–120 mm. in males, 108–112 in females.

Comparison of three examples from the Gaboon with four from the Ituri reveals no sufficient difference for upholding *arrhenii*. The range of *gabunensis* is therefore from the coast of southern Cameroon and the Gaboon eastward to the Ituri forest, Semliki Valley, and Budongo Forest in Uganda. It is never seen outside heavy rain forest and may not be so rare as it seems, because of its excessive shyness.

While traveling on foot from Avakubi to Penge in 1914, we came one morning to a spot along the forest-shaded road where great numbers of driver ants were crossing in several columns. Noting that there were birds at hand, we stopped for some time to watch the proceedings. Besides a half dozen *Alethe castanea woosnami* and *Alethe poliocephala carruthersi* there were two thrushes of the present species, at least one *Neocossyphus poensis praepectoralis*, and one *Bleda syndactyla woosnami*.

It was evident that all these birds were attracted by the ants, and they seemed especially interested in a spot where the irritable insects had spread out widely over the path. The alethes were of course the most conspicuous, flitting back and forth across the road, occasionally darting down right among the ants, or perching in the bushes bordering the way. From time to time one of these large rufous thrushes would fly out from the underbrush, even alighting on the ground amid the ants, but as usual they were on their guard, and it was only after long waiting that I could collect one.

I could not help wondering what the birds were really seeking. Few of the adult driver ants are eaten, nor is it their young, for

usually these are not in evidence, and this circumstance has no relation to the presence or actions of the birds. Perhaps then it is the ants' victims, other insects and the like, being carried along, which they come to steal, though there should be easier ways of finding the same food. In the stomach of the *Neocossyphus* collected near a driver-ant column I found pieces of beetles, a tiny hard snail, two caterpillars, and three heads of driver ants (including one of a large-jawed soldier). The ant heads might bear out the theory. Seizing some coveted morsel, the bird would have found that several ants had buried their jaws in it, but plucked off their bodies before swallowing it.

No song was ever heard, although again in 1926 I collected another male near a driver-ant column between Irumu and Beni. It had swallowed two of the worker ants and two heads of soldiers, in addition to other insects such as beetles. My helper Nekuma said he heard only some low chattering notes, but the East African race is reported to give clicking sounds followed by a single melancholy whistle.

This rufous thrush hides so successfully in the lower undergrowth that only by good luck I found a nest. On April 24, near Penge, a rufous bird flew up and disappeared in a hole in a dead tree, a dozen feet up. As soon as I moved, it was off again. After a long wait I was able to secure the male as it clung near the nest entrance.

The cavity in which the nest was placed was simply an enlarged knot hole, not very deep, and in the bottom of it there was a colony of large black ants. The lower portion of the thrushes' nest was composed of a mass of fine blackish rootlets, as though of some epiphytic plant. Above this was a layer of dry leaves, and the top of the nest was of dry rootlets and flower stems. The two eggs were of a whitish color, heavily spotted with rufous and brown, and measured 27.1 by 18.3 and 27.5 by 18.4 mm. The breeding season cannot be a short one, for the male secured on September 24 also had enlarged sexual organs.

The stomachs of the two individuals killed while not in attendance on a driver-ant column held insect remains, including in one case many black ants and pieces of a small millipede.

Neocossyphus poensis praepectoralis Jackson

Neocossyphus praepectoralis JACKSON, 1906, Bull. Brit. Ornith. Club, vol. 16,

p. 90 (type locality: Kibera, Toro, Uganda). O.-GRANT, 1908, Ibis, p. 300 (north of Kasongo); 1910, Trans. Zool. Soc. London, vol. 19, p. 372 (Mpanga Forest, 5000 ft.).

Neocossyphus granti ALEXANDER, 1908, Bull. Brit. Ornith. Club, vol. 23, p. 15 (type locality: Beritio, near Angu, Uelle District). BANNERMAN, 1920, Rev. Zool. Africaine, vol. 7, p. 290 (Panga; Mawambi). SCHOUTEDEN, 1925, Rev. Zool. Africaine, vol. 13, p. 15 (Kunungu near Bolobo).

Neocossyphus poensis praepectoralis SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 287 (Beni; Beni-Mawambi; Ukaika). BEQUAERT, 1922, Bull. Amer. Mus. Nat. Hist., vol. 45, p. 313 (Avakubi; Bafwabaka). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 416. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 116 (Bondo Mabe). VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 73 (Mangwa; Kianiamakue).

Neocossyphus poensis granti SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 448. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 115.

Neocossyphus CHAPIN, 1931, Nat. Hist., vol. 31, p. 603 (Lukolela).

Neocossyphus poensis SCHOUTEDEN, 1939, Bull. Cercle Zool. Congolais, vol. 16, p. 15 (Ituri).

SPECIMENS: Avakubi, two males, April 16, May 13; female, May 30. Bafwabaka, juvenile male, July 26. Gamangui, three males, February 5, 6, 8; two females, February 5, 10.

ADULTS OF BOTH SEXES: Iris dark brown; bill black; feet very pale buffy flesh color.

DISTRIBUTION OF THE SPECIES: Forests from Sierra Leone to southern Nigeria, Fernando Po, Cameroon, and Loango Coast, eastward to the Ituri, Bugoma and Mpanga forests in Uganda, and the Manyema District. *N. p. poensis* (Strickland) is brownish slate above, and the white area on the inner web of the outermost rectrix is prolonged as an oblique line on the outer web. This nominate race occupies Upper Guinea, Fernando Po, the southern Cameroon, Gaboon, and Loango Coast.

Neocossyphus poensis praepectoralis, of the Upper Congo and western Uganda, is a little browner above, and the white area on the outermost tail quill is restricted to the inner web except at the very tip. The few specimens known from Uganda are large, with wings 106–112 mm., tails 89–95 mm. Those from the eastern Congo, which have sometimes been distinguished as *granti*, are only a little smaller, with wings 98.5–110, tails 80–92 mm. The supposed difference in the white of the tail feathers has not been confirmed, and the difference between the maximum wing lengths

is very slight. Specimens from as far west as Lukolela and Kunungu seem referable to *praepectoralis*.

This rather shy thrush haunts the undergrowth in heavy virgin forest. It is more likely to be encountered by accident than by design and especially near a column of driver ants. But in addition to some squeaky and ticking calls, it utters a high-pitched whistle. By following this note, with the utmost caution, one may sometimes find the author.

Four birds taken in February, the driest part of the year, were plainly not breeding, while three had enlarged gonads in April, May, and June. A young bird in late July still retained a little of its juvenal plumage. There would seem to be a long season of reproduction during the rains. I am not aware that the nest has been found.

Driver ants themselves are sometimes eaten in numbers, for the stomach of the young example was filled with them. One of the adults had eaten brown ants of another kind and their pupae; the stomach of a third bird held small green fruits or seeds and some heads of termites—mostly workers, but two large soldiers as well. Two other individuals had eaten miscellaneous insects.

[*Neocossyphus poensis poensis* (Strickland)]

Cossypha poensis STRICKLAND, 1844, Proc. Zool. Soc. London, p. 100 (type locality: Clarence, Fernando Po).

Neocossyphus poensis poensis BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 330 ("Congo").

This race is probably to be expected in the Mayombe Forest, since it is not at all rare in the Gaboon and is reported from the Portuguese Congo by both Sclater and Bannerman. Thus far I can find no record from Belgian territory.

Stizorhina fraseri fraseri (Strickland)

Muscicapa fraseri STRICKLAND, 1844, Proc. Zool. Soc. London, p. 101 (type locality: Fernando Po).

Cassinia rubicunda REICHENOW, 1887, Jour. Ornith., pp. 300, 305 (Manyanga; Leopoldville).

Cassinia fraseri OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 126.

Stizorhina fraseri REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 466. DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (in part. Kasongo: Kisantu). O.-GRANT, 1908, Ibis, p. 305 (north of Kasongo). SCHOUTEDEN, 1920, Rev. Zool. Africaine, vol. 7, p. 190 (Temvo).

Stizorhina fraseri fraseri SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p.

341 (Luebo; Belenge; Basongo; Kabambaie; Makumbi); 1924, idem, vol. 12, pp. 272, 420 (Kisantu; Tondu; Bikoro); 1925, idem, vol. 13, p. 16 (Kunungu); 1926, idem, vol. 13, p. 200 (Lundu; Kisala; Makaia Ntete). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 416. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 248.

DISTRIBUTION OF THE SPECIES: From Fernando Po and the base of Mt. Cameroon through the Lower Guinea forest to northern Angola, the Kasai District, the Uelle, and Uganda. In Upper Guinea and Southern Nigeria it is replaced by *S. finschi* (Sharpe), with white on outer rectrices.

The two species of this genus have almost invariably been referred to the family Muscicapidae, because of their broad bills and short metatarsi. Their close resemblance in color to the two species of *Neocossyphus* has often been pointed out, and I am convinced that the relationship is very real.

Likenesses in color are so pronounced that *Neocossyphus p. poensis* was redescribed as *Cassinia* (*Stizorhina*) *zenkeri* Reichenow[1] and *Neocossyphus r. rufus* as *Stizorhina grandis* Ogilvie-Grant.[2] The rufous pattern on the bases of the remiges is particularly suggestive of true thrushes. Widening of the bill seems to have taken place in many groups of song birds quite independently, and I conclude that *Stizorhina* should rightly be included in the Turdidae.

Stizorhina f. fraseri, its tail pale rufous on the outer rectrices only, occupies Fernando Po. Similiar birds are found from the Cameroon and the Lower Congo to the gallery forests of northern Angola, the Kasai District, and eastward to the vicinity of Kindu and Kasongo on the Lualaba River. They may be lighter rufous on rump and crissum.

Stizorhina fraseri vulpina has the median rectrices rufous, and the darker areas between them and the light rufous outer quills much less evident. This race occupies the northern and eastern portion of the Upper Congo forest. Wings of adult males usually vary from 95 to 101 mm., those of females 90 to 98 mm. *S. f. intermedia* Clarke[3] of forested areas in Uganda is very similar to *vulpina*, with wings averaging only slightly longer, and varying from 93 to 108 mm. Its validity is still rather doubtful.

[1] 1895, Ornith. Monatsber., vol. 3, p. 113 (Yaunde, Cameroon).

[2] 1910, Bull. Brit. Ornith. Club, vol. 27, p. 30 (Gazi, near Mombasa).

[3] 1913, Bull. Brit. Ornith. Club, vol. 31, p. 107 (Entebbe, Uganda).

The nominate race *fraseri*, with middle of tail darker, is found in the Mayombe and other parts of the Lower Congo, on the middle Congo River near Lukolela, and along the southern margin of the forest to the vicinity of Kindu. We have specimens from Luluabourg. In the eastern Manyema *vulpina* seems to replace it.

At Lukolela *fraseri* was a common bird of the forest, and one or two might frequently be noted in a mixed bird party. It perches fairly high in the trees, and I have never noticed that this bird was attracted by foraging driver ants, as has sometimes been reported of *Stizorhina* in West Africa. Voice and behavior are exactly as in *vulpina*. At Eala in March, 1931, I saw one fly from a dead tree in a manner suggestive of its having a nest in a hollow. This might be another point of resemblance to *Neocossyphus*.

Examination of eight stomachs at Lukolela revealed insects in all cases, one caterpillar, and a single small round millipede. Some of the insects were beetles, and in four stomachs there were one or more large black ants.

Stizorhina fraseri vulpina Reichenow

Stizorhina vulpina REICHENOW, 1902, Jour. Ornith., p. 125 (type locality: Bundeko, Semliki Valley); 1903, Die Vögel Afrikas, vol. 2, p. 467 (Bundeko); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 303 (west Ruwenzori, 2500 m.; Kirk Falls on lower Semliki R.; Lenda R.). O.-GRANT, 1908, Ibis, p. 305 (Ponthierville); 1910, Trans. Zool. Soc. London, vol. 19, p. 393 (10 miles north of Beni; Irumu; Mawambi). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 246 (Moera; Beni–Mawambi; Ukaika). LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 23. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 257 (Masidongo; Lesse; Zambo; Mboka; Bolovet; Marissawa; Makojoba; Kokoba).

Cassinia frazeri HARTERT, 1900, Novitates Zool., vol. 7, p. 36 (Olinga in Ituri forest).

Stizorhina fraseri DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (in part. Banalia).

Stizorhina fraseri vulpina GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 204 (Kartushi; Kampi-na-Mambuti; Simbo). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 416. BERLIOZ, 1935, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 7, p. 161 (Mbwahi). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 112 (Poko; Buta; Kotili; Bondo Mabe; Medje; Rungu; Nava R.); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 117 (forest east of Rutshuru Plain). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 569 (Saidi). GRANT AND M.-PRAED, 1946, Bull. Brit. Ornith. Club, vol. 66, p. 77. VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 71 (Lusilube R.–Biangolo R.; Kakunda; Bwanandeke; Kabakuli R.; Butahu R.; Mutsora).

SPECIMENS: Risimu, female, September 8. Avakubi, two males, February 17, March 5; female, March 5. Avakubi-Ngayu, immature male, July 23. Ngayu, two males, July 27, December 16. Gamangui, male, January 30; three females, January 30, February 6, June 18. Medje, two males, January 18, April 6; female, March 28; juvenile male, October 1. Rungu, female, June 27. Faradje-Aba, male, October 4; two females, November 27, 30.

ADULTS OF BOTH SEXES: Iris dark brown; bill brownish black; feet grayish pink to brownish.

DISTRIBUTION: Northeastern and eastern parts of the Upper Congo forest, southward at least to Ponthierville and to the eastern Manyema forest, where Rockefeller and Murphy secured two specimens of *vulpina* in the region of Itula. In the Uelle it extends out in the heavier gallery forests almost to Aba, and on the east I have noted it in forest on the eastern side of the Rutshuru Valley. If the race *intermedia* is not valid, then *vulpina* reaches Mbarara and Mabira in Uganda.

In the Ituri and Semliki forests, and at Angumu, I found this one of the common birds, but only in the shade of heavy woods. In behavior it is a little more like a flycatcher than a thrush and perches usually rather high in the trees. Only once did I see one on the ground, and shot it to make sure it was not a *Neocossyphus*.

One of the bird calls frequently heard, an ascending series of three slowly whistled syllables (occasionally four) is produced by this *Stizorhina*. I wrote it "wheee, wheee, wheeee...," and noted that it is shrill rather than musical. The bird has another different note, a whistled "trē-trē-trē-trē-trē...," protracted and in one key.

Breeding takes place in the Ituri forest at least from January to October and perhaps through the entire year. A breeding male was taken in the Uelle in October, but there nesting is unlikely in the dry season. A young nestling with tail only 13 mm. long, secured from natives at Medje, October 1, has exceedingly soft juvenal plumage, almost wholly dark sooty brown, little lighter on the belly, with rufous edgings on the upper surface of the wing, and tips of tail feathers pale rufous. Remnants of natal down are brown. It is to be noted that the juvenal plumage is unspotted, and so far I have seen no trace of spotting on the young of *Neocossyphus*, save for the tips of upper wing-coverts.

No fruit is eaten by *Stizorhina f. vulpina.* In the nine stomachs I examined there were always insects, usually beetles, once many black termites, once a number of large winged ants, and a small green cicada. One small snail was also found.

KEY TO THE CONGO SPECIES OF *Monticola*

Outermost primary longer than primary-coverts; back bluish gray or brown, barred and mottled with blackish, the dark markings extending to the upper wing-coverts ..... *M. angolensis*
Outermost primary shorter than primary-coverts; feathers of back (while in Africa) all tipped with pale buff ..... *M. saxatilis*

Monticola angolensis Sousa

Monticola angolensis J. A. DE SOUSA, 1888, Jor. Sci. Nat. Lisboa, vol. 12, pp. 225, 233 (type locality: Caconda, Benguella, Angola; also from Kwango R.). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 698. DE RIEMAECKER, 1927, Rev. Zool. Africaine, vol. 14, p. 280 (Elisabethville). SCHOUTEDEN, 1929, Bull. Cercle Zool. Congolais, vol. 5, p. 77 (Kivu District); 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 315 (Kinunu, 1460 m.); 1943, idem, vol. 37, p. 271. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 450. VERHEYEN, 1940, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 16, no. 2, p. 5 (Kanzenze). A. W. VINCENT, 1947, Ibis, p. 190.

Monticola brevipes DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, no. 3, p. 148; 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (Mpala). HARTLAUB, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, no. 3, pp. 145, 146 (L. Tanganyika).

Petrophila angolensis NEAVE, 1910, Ibis, p. 139 (Kambove, 4500 ft.; Lufupa R.).

DISTRIBUTION: From Duque de Bragança, Pungo Andongo, and the Benguella highland eastward to the southeastern Congo, Ruanda, central Tanganyika Territory, the Quelimane district of Mozambique, and to the Melsetter district in Southern Rhodesia.

Within our limits it has been taken in the Upper Katanga, in Marungu, at Mpala on Lake Tanganyika, and at Kinunu on the eastern shore of Lake Kivu. In Marungu Rockefeller and Murphy secured specimens at Kampia, 4525 feet, and Lubenga, 5650 feet. They do not differ significantly from a series of skins from the highland of Angola.

While not restricted to montane levels, this thrush is characteristic of plateaus and sometimes ascends to 5900 feet. It is not particularly fond of rocks, but lives in savanna woods with trees like *Brachystegia,* usually in hilly country where there often are

boulders. Found alone or in small groups, they perch in the large trees and feed on the ground.

The call note is a double whistle, the song more varied, but still rather weak, heard mostly in the breeding season, from September on into the rains. The nest is placed in a hollow in a tree, from 4 to 20 feet above the ground, and built of a few small twigs, tendrils, and grass. The eggs are three to four, turquoise blue, with sometimes a few brown spots, and measure about 21–24 by 16–18.5 mm.

Monticola saxatilis (Linnaeus)

Turdus saxatilis LINNAEUS, 1766, Systema naturae, ed. 12, vol. 1, p. 294 (type locality: Switzerland).

Monticola saxatilis SCLATER AND M.-PRAED, 1918, Ibis, p. 679 (Tembura; Meridi). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 448. BOWEN, 1931, Catalogue of Sudan birds, vol. 2, p. 51 (Kajo-Kaji). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 116 (Uelle District). GROTE, 1937, Ornith. Monatsber., pp. 34–41, map. BECQUET, 1942, Bull. Soc. Bot. Zool. Congolaises, vol. 5, p. 22 (Nioka).

SPECIMENS: Niangara, male, March 11. Aba, three males, December 12, 14; female, December 14.

ADULT MALE: Iris dark brown, bill mostly blackish but dull yellowish gray beneath base; feet dark brown.

DISTRIBUTION: Breeding largely in the mountains from Morocco, southern and central Europe, eastward through Asia to Lake Baikal, Mongolia, and northern China, the rock thrush migrates in autumn to southern Arabia and tropical Africa. In western Africa and the Congo the northern edge of the equatorial forest marks the limit of its wanderings, but in East Africa it continues southward to Tanganyika Territory, where it reaches Morogoro and the Ubena highland.

Being so attached to rocks in the north, this thrush does not surprise us by showing a similar preference during its stay in Africa. It was near the hills about Aba that we saw them the most, about eight examples in 12 days, usually perching quietly in small trees, and rather tame. But at Niangara in March, 1913, I observed one close to the station, and three days later obtained a specimen near the same place. These were probably migrants. J. M. Vrydagh tells me that he found two individuals on February 13 on an escarpment just west of Mahagi Port. In Kenya Colony this rock thrush begins to arrive from mid-September into

October, and leaves again from the second half of March to mid-April, according to Meinertzhagen and Van Someren.

The four stomachs we examined held insect remains in every case (all ants in one stomach), as well as pieces of a rather large millipede, and once some fruit.

KEY TO THE SPECIES OF *Geokichla* EXPECTED IN THE CONGO

1. Breast and flanks conspicuously spotted with black on a whitish ground.... ..... *G. litsipsirupa*
   Underparts unspotted when adult, a few dark streaks at most on chest.....2
2. Cheeks with two fairly evident vertical blackish bands, one extending down from the lower eyelid, the other near tips of ear-coverts.....3
   Cheeks without such well-marked bands.....4
3. Smaller, culmen to base only 19–22 mm., metatarsus 28–31 mm.; vertical bands on cheeks blacker; chest rufous only when young..... *G. princei*
   Larger, culmen to base 23–25 mm., metatarsus 34–36 mm.; dark bars on cheeks somewhat tinged with olive; lores, throat, and upper breast always bright rufous..... *G. gurneyi*
4. Eye ring (composed of small feathers on lids) entirely white; malar region, throat, and forehead rufous..... *G. piaggiae*
   Eye ring not entirely white, but always with some blackish feathers, at least above and below eye.....5
5. Crown, cheeks, and throat rufous, unmarked; lores whitish; wing 95–98 mm. long, metatarsus 27–29 mm..... *G. oberlaenderi*
   Crown dusky olive with a faint rufous wash; lower loral region and malar area rather blackish, fading to olive brown on ear-coverts; wing near 114 mm., metatarsus around 35 mm. long..... *G. crossleyi*

Geokichla litsipsirupa stierlingi Reichenow

Geocichla litsitsirupa stierlingi REICHENOW, 1900, Ornith. Monatsber., p. 5 (type locality: Iringa, southern Tanganyika Territory); 1923, Mitt. Zool. Staatsinst. Zool. Mus. Hamburg, vol. 40, p. 65 (Lupungu).

Geocichla litsipsirupa stierlingi NEAVE, 1910, Ibis, p. 138 (Dikulwe R., 3500 ft.; upper Lualaba R.). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 293 (Dogodo R.); 1929, Bull. Cercle Zool. Congolais, vol. 5, p. 103 (Elisabethville; Kabalo; Tembwe); 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 286. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 446. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 130.

Geokichla litsirupa stierlingi VERHEYEN, 1940, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 16, no. 2, p. 5 (Kanzenze).

DISTRIBUTION OF THE SPECIES: From Natal, the northern Karroo, and Damaraland north to Malanje in Angola, the southeastern Congo, Lake Tanganyika, and southern highlands of Tanganyika Territory. Reappears again in the highlands of Abyssinia.

Geokichla litsipsirupa litsipsirupa (Smith) is supposedly restricted to South Africa, and replaced from Nyasaland northward to Lake Tanganyika by *G. l. stierlingi*, with wings slightly shorter (120–130 mm.) and culmen to base measuring only 20–24 mm. Angola birds are somewhat intermediate in dimensions and have therefore been separated as *G. l. kösteri* (Neumann).[1] *Geokichla litsipsirupa simensis* Rüppell of Abyssinia is much more washed with buff beneath and has the crown and back more brownish gray.

In the Congo the race *stierlingi* occupies the whole Katanga and extends north to the country west of Baraka, where Grauer obtained four specimens, to Kabalo on the Lualaba, and to Ka-

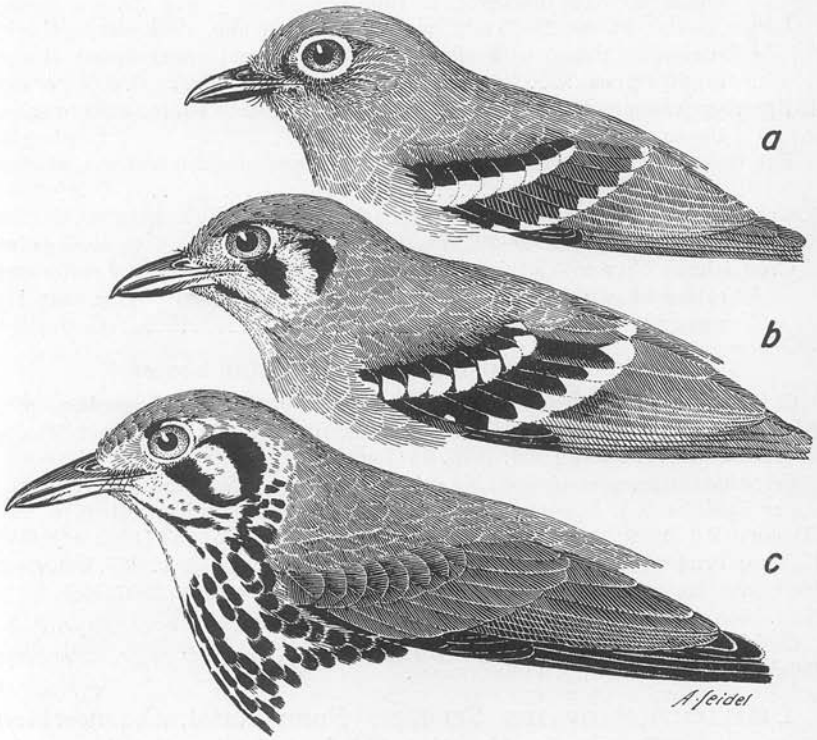

FIG. 24. Head patterns in three species of *Geokichla*. A. *G. piaggiae*. B *G. princei*. C. *G. litsipsirupa*.

[1] 1929, Ornith. Monatsber., p. 177 (Chipepe, Bailundo).

binda in the Lomami District. It ranges from the west shore of Tanganyika up to Lubenga, 5650 feet, and Sambwe, 6100 feet, in Marungu.

The ground-scraper thrush, as it is called in South Africa, does not require dense woods and spends much of its time on the ground scratching for food among the fallen leaves. Its call note sounds like "pit, it, it, it, it," and the melodious song, flute-like though not very loud, is given from a tree top.

Breeding begins in September or October, the nest being placed in a fork or on a branch about 10 to 20 feet above the ground. In Nyasaland Paget-Wilkes noted that the outside of nests was apt to be covered with lichen. The South African race is known to lay two or three eggs, white to pale blue, with small chocolate or red-brown markings and violet-gray spots, measuring around 28 by 20 mm.

The food of this thrush consists largely of insects, but in Marungu Rockefeller and Murphy noted that one bird had its stomach filled with inch-long white slugs.

Geokichla princei batesi Sharpe

Geocichla batesi SHARPE, 1905, Bull. Brit. Ornith. Club, vol. 16, p. 36 (type locality: Efulen, Cameroon).

Geocichla princei graueri SASSI, 1914, Anz. K. Akad. Wiss. Wien, vol. 51, p. 309 (type locality: Moera, near Semliki Valley); 1915, Jour. Ornith., p. 113; 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 279, pl. 8.

Geocichla princei batesi CHAPIN, 1927, Bull. Amer. Mus. Nat. Hist., vol. 53, p. 478. BOUET, 1942, Ois. Rev. Française Ornith., new ser., vol. 12, p. 43 (Yokadouma in Cameroon).

Geokichla cameronensis graueri SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 445.

SPECIMENS: Avakubi, male, May 18; female, June 2. Babeyru, immature male, July 29. Medje, juvenile female, October 3.

ADULTS: Iris dark brown, bill black, but base of mandible whitish and corners of mouth yellowish white in male, whereas lower mandible was entirely dusky in female, and corners of mouth grayish; feet very pale flesh color. The male had a naked spot of flesh-colored skin a little behind the eye.

DISTRIBUTION OF THE SPECIES: From Liberia, and perhaps Sierra Leone, through lowland rain forests to the southern Cameroon, the northeastern Congo forest, and the Bugoma

Forest in Uganda. *G. p. princei* (Sharpe) is the Upper Guinea race, known from very few specimens, while *G. p. batesi* of Lower Guinea is believed to be a little more olive on the back and less rufous on the rump. The type of *graueri* was not quite adult, and immature birds of this species are always much more ruddy on chest and flanks than adults. I can find no reason to separate Ituri birds from those of the Cameroon.

My female specimen from Avakubi, though ready to lay, showed by the skull roof that it was just attaining maturity, and its plumage was still much more rufous than that of the fully adult male. Adult females from the Cameroon are not very different from males. The measurements of the few available adults of *G. p. batesi* are: wing 101–110 mm., tail 66–75, culmen to base 19–22, metatarsus 28–31.

I have long been puzzled by the very similar *Geokichla camaronensis* Sharpe, known by only four specimens from near Efulen in the Cameroon. The type was a male with remnants of juvenal plumage on the head, and only one example, a female, seems fully adult. Its wing measures 98 mm., tail 64, metatarsus 26 mm. Immature males have the wing no longer than 97 mm., metatarsi not exceeding 28 mm. Thus the measurements are a little smaller than those of *G. princei*, the coloration is ruddier, and the white spots on middle and greater wing-coverts are noticeably larger. Even though I am now willing to recognize *camaronensis* as a species, there is no reason to believe it reaches the Belgian Congo.

On the other hand, Bates's ground thrush may have a far wider range in the rain forests of the Congo than we now suspect, and there is one immature specimen in the Rothschild Collection taken in the Bugoma Forest of Uganda by Kalman Kittenberger on July 30, 1914.

This is so wary a bird that I never saw one at liberty. Our first example, a nestling, was brought in by a native; and Nekuma, who shot three specimens, found them feeding on the ground in dense forest, also perching in the lower undergrowth. Examination of two stomachs revealed insects, including many slender, maggot-like larvae, and also one small snail.

There is proof of their breeding in the Ituri in June and early October, and a likelihood that nesting may be carried on throughout the greater part of the year.

[*Geokichla gurneyi otomitra* Reichenow]

Geocichla gurneyi otomitra REICHENOW, 1904, Ornith. Monatsber., p. 95 (type locality: Bulongwa, Kondeland, north of Lake Nyasa).

Gurney's orange ground-thrush ranges from Pondoland and Natal north to Usambara, Kilimanjaro, and Mt. Kenya. In tropical latitudes it is restricted to mountain forests, and it has been divided into five geographic races. The nominate form extends from South Africa to Nyasaland, but is replaced on the highlands near the north end of Lake Nyasa by the thicker-billed *otomitra*, with more evident dark areas on the cheeks.

It is the subspecies *otomitra* that comes nearest to the Congo border, on the Nyika Plateau and Mafinga Mountains of Nyasaland. The wings of *otomitra* measure 105–112 mm., its tail measures 74–83 mm. The pattern about the head is quite different from that of *G. piaggiae*. Though not yet recorded from the Congo, *G. gurneyi* may prove to extend to some wooded spot in the highlands of the Katanga.

Geokichla oberlaenderi Sassi

Geocichla gurneyi oberlaenderi SASSI, 1914, Anz. K. Akad. Wiss. Wien, p. 310 (type locality: between Beni and Mawambi, northeastern Belgian Congo).

Geocichla gurneyi oberländeri SASSI, 1915, Jour. Ornith., p. 115; 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 280, pl. 8.

Geokichla gurneyi oberlaenderi SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 444. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 115 (Bondo Mabe).

Geokichla piaggiae oberländeri M.-PRAED AND GRANT, 1937, Ibis, p. 877 (Ituri forest).

DISTRIBUTION: From the neighborhood of the Semliki Valley to the northern edge of the Congo forest near Arebi. Although described as a race of *G. gurneyi*, this ground thrush must be regarded as specifically distinct. It inhabits lowland forest, it lacks distinct dusky bars on the face, and no race of *gurneyi* is known in East Africa from west of the Great Rift Valley.

The immature bird secured by Grauer has traces of dark markings on the cheeks, but these are lost in the adult, which has the whole side of head rufous. The feathering on eyelids is black above and below, whitish in front and behind; the lores are also whitish. At Bondo Mabe near Arebi Schouteden secured an adult, sexed as a male, which I have compared with Sassi's type.

The measurements of this rare bird are: wing 95.5–98 mm., tail 59–62, culmen to base 21–22, metatarsus 27.5–29.

Nothing is yet recorded of the behavior of this thrush; it is certainly a wary inhabitant of heavy lowland forest.

Geokichla crossleyi pilettei Schouteden

Geocichla gurneyi pilettei SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 294 (type locality: Lesse, Semliki Valley).

Geokichla princei pilettei SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 445.

Geokichla piaggiae SCHOUTEDEN, 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 7 (Mt. Wago).

Geokichla piaggiae pilettei SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 286.

Geocichla princei pilettei VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 73 (west base of Ruwenzori between Lusilube and Biangolo rivers).

DISTRIBUTION OF THE SPECIES: Forest on Mt. Cameroon and in the Semliki Valley of the eastern Congo, perhaps also on mountains west of Lake Albert.

I am treating *pilettei* as a race of *G. crossleyi* because of the close agreement in facial pattern, with lores and cheeks blackish, and feathering of eyelids black except for a white quadrant on the upper posterior portion. But I do not regard these two forms as conspecific with *G. gurneyi*.

Geokichla crossleyi crossleyi is a very rare bird and has been collected only on Mt. Cameroon and Mt. Kupé. Of *G. c. pilettei* only two adults are known, and there are two juveniles which may also represent it. The subspecific characters of *pilettei* seem to consist in its slightly larger size, more whitish chin, and perhaps a deeper olive brown color on crown and back.

The type of *pilettei* is evidently an adult male, with wing 114 mm., tail 68, culmen to base 22, metatarsus 35.5. A second adult male has recently been secured by J. de Wilde at the western base of Ruwenzori, and Verheyen writes me that it has the wing 113 mm., tail 66, metatarsus 37. A juvenile example taken by Borgerhoff near Beni has the tail still very short and remiges not fully grown. The long metatarsi, 35.5 mm., are responsible for its inclusion here. Another young bird from Mt. Wago, west of Lake Albert, is also believed by Schouteden and Verheyen to be of this species.

I have weighed the possibility that *oberlaenderi* might be the female, and *pilettei* the male, of a single species. But the differences in color are greater than usual among African representatives of the genus, and the disparity in size is very marked.

Even less is known of the behavior and the range of this thrush than of *G. princei*. On just one occasion (February 10, 1927) in fine primary forest near the village of Masimango in the Semliki Valley, I followed a song that recalled vividly the silvery voice of *G. gurneyi chuka*, heard previously on Mt. Kenya. After considerable trouble I located a *Geokichla* with rufous breast and whitish abdomen, high in a tree, but was unable to collect it. The song was varied, composed of short strophes, with a wild ring that reminded me also of the American hylocichlas. It now seems to me fairly certain that this bird was *Geokichla pilettei*.

Geokichla piaggiae piaggiae (Bouvier)

Turdus piaggiae BOUVIER, 1877, Bull. Soc. Zool. France, vol. 2, p. 456 (type locality: "Uganda (royaume de M'Tésa)," but almost certainly L. Tana, Abyssinia).

Geocichla piaggiae O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 368, pl. 19, fig. 3 (Mubuku Valley, 6000–9000 ft.).

Geocichla gurneyi tanganjicae SASSI, 1914, Anz. K. Akad. Wiss. Wien, vol. 51, p. 311 (type locality: forest northwest of Tanganyika, 2000 m.); 1915, Jour. Ornith., p. 116; 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 281.

Geokichla gurneyi piaggiae SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 444. GRANVIK, 1934, Rev. Zool. Bot. Africaines, vol. 25, pp. 77, 79. SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 112 (Burambi, 2325 m., near Mt. Muhavura).

Geokichla piaggiae piaggiae VAN SOMEREN, 1932, Novitates Zool., vol. 37, p. 379. M.-PRAED AND GRANT, 1937, Ibis, p. 876. JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 654.

Geokichla piaggiae tanganjicae VERHEYEN, 1947, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 23, no. 9, p. 4 (Mt. Kabobo, north of Albertville).

DISTRIBUTION OF THE SPECIES: Forested highlands from Abyssinia and the southeastern Sudan to Kenya Colony, Kilimanjaro, Loliondo in Tanganyika Territory, Ruwenzori, and the eastern Congo south almost to Albertville on the west side of Lake Tanganyika.

Geokichla piaggiae piaggiae has the crown decidedly rufous, and most of the upperparts washed with reddish. It extends from Abyssinia to Mt. Elgon, the Mau Plateau, and the mountains of the eastern Congo. *G. p. kilimensis* Neumann of the Aberdares,

Mt. Kenya, and Kilimanjaro is deeper in color on the chest, less rufous on hind crown and back. *G. p. rowei* Grant and Mackworth-Praed of the Loliondo and Magaidu forests in Tanganyika Territory is more olivaceous above than the nominate race and paler orange rufous from throat to flanks. *G. p. hadii* Macdonald[1] of the mountains in southeastern Sudan and *G. p. williamsi* Macdonald[2] from Mt. Muhavura would seem to require confirmation.

Until rather recently the distinctness of *G. piaggiae* and *G. gurneyi* as species was not generally appreciated. In 1926 Frank P. Mathews and I collected both of them in the mountain forest on Kenya and then discussed the matter with Van Someren in Nairobi. Five years later he described the Kenya race of *gurneyi* as new. *G. gurneyi* (Hartlaub), with five races, ranges from eastern Cape Province to the mountains about Lake Nyasa and northward through East Africa to Mt. Kenya, but it is not yet known from the Congo.

Geokichla piaggiae can be recognized at once, when adult, by its complete white eye ring. Even in juvenal plumage it lacks any distinct blackish bars on cheeks and ear-coverts. Adults from the Congo have wings 103–111 mm., tail 80–90, culmen to base 22–24, and metatarsus 34–36. In the eastern Congo it has been found from Ruwenzori and the Kivu Volcanoes to the mountains west of the Ruzizi Valley and those north of Albertville.

Nowhere is it a common bird, nor can I find any reference to its singing. Seen singly or in pairs, at levels between 6000 and 9000 feet, it keeps within the mountain forest, often where this is mixed with bamboos, and feeds on the ground. Two stomach examinations showed that it eats insects and caterpillars, with sometimes a millipede or a small snail, as well as fruit.

A nest, found by Woosnam on east Ruwenzori at 8600 feet, March 10, was placed in a fork of a small tree, 5 feet up, and resembled that of a European blackbird. The two eggs were pale greenish blue, marked all over with small blotches and spots of chestnut and purplish gray, measuring about 27.2 by 18.5 mm.

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[1] 1940, Bull. Brit. Ornith. Club, vol. 60, p. 98 (Emogadung, Dongotona Mts., southeastern Sudan).

[2] 1948, Bull. Brit. Ornith. Club, vol. 69, p. 16 (Mt. Muhavura, Kigezi District at 9500 feet).

KEY TO THE SPECIES OF *Turdus* IN THE CONGO

1. Crown and back olive gray; streaking at sides of throat very black and conspicuous, more so than in its middle; rufous color always limited to flanks and under wing-coverts; in life bill more or less orange..... ..... *T. libonyanus*

   Crown and back darker, gray-brown or olive brown; streaking of throat spread more over its whole width; rufous of underparts may stop at flanks or may spread entirely across lower breast.....2

2. Under tail-coverts sooty gray, with white shaft streaks; general coloration deep, rufous extends all across lower breast; bill in life orange or even reddish..... *T. abyssinicus*

   Under tail-coverts whitish, sometimes edged with gray or washed with cinnamon; depth of coloration varying with race, middle of underparts sometimes gray and white, sometimes light rufous; bill in life merely yellow ..... *T. olivaceus*

Turdus libonyanus niassae Rensch

Turdus libonyanus niassae RENSCH, 1923, Jour. Ornith., p. 100 (type locality: Zomba, Nyasaland). SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 286. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 439.

Turdus libonyanus DE SOUSA, 1886, Jor. Sci. Nat. Lisboa, vol. 11, p. 79 (Tenque); 1886, *in* Capello and Ivens, De Angola a Contra-Costa, vol. 1, p. 445. SCHALOW, 1886, Jour. Ornith., pp. 412, 413, 421 (Mpala; eastern Marungu; "Lualaba" = Luvua R.; Lugoma R.; Lufua R.); 1887, idem, p. 243.

Turdus bocagei MATSCHIE, 1887, Jour. Ornith., p. 155 (Lufuku R.).

Turdus pelios bocagei REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 692 (in part).

Turdus libonyanus verreauxi REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 693 (in part. Ntenkwe).

Merula tropicalis NEAVE, 1910, Ibis, p. 137 (Kambove, 4500 ft.; Dikulwe R.; Kaluli R., 3000 ft.; upper Lufira R.).

Turdus libonyanus tropicalis MOURITZ, 1914, Ibis, p. 27 (Muniengashi R.). DE RIEMAECKER, 1927, Rev. Zool. Africaine, vol. 14, p. 279 (Elisabethville). GRANT AND M.-PRAED, 1940, Bull. Brit. Ornith. Club, vol. 61, p. 6. A. W. VINCENT, 1947, Ibis, p. 186.

Turdus libonianus tropicalis BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 377.

Turdus libonyanus cinerascens LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 78 (Katofio). VERHEYEN, 1940, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 16, no. 2, p. 5 (Kanzenze); 1947, idem, vol. 23, no. 10, p. 4 (Musosa). WHITE, 1946, Ibis, p. 87 (northern Mwinilunga District).

DISTRIBUTION OF THE SPECIES: From Natal, the Transvaal, Bechuanaland, and southern Angola north to Tanganyika Territory, the southeastern Congo, and northern Angola.

Turdus libonyanus libonyanus (Smith), from Natal to Southern

Rhodesia, is a large race with wings 110–125 mm. Along the eastern coast, from the Limpopo to southern Tanganyika Territory, *T. l. tropicalis* Peters is smaller, wings not exceeding 117 mm., and has a buffy wash on upperparts and chest. *T. l. costae* Rensch occupies the coastal area north to Tanga. *Turdus l. niassae* ranges from southern Nyasaland to the interior of Tanganyika Territory, the southeastern Congo, and Northern Rhodesia. It is only slightly grayer than *tropicalis* and has wings 110–120 mm. *T. l. chobiensis* (Roberts) of Ngamiland and Barotseland is said to be still grayer, wings 105–114 mm.; and *T. l. verreauxi* Bocage of Angola has very little rufous on the flanks.

Over much of their range the grayish thrushes of this species live almost side by side with representatives of another species that is slightly larger, deeper in color, and often more rufous on the lower breast. *Turdus libonyanus* is at home in the more open situations, including savanna woods, while *T. olivaceus* prefers heavier evergreen woods.

Turdus libonyanus niassae is rather common and widely distributed all over the Katanga, and specimens were taken by Rockefeller and Murphy at Lubenga, 5650 feet, in Marungu. But it seems scarcely to extend northward beyond Mpala on the west shore of Lake Tanganyika, Kiambi on the Luvua, or Kanzenze in the western Katanga. Neave noted that it was particularly fond of thickets on the large termite mounds in savanna woods, and Sterling Rockefeller said it frequented wooded rocky hillsides in Marungu. But it does not shun the vicinity of towns, if there is suitable vegetation.

Feeding is done largely on the ground. The call note is a single whistle, and the song is brief and leisurely but with some rich notes. Nesting commences toward September and continues until the end of December, the nest being placed in a thick fork of a tree, about 12 feet up. Its base contains mud, and the upper part is of twigs, grasses, and rootlets. Three eggs are laid, pale greenish blue, with yellowish brown to red-brown spotting, averaging 26.3 by 19.6 mm. in size.

[*Turdus libonyanus verreauxi* Bocage]

Turdus verreauxi BOCAGE, 1869, Jor. Sci. Nat. Lisboa, vol. 3, p. 341 (type locality: Caconda, Angola).

? *Turdus libonyanus verreauxi* SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 338 (Tshisika).

This very gray thrush occupies a large part of Angola, but not Damaraland, and is known to extend north to Duque da Bragança. It would not be at all surprising if it reached the Belgian Congo in the vicinity of the Kwango River or the southern border of the Kasai District. I regret that I have not examined the specimen from Tshisika which Schouteden referred to *verreauxi*.

Turdus olivaceus stormsi Hartlaub

Turdus stormsi HARTLAUB, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, p. 143, pl. 3 (type locality: Mpala on west shore of L. Tanganyika). DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, p. 148; 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31. SEEBOHM AND SHARPE, 1902, Monograph of the Turdidae, vol. 1, p. 334, pl. 77. REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 694; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 368. NEAVE, 1910, Ibis, p. 138 (Bunkeya R., 3400 ft.). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 442 (Katanga). SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 286 (Elisabethville); 1942, Bull. Cercle Zool. Congolais, vol. 17, p. 15 (region of Dilolo). GRANT AND M.-PRAED, 1946, Bull. Brit. Ornith. Club, vol. 66, p. 78. WHITE, 1946, Ibis, pp. 87, 509 (Luakela R. in northern Mwinilunga District). A. W. VINCENT, 1947, Ibis, p. 189.

? *Turdus olivaceus* subsp. RENSCH, 1923, Jour. Ornith., pp. 97, 98 (west shore of Tanganyika; "Lualaba"; Lufua R.).

Turdus olivaceus stormsi RENSCH, 1923, Jour. Ornith., p. 102.

DISTRIBUTION OF THE SPECIES: From Cape Province over the greater part of the continent north to Eritrea and the Gambia, but wanting in the driest parts of southwestern and eastern Africa and on the higher mountains in East Africa. Despite the great difference in color between the geographical extremes, the gaps are completely filled by intermediate races. The total number of subspecies is about 15.

The four races living south of the Zambesi are mostly brownish above, with considerable rufous on flanks or lower breast. This style of coloration is shared by *T. o. williami* White[1] and *T. o. stormsi*. The latter race occupies the Katanga and the northern edge of Northern Rhodesia and extends to the southern and western shores of Lake Tanganyika. The underparts become paler rufous

[1] 1949, Bull. Brit. Ornith. Club, vol. 69, p. 57 (Kansoku Forest, Mwinilunga, Northern Rhodesia).

in *T. o. bocagei* of Angola and the southern Kasai, and likewise in *T. o. graueri* of Ruanda-Urundi and northwestern Tanganyika Territory.

Further steps in reduction of rufous on the underparts are marked by *T. o. centralis* and *T. o. saturatus*, the former occupying Uganda and the northeastern Congo, the latter the Gaboon and Cameroon. Paler still is *T. o. pelios* Bonaparte of Abyssinia and the eastern Sudan, while *T. o. chiguancoides* Seebohm, from Liberia to the Gambia, has very little cinnamon on the flanks.

On Mt. Cameroon and Fernando Po there are very similar birds at montane levels, often regarded as constituting a distinct species, *T. nigrilorum* Reichenow. In my opinion they are also conspecific with *T. olivaceus*.

It was once supposed that the grayish thrushes of the Sudan and Congo were races of *T. libonyanus*, and many students of this group therefore concluded that *stormsi* must be a valid species, of which *graueri* might be a paler race. Now it has become clear that *graueri* and *stormsi* are merely intermediates between the grayer northern forms and the South African races of *T. olivaceus*. On the other hand, we must now separate the montane thrushes of northeastern and eastern Africa from *T. olivaceus* and call them *T. abyssinicus*.

The type of *stormsi* is preserved in Brussels and is plainly a young bird that had already molted its immature body plumage. No form of *T. abyssinicus* would be expected near Mpala, and ruddy-breasted representatives of the species *olivaceus* are now well known from the Katanga and Northern Rhodesia. Neave obtained one on the Bunkeya River, Schouteden another near Elisabethville. Gaston de Witte's specimens from Lukonzolwa, Kansenia, and Dilolo are in the Congo Museum.

C. M. N. White tells me that he found *stormsi* near Mwinilunga and Balovale only in evergreen forest. Three of White's specimens from the Mwinilunga District have wings 119, 121, and 129 mm. Neave, for the Katanga, also stated that he found *stormsi* not uncommon but only in dense forest near water. It had an alarm note like that of the European blackbird and was extremely shy.

A nest found by Alfred W. Vincent near Elisabethville on November 12 was placed at a height of 14 feet on some stout lianas in a dense evergreen gallery forest. It was a neat cup of

moss lined with tendrils and contained three eggs. Their ground color was very pale bluish green, with close and even freckling of pinkish brown and some underlying pale lilac; dimensions were 26.5–28.4 by 20–21 mm.

Turdus olivaceus bocagei (Cabanis)

Peliocichla bocagei CABANIS, 1882, Jour. Ornith., p. 320 (type locality: Angola).
Turdus pelios bocagei REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 692 (in part. Chinchoxo).
Turdus bocagei RENSCH, 1923, Jour. Ornith., pp. 98, 104, map.

DISTRIBUTION: From the lower Cuanza and Cuvo valleys in northern Angola to the southern Kasai District, probably also to the southern Kwango District and possibly even to the mouth of the Shiloango River.

Lighter beneath than *saturatus*, and with much more rufous on the flanks, *bocagei* tends to bridge the gap between that form and the still more ruddy-breasted races, *graueri* and *stormsi*. In the Rothschild Collection there are five adults and two young from Canhoca, Angola, and other adult examples from Pungo Andongo and Duque de Bragança. At the last two localities *T. libonyanus verreauxi* has also been collected.

The wing length of *bocagei* in that region is 112–120 mm., and the specimens of *verreauxi* are readily separated by their grayer underparts, much heavier black streaking at the sides of the throat, and wings measuring only 108–116 mm. It would seem that where the two species occupy the same area, the grayer one is characteristic of more open wooded savanna, the ruddier representative of *Turdus olivaceus* keeping to the heavily wooded spots.

Little has been published concerning *bocagei* in Angola. Rudyerd Boulton assures me that he secured a rufous example of this thrush at Ngara, northeast of Novo Redondo, in March, 1931, and at the same place a grayer bird which seemed to be *T. l. verreauxi*.

At Luluabourg in the Kasai, Father Callewaert collected seven adult thrushes, with wings 110–120 mm., more or less intermediate in color between *stormsi* and *bocagei*. In size they agree closely with *bocagei* and may best be referred to that race. Some of them, it must be admitted, are rather like *graueri* in coloration,

and we can see why Reichenow in 1911 believed the latter race to be synonymous with *bocagei*.

Ansorge collected two examples of *bocagei* in juvenal dress with spotted breast at Canhoca in late November and December, so nesting must start there by the beginning of November. Father Callewaert also secured a young bird with spotted breast in early December at Luluabourg.

Turdus olivaceus graueri Neumann

Turdus graueri NEUMANN, 1908, Bull. Brit. Ornith. Club, vol. 21, p. 56 (type locality: Nsaza, southeastern Ruanda). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 282 (Kisaka; Urundi; Kisenyi; Uvira; Usumbura). HARTERT, 1920. Novitates Zool., vol. 27, p. 476. GYLDENSTOLPE, 1924, K. Svenska Vetensk Akad. Handl., ser. 3, vol. 1, no. 3, p. 154 (Ngoma).

Turdus pelios bocagei REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 367 (Kisenyi; Usumbura).

Turdus olivaceus graueri RENSCH, 1923, Jour. Ornith., p. 102. GRANT AND M.-PRAED, 1946, Bull. Brit. Ornith. Club, vol. 66, p. 78.

? *Turdus* sp. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 315 (Ngoma).

Turdus stormsi graueri SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 113 (Nyundo, 1876 m.).

DISTRIBUTION: From Bukoba, Lake Burigi, and Ruanda to the northern end of Lake Tanganyika and the Ubende District east of Lake Tanganyika. It has been said that Rudolf Grauer collected both *T. o. centralis* and *graueri* together, first at Bukoba on Lake Victoria and again at Kisenyi on Lake Kivu. Therefore it was claimed that *graueri* was a valid species. But after examination of a series of skins, all collected by Grauer in the region between Bukoba and Usumbura, I am convinced that individual variation near Bukoba and in Karagwe explains away any possible difficulty. There are no such marked differences as one finds farther south between *T. o. stormsi* and *T. l. niassae*. The wing length of *graueri* is 117–124 mm.

Grauer in 1907 followed a zigzag course from Bukoba, first up the Kagera River to Mtagata, then southward to Lake Burigi and Usuvi, and westward to Nsaza and Isavi in Ruanda. Next he turned northward to Lake Mwuleru and the Kivu Volcanoes. Later on, in 1908, he collected at Usumbura and near Baraka on Lake Tanganyika.

While specimens from Bukoba may be referred to *graueri*, some from northern Karagwe show an approach to *centralis*. Those

from Lake Burigi, the region of Nsaza, and Usumbura are all plainly *graueri*. A single skin from Kisenyi on Lake Kivu is more like *centralis*, though *graueri* has been reported from that same place. It would seem that *graueri* does not extend north of the Kivu Volcanoes, and Grauer's specimens from 140 to 300 kilometers west of Baraka again show more gray on the underparts.

The color of the bill was always noted by Grauer as yellow, and all the variation in plumage color points in the direction of races of *T. olivaceus*, never toward *T. abyssinicus*. Behavior, nesting, and voice will doubtless all prove to be the same as with *T. olivaceus centralis*.

Turdus olivaceus centralis Reichenow

Turdus pelios centralis REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 690 (type locality: Wadelai on Bahr-el-Jebel; also from Nyangabo); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 367 (Beni) SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 282 (Kisenyi; Rutshuru Plain; Moera; Mawambi). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 294 (Masidongo; Zambo; Molekera; Kaniki; Mutiba; Boga; old Mission St. Gustave). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 204 (Tobbo; Mangbetu country; Tunguru; Mswa).

Turdus icterorhynchus FLOWER, 1894, Proc. Zool. Soc. London, p. 601 (Ipoto).

Turdus pelios saturatus HARTERT, 1900, Novitates Zool., vol. 7, p. 53 (Fort George on L. Edward).

Turdus pelios DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (in part. Niam-Niam; Uelle). SALVADORI, 1909, Ann. Mus. Civ. Genova, ser. 3, vol. 4, p. 324 (Buta–Dungu); 1911, idem, ser. 3, vol. 5, p. 449 (zone of Gurba-Dungu).

Turdus albipectus REICHENOW, 1908, Ornith. Monatsber., p. 191 (type locality: Mboga, near lower Semliki R.); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 368.

Turdus centralis O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 369 (Mubuku Valley, 5000 ft.; Mokia; Beni).

Turdus pelios bocagei REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 367 (in part. West shore of L. Albert).

Turdus pelias centralis LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 32 (Rutshuru).

Turdus pelios albipectus SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 294 (Molekera; Kaniki).

Turdus libonianus centralis BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 378 (Uelle District).

Turdus libonyanus centralis RENSCH, 1923, Jour. Ornith., p. 99. GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 154 (Kartushi; Abeli; Kampi-na-Mambuti). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 439. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 315 (Lulenga); 1935, idem, vol. 27, p. 402 (Kansenze near Mt. Nyamlagira; Katana

on L. Kivu); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 115 (Buta; Medje; Poko; Mauda; Dika; Faradje; Niangara; Dungu; Rungu; Medje; Watsa); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 112 (Nzulu, 1500 m.); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 338 (Karambi); 1943, idem, vol. 37, p. 271 (Gabiro; Mutura). BERLIOZ, 1932, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 4, p. 377; 1936, idem, ser. 2, vol. 8, p. 331 (Irambo). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 567 (Saidi in Ituri). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 948. LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 78 (Luebo).

Turdus libonyanus pelios SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 115 (Mahagi Port).

Peliocichla libonyanus subsp. HENDRICKX, 1944, Ostrich, vol. 15, p. 212 (southwest of L. Kivu).

Turdus olivaceus centralis VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, pp. 32, 73 (Butahu R.).

SPECIMENS: Avakubi, five males, January 28, June 20, August 5, October 17, November 15; juvenile male, May 28; female, June 8. Medje, four males, March 8, 15, 26, September 11; two juvenile males, August 3, September 11; female, March 23; two juvenile females, April 7. Niangara, two males, January 9, May 8; female, April 29. Faradje, male, May 12; three immature males, October 11, 27, December 18; female, May 3; immature female, December 18.

ADULTS OF BOTH SEXES: Iris rather bright brown, naked skin behind eye dusky brown; bill yellow; feet light gray, light brownish green, or even pale buff.

DISTRIBUTION: From the base of Mt. Elgon and the Bahr-el-Jebel across the Uelle District and much of the lowland forest area of the Upper Congo. On the south it reaches the Kivu Volcanoes and perhaps the north shore of Lake Kivu. It occupies savannas and forest clearings, ranging up at times to 5800 feet in the highlands, but the distribution in the equatorial forest region is not well known. There it may extend southward toward the Manyema and westward almost to Coquilhatville. An example from Lukolela differs little from *centralis*, which is rufous only on the flanks and under the wings, yet most specimens from the Ubangi River may prove to be referable to *saturatus*.

In the Ituri, the Uelle, and most of the forested Upper Congo the common yellow-billed thrush is *centralis*, to be seen and heard around every village. In voice and behavior it recalls the American robin (*T. migratorius*), though it is much more timid and is frequently seen on the ground, feeding. Its caroling comes from the lower trees, in morning and evening.

The season of reproduction extends through most of the rainy part of the year, beginning in March in the Ituri, perhaps only in April in the Upper Uelle, and continuing until September. Singing goes on through the entire year; even in January I noted at Niangara that it was to be heard daily. The nest is typical for a thrush, made partly of mud, with a few leaves and other plant materials and then a lining of rootlets. One that I measured had an interior diameter of 9 cm., exterior width 14 cm. The usual situation is in a fork or on a bough of a tree at a height of 10 to 25 feet; one at Avakubi was built upon an old nest of *Lonchura* in a mango tree. Either two or three eggs may be laid, pale blue with reddish brown spotting that may be fine or coarse. Average dimensions are about 26.7 by 19.7 mm. The natal down is dull buffy brown, and the juvenal plumage has rounded spots of blackish brown on the breast, triangular marks of cinnamon on the wing-coverts, though back and crown are unspotted in the middle.

Of 14 stomachs, 10 contained some sort of fruit, berries, or at least seeds from fruit. In three cases there were small red peppers, numbering up to 10. Five birds had taken animal food: various insects including beetle larvae, a caterpillar, and one large winged termite. Two millipedes were likewise found, but no earthworms.

Turdus olivaceus saturatus (Cabanis)

Peliocichla saturata CABANIS, 1882, Jour. Ornith., p. 320 (type locality: Duala, Cameroon).

Turdus pelios JOHNSTON, 1884, The River Congo, p. 364 (Vivi). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127. DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 31 (Kisantu; Lower Congo).

Turdus libonianus saturatus BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 379 (Ubangi district; Loango).

Turdus libonyanus saturatus RENSCH, 1923, Jour. Ornith., p. 97. SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, pp. 338, 398 (Macaco in Kasai; Kwamouth); 1924, idem, vol. 12, pp. 271, 419 (Leopoldville; Kidada; Eala); 1925, idem, vol. 13, p. 15 (Bolobo); 1926, idem, vol. 13, p. 199 (Moanda; Kifuku on Banana Bay; Boma; Makaia Ntete; Temvo; Ganda Sundi; Lundu). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 440. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 315. BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 67 (Ouadda; upper Kemo R.).

? *Turdus libonyanus pelios* SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 439 ("Lower Ubangi district").

SPECIMEN: Boma, male, January 3.

ADULT MALE: Iris dark brown, bare skin behind eye dusky greenish; bill yellow; feet pale brownish green.

DISTRIBUTION: From the Gold Coast and the Cameroon highlands to the great bend of the Ubangi and south to the Lower Congo, the vicinity of the middle Congo River, and perhaps to the northern Kasai District.

Four specimens from Duma near the Ubangi seemed to me plainly *saturatus*, so this dark race may extend well into the Belgian Ubangi District. Just where it intergrades with *centralis* is still difficult to say. Schouteden reported a bird from Macaco in the Kasai as *saturatus*, while Lynes identified his specimen from Luebo as *centralis*. I have another from Lukolela which may be regarded as intermediate in coloration.

The Loango Coast and Lower Congo have usually been included in the range of *saturatus*, but specimens from the Mayombe and Boma are often not so dark beneath as those of the southern Cameroon. One from Ganda Sundi, in particular, shows a slight buffy wash beneath, and I should expect intergradation with *bocagei* near the mouth of the Congo River and also in the Kwango District.

In behavior and in song *T. o. saturatus* is exactly like *centralis*. I found it a common bird from Boma to Ganda Sundi and up the Congo River at least to Bolobo, always avoiding heavy forest, preferring second-growth and cultivated areas. The nest, as described by Bates,[1] is similar to that of *centralis*. Either two or three eggs are laid, varying in color from bluish green to pale bluish white or, exceptionally, warm cream color. The pale red and lilac markings may be coarse or fine, sometimes confined mainly to the larger end. Dimensions are 24–28 mm. by 20–21 mm.

Turdus abyssinicus baraka (Sharpe)

Merula baraka SHARPE, 1903, Bull. Brit. Ornith. Club, vol. 14, p. 19 (type locality: Ruwenzori). JACKSON, 1906, Ibis, p. 543.

Turdus baraka REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 687. VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 238.

Turdus abyssinicus O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 368 (Mubuku Valley, 5000–12,500 ft.). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 367.

[1] 1909, Ibis, p. 73.

Turdus olivaceus baraka RENSCH, 1923, Jour. Ornith., p. 101. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 442 (in part. Ruwenzori). JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 951 (in part. Ruwenzori).

DISTRIBUTION OF THE SPECIES: The highlands of northeastern and eastern Africa, from Eritrea and Abyssinia to the eastern Congo, many parts of East Africa, and Nyasaland. Formerly it was believed that these montane birds of eastern Africa must be conspecific with *T. olivaceus* of southern Africa. But despite the resemblance in color between the Abyssinian and the South African forms, we now find that the montane representatives in Tanganyika Territory and Nyasaland do not seem to connect the two groups. On the contrary, there is a gradual chain of races which suggests rather complete intergradation between *T. o. olivaceus* and *T. pelios* of northeastern Africa.

The highlands of Eritrea and Abyssinia are occupied by *T. a. abyssinicus* Gmelin, with chest brownish gray, lower breast and flanks rufous. *Turdus a. elgonensis* (Sharpe) of Elgon and the Kikuyu highlands is somewhat paler beneath, and *T. a. polius* Mearns of Mt. Gargues and Mt. Lololokui are still more grayish. *Turdus a. baraka* of Ruwenzori is deeper in color than *abyssinicus*, and *T. a. bambusicola* of the Kivu highlands is like *baraka*, but with a more whitish ground color on throat, and the rufous of lower underparts lighter.

Turdus abyssinicus is represented on the mountains near Ngorongoro by the very gray *T. a. oldeani* Sclater and Moreau, and on Mt. Mbololo in the Taita District, apparently, by the black-crowned *T. a. helleri* (Mearns). Kilimanjaro, Usambara, Uluguru, and the mountains of Nyasaland have other distinctive forms, closely allied if not conspecific with *abyssinicus*. On the other hand, *swynnertoni* of the Melsetter District in Southern Rhodesia seems to represent *T. olivaceus*.

The race *baraka* is not restricted to the Ruwenzori Range, for I collected a female of this race at Djugu, 5400 feet, west of Lake Albert, and saw it also, I believe, at Mulu, 8000 feet, to the northwest of Lake Edward. No specimens are yet available from west of Lake Edward.

On both sides of Ruwenzori this thrush is fairly common from 6000 feet up to the lower edge of the heath zone near 9000 feet and is found sparingly even in the senecio zone, almost to the snow line.

I saw it once at 14,800 feet, and Woosnam noted one actually on the Mubuku Glacier. He stated that it nested certainly up to 12,500 feet.

It is a rather shy bird, keeping mostly to the trees, and while it sings somewhat like *T. olivaceus*, its voice seems not even so loud. The bill in both sexes is of a rich reddish orange color, the rim of eyelids dull orange, the iris deep brown, and the feet are ochreous yellow, with gray-brown claws. The food of this species certainly includes beetles and small millipedes, but in two stomachs of *baraka* I noted only the purplish fruits of *Rapanea* and some small greenish white berries of another tree.

A male in breeding condition was taken on Ruwenzori on December 3, but I doubt that there is any definite, short nesting season there. An old nest was found by Woosnam in a fork of a tree heath, and we can only guess that *baraka* lays two pale blue eggs, blotched with rufous, like those of *elgonensis*. Eggs of the latter race are stated to measure 26–29 by 20–21.5 mm.

Turdus abyssinicus bambusicola Neumann

Turdus olivaceus bambusicola NEUMANN, 1908, Bull. Brit. Ornith. Club, vol. 21, p. 56 (type locality: western Kivu Volcanoes, 2300–2400 m.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 283 ("Bukoba Province"; "Usumbura"; northwest of L. Tanganyika, 2000 m.). HARTERT, 1920, Novitates Zool., vol. 27, p. 476. VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 238. RENSCH, 1923, Jour. Ornith., p. 102. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 315 (Lulenga; Nya-Muzinga; southeast of Mt. Karisimbi; Ngoma); 1933, idem, vol. 22, p. 376 (Nyundo; Bigogo); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 113 (Nzulu; Ngesho; Kamatembe; Kibumba; Kundhuru-ya-Tshuve; Kabara, 3200 m.; Kibga); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 338 (forest west of Astrida). VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 32 (Rutshuru; Tshumba).

Turdus sylvestris REICHENOW, 1908, Ornith. Monatsber., p. 191 (type locality: Bugoie Forest, Ruanda); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 368 (L. Karago in Ruanda; Tshingogo; Kisenyi). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 294 (Muhavura-Sabinyo Pass; Kibati; foot of Mt. Karisimbi; Dogodo R.).

Turdus olivaceus sylvestris RENSCH, 1923, Jour. Ornith., p. 102. SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 80.

Turdus olivaceus baraka SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 442 (in part. Kivu Volcanoes). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 951 (in part. Mt. Mikeno, 6000 ft.).

DISTRIBUTION: Highlands of the Kivu District above 5000 feet and at similar elevations in Ruanda and the mountains northwest of Lake Tanganyika.

In behavior and altitudinal distribution *bambusicola* is exactly like the more deeply colored *baraka*. It has no particular fondness for bamboos, which could supply it with no food, and it has been reported from about 5000 feet near Kisenyi up to 12,100 feet at Lukumi on Mt. Karisimbi, where I collected one example. But I saw it most frequently in the *Hagenia* woods near 11,000 feet, around the camp of Kabara. Grauer obtained specimens at 7500 to 7800 feet. I find it difficult to believe that this thrush could occur either in the Bukoba District or at Usumbura.

Grauer also collected undoubted examples on the mountains near Baraka and Uvira at 1900 to 2000 meters, while Rockefeller and Murphy secured others on Mt. Kandashomwa at 9000 feet and at Kisale on the Elila River near 6000 feet. The bill in this race is orange, sometimes rather reddish, the rim of eyelids dull orange-yellow, and the feet are ochreous yellow with gray-brown claws. A fully fledged young bird from Mt. Karisimbi on June 19 is but poor evidence as to the season of reproduction. Adults taken at that season were not in breeding condition.

The three stomachs I examined contained only fruits, of the *Rapanea* tree as well as other kinds.

FAMILY **MUSCICAPIDAE.** FLYCATCHERS

KEY TO THE GENERA OF MUSCICAPIDAE AS REPRESENTED IN THE CONGO[1]

1. A conspicuous naked wattle above or around eye 2
   No distinct eye wattle 4
2. Tail about half as long as wing, or less ..... *Dyaphorophyia* (p. 670)
   Tail distinctly longer than one-half of wing 3
3. Tail not so long as wing, wattle red ..... *Platysteira* (p. 678)
   Tail as long as wing, or longer, usually rounded or graduated, eye ring blue ..... *Terpsiphone* (p. 699)
4. Tail distinctly shorter than wing, or if equal to it, then square or only slightly rounded 5
   Tail usually longer than wing, or if equal to it, then graduated or pointed .. 26
5. A distinct band across chest, of black, rufous, or chestnut ..... *Batis* (p. 659)
   No such distinct breast band 6
6. Outermost primary small, not exceeding primary-coverts by more than 5 mm. 7
   Outermost primary larger, more than 5 mm. longer than primary-coverts .. 11

[1] The members of three broad-billed genera which have often been regarded as flycatchers are here referred to other families: *Chloropeta* and *Seicercus* to the Sylviidae; *Stizorhina* to the Turdidae.

7. Tail less than two-thirds as long as wing....8
Tail more than two-thirds as long as wing....9
8. Underparts white, with triangular black marks on breast. *Myopornis* (p. 625)
Underparts dark brown or reddish brown with diffuse dusky markings.... *Artomyias* (p. 651)
9. Males largely black above; females brownish, with some white on inner secondaries or inner greater wing-coverts.... *Ficedula* (p. 644)
Sexes alike, not black above or white on inner part of wing....10
10. Grayish brown above, with some dark streaking on chest; wings usually 80–89 mm.... *Muscicapa* (p. 635)
Small, wing less than 60 mm.; upperparts slate gray.... *Alseonax* (p. 627)
11. Metatarsus relatively very short, not longer than exposed culmen....12
Metatarsus longer than exposed culmen....13
12. Head with a conspicuous crest.... *Bias* (p. 656)
Without crest.... *Megabyas* (p. 653)
13. Large, wing between 82 and 116 mm. long; plumage wholly black or deep slate gray.... *Melaenornis* (p. 617)
Mostly smaller; plumage not wholly black or dark slate gray....14
14. Tail and its upper coverts mainly black, with sometimes a little white on outer rectrices; males always black above, both sexes white or buff below; bill narrow and warbler-like, rictal bristles small. *Hyliota* (p. 595)
Tail not mainly black....15
15. Underparts wholly rufous; upperparts ashy gray; wing 83–101 mm. long.. *Empidornis* (p. 616)
Underparts not rufous....16
16. Breast whitish, with conspicuous triangular spots or scaly markings of black, or blackish gray....17
Breast more uniform in color, only rarely with faint streaking on chest...18
17. Breast with triangular spots, upperparts brownish.... *Myopornis* (p. 625)
Breast with scaly markings, upperparts gray.... *Fraseria* (p. 622)
18. Bill narrow, almost warbler-like, not 4.5 mm. broad at nostril; plumage usually ashy or slate gray above, in one species dull brownish.... *Parisoma* (p. 600)
Bill wider, at least toward base....19
19. Wing usually less than 75 mm. long....20
Wing usually more than 75 mm. long....24
20. Bill very broad, its width at gape about equal to exposed culmen....21
Bill not so broad....22
21. Larger; wings 64 to 74 mm.; color always gray, throat paler.... *Pedilorhynchus* (p. 647)
Smaller; wings 55 to 64 mm.; coloration either gray or brownish.... *Alseonax* (p. 627)
22. Bill moderately broad, wider than deep at nostril.... *Muscicapa* (p. 635)
Bill narrower, about as broad as deep at nostril....23
23. Coloration grayish, with a pale line above lores and eyes.... *Hypodes* (p. 605)
Coloration brownish above, and a brownish wash on chest. *Apatema* (p. 626)
24. Upperparts rather light brownish or brownish gray, wings 79–102 mm.... *Bradornis* (p. 612)

Upperparts ashy gray, dull bluish gray, or in one case very dark brown...25
25. Mostly smaller; wings 65–84 mm.; metatarsi 16–18 mm.; color always grayish.....*Hypodes* (p. 605)
Mostly larger; wings 78–92 mm.; metatarsi 21–23 mm.; usually grayish, but with one species dark brown on back and chest.*Dioptrornis* (p. 608)
26. Wing less than 55 mm. long.....*Erythrocercus* (p. 685)
Wing more than 55 mm. long.....27
27. Crown, back, wings, and tail clear light blue; wings 62 to 73 mm. long.....*Elminia* (p. 688)
Coloration of upperparts not so light blue, usually less uniform from crown to tail.....28
28. Wings 57 to 69 mm.....*Trochocercus* (p. 692)
Wing usually exceeds 70 mm., and tail more than 70 mm.; if head is crested then median rectrices of males are often prolonged far beyond rest of tail; bare rim of eyelids blue and frequently somewhat expanded.....*Terpsiphone* (p. 699)

KEY TO THE SPECIES OF *Hyliota*

1. Under wing-coverts black; feathers of tibiae all black; upperparts with violet-blue gloss, white patch on upper wing-coverts rather small or absent.....*H. violacea*
Under wing-coverts wholly or almost wholly whitish; feathering of tibiae whitish, at least in front.....2
2. Upperparts black, more or less lustrous.....3
Upperparts duller, largely grayish or brownish.....4
3. Upperparts black with velvety brownish luster.....*H. australis*
Upperparts black with bluish, more metallic gloss.....*H. flavigaster*
4. Crown brownish, becoming darker brown on back, but practically without gloss.....*H. australis*
Crown dark brownish gray, back almost blackish and with a distinct oily blue-green gloss.....*H. flavigaster*

Hyliota flavigaster flavigaster Swainson

Hyliota flavigaster SWAINSON, 1837, The birds of West Africa, vol. 2, p. 47 (type locality: Senegal).

Hyliota orientalis HARTLAUB, 1882, Abhandl. Naturwiss. Ver. Bremen, vol. 8, p. 198 (Langomeri). EMIN, 1919, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 2, p. 428. SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 3, pp. 240, 241, 277 (Mundu; southern Makraka).

Hyliota flavigastra SHELLEY, 1888, Proc. Zool. Soc. London, p. 26 (Kuterma). HARTLAUB, 1892, Ibis, p. 373. REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 473.

Hyliota flavigastra flavigastra SCLATER AND M.-PRAED, 1918, Ibis, p. 705 (Mt. Baginzi). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 113 (Mauda; Mahagi Port; Faradje; Aba).

Hyliota flavigaster flavigaster SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 419 (Uelle District). BOWEN, 1931, Catalogue of Sudan birds, vol. 2, p.

56 (Kajo-Kaji). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 255 (Uelle and Kibali rivers).

SPECIMENS: Faradje, immature female, December 22. Garamba, three males, June 13, July 2; female, July 16; two immature males, July 1, 20; juvenile male, June 20. Aba, two males, July 15, December 21; immature male, December 21; two immature females, July 16, December 21.

ADULT MALE: Iris very dark brown; maxilla blackish, mandible bluish gray; feet dark bluish gray.

DISTRIBUTION OF THE SPECIES: In savannas from Senegal and the Gambia eastward to Nigeria, the northern Congo, the Bahr-el-Ghazal, and southern Abyssinia. Continuing southward through the Kavirondo District and Uganda, it reaches southern Tanganyika Territory, Nyasaland, Northern Rhodesia, Angola, and the grasslands of the southern Congo.

Hyliota flavigaster flavigaster is mainly restricted to the region north of the Equator, although extending a little to the south of it in Ankole. *H. f. barbozae* of savannas south of the Equator is distinguished by the fact that the white of the wing-coverts is extended posteriorly along the outer edges of some of the secondaries. Intergradation in this character seems to begin in Uganda.

In Congo territory the race *flavigaster* has been found only in the grasslands of the Uelle and those just west of Lake Albert. At Bogoro, 4500 feet, we collected a female in September, 1926. Perhaps it will also be found along the upper Ubangi, but we did not note it south of the Uelle River. At Faradje it was not common, and it became numerous only close to the Sudan boundary.

Either singly or in groups of as many as five, these birds roam through the bushes and small trees of the savanna, exploring the foliage for insects and behaving much more like warblers than like flycatchers. They often join with *Salpornis* and *Eremomela canescens* to form a mixed bird party, and any call uttered by this *Hyliota* was so weak that I did not notice it.

Adults taken in June, July, and December all had gonads in the resting stage; a young bird just out of the nest in June is good evidence that reproduction takes place at the beginning of the rains, toward May. The seven stomachs investigated all held remains of insects, including tiny beetles, two young mantises, and some insect eggs.

Hyliota flavigaster barbozae Hartlaub

Hyliota barbozae HARTLAUB, 1883, Jour. Ornith., p. 329 (type locality: Caconda, Benguella, Angola).

Hyliota flavigastra REICHENOW, 1887, Jour. Ornith., p. 305 (Leopoldville).

Hyliota flavigastra barbozae REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 473. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 258 (Mboka; Dogodo R.); 1923, idem, vol. 11, pp. 339, 398 (Dumbi; Kabambaie; Ngombe in Kasai; Kwamouth). BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 425.

Hyliota flavigaster SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 286 (Elisabethville).

Hyliota flavigaster barbozae SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 419 (Katanga). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 77 (Sandoa; Kamina; Tshikapa).

SPECIMEN: Leopoldville, female, July 6.

FEMALE: Iris brown; bill dark gray above, light gray below; feet light gray.

DISTRIBUTION: From Stanley Pool, the French Middle Congo, Angola, and Northern Rhodesia eastward to Baraka on Lake Tanganyika, Usuvi southwest of Lake Victoria, and the Ruvu River in Tanganyika Territory. To the southeast it reaches southern Nyasaland and the adjacent part of Mozambique.

Eastern examples have sometimes been separated as *H. f. marginalis* Reichenow because of deeper tawny coloration on the breast, but the difference is slight at best.

A common bird at Kwamouth and in the Kasai, according to Schouteden, the race *barbozae* has also been secured in the Upper Katanga at the South Kalule River by Raven, in Marungu at Kasoko, 4100 feet, by Rockefeller and Murphy, and near Baraka at 3900 feet by Grauer. The record from Usuvi is also Grauer's. In behavior *barbozae* is exactly like the nominate race; it is most apt to be seen in family groups, especially in savanna woods, and utters a weak bisyllabic whistle. Sterling Rockefeller noted that it was very apt to join with other birds in mixed flocks.

At Mwinilunga near the Katanga border White found that breeding began in October, and young on the wing were common in January. A nest found by Paget-Wilkes[1] in Nyasaland in early December was slightly larger than that of a *Batis*, and composed largely of lichen. Placed about 30 feet up, in the top of a savanna tree, it held two eggs, matt-white encircled by a zone of lilac and brown spots.

[1] 1931, Ibis, p. 478.

Hyliota australis australis Shelley

Hyliota australis SHELLEY, 1882, Ibis, p. 258, pl. 7, fig. 1 (type locality: Umvuli R., Southern Rhodesia). NEAVE, 1910, Ibis, p. 127 (Kambove, 4500 ft.; Dikulwe R., 4000 ft.). SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 286 (Elisabethville). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 419. WINTERBOTTOM, 1939, Revised check list of the birds of Northern Rhodesia, p. 51 (Chimpili Plateau, north of L. Bangweolo).

Hyliota australis australis LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 77 (Kayoyo).

DISTRIBUTION OF THE SPECIES: From Mashonaland and the Tete district of Portuguese East Africa north to the Katanga, and thence locally to Usambara, the Kavirondo District, the vicinity of Lake Albert, and the Cului River in Angola.

Nominate *australis*, with wings of males 69–74 mm. and outer web of outermost tail quill in males white on the basal half, is believed to extend north to the Katanga. *H. a. inornata* J. Vincent[1] was described as having considerable white also on the inner webs of the outermost rectrices. There seems to be some variability in this respect, and I have seen one male from Mwinilunga with an oblique white band in that part of the tail.

Hyliota australis slatini of the Semliki Valley and Kakamega in Kavirondo has no white on the rectrices of males, the chest is more tawny, and the wing is only 65–69 mm. long in males. *H. a. usambara* Sclater[2] would seem to be very much like *slatini*.

In the Upper Katanga Neave found *Hyliota australis* not uncommon in the savanna woods, sometimes singly, sometimes in family parties of five or six. White thinks it more common than *H. f. barbozae* in the western part of Northern Rhodesia and less inclined to frequent the densest areas of woodland. Jack Vincent described a male as uttering pleasant little chippering whistles, followed sometimes by a sweet trilling warble.

Breeding seems to begin toward October, and a nest found by Neuby-Varty[3] on November 7 in Southern Rhodesia was placed 25 feet up, in a fork near the top of a tree. Similar to that of *Dryoscopus cubla*, but smaller and more loosely built on the outside, it was cup-shaped and contained three eggs. These were pinkish

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[1] 1933, Bull. Brit. Ornith. Club, vol. 53, p. 135 (Zobue, Kirk Mts., Portuguese East Africa).

[2] 1932, Bull. Brit. Ornith. Club, vol. 52, p. 104 (Amani, Usambara).

[3] 1945, Ostrich, vol. 16, p. 79.

white, finely spotted with reddish brown and slate, the markings forming a zone around the blunt end. Measurements were 15–17 by 11.5–13 mm.

Hyliota australis slatini Sassi

Hyliota slatini SASSI, 1914, Anz. K. Akad. Wiss. Wien, vol. 51, p. 308 (type locality: Beni, eastern Belgian Congo); 1915, Jour. Ornith., p. 112; 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 248, pl. 8. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 258 (Kilo). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 419.

DISTRIBUTION: Kilo and the region of the Semliki Valley eastward to the Kakamega Forest in Kenya Colony. This would seem far removed from the range of nominate *australis*, but the gap may yet be bridged by future collecting.

This race seems not to inhabit savannas, but rather the edges of lowland rain forest and clearings or second growth near their margins. Rudolf Grauer collected only a single male in the Semliki Valley, and Thélie another near Kilo. Two more males were secured at Kakamega by Keith Caldwell in 1924, and in 1926 I found birds of both sexes in the region of Beni.

First I noted a pair as part of a mixed bird party including *Phormoplectes preussi*, *Parus funereus*, *Apalis jacksoni*, and *Anthreptes tephrolaema* on October 2 near the village of Fataki, in some rather open woods. Then the female of another pair was collected on October 5 some 5 kilometers north of the new post of Beni. On November 7, at Mushinene in the eastern Semliki Forest, a pair was secured in some medium-sized trees rising above an overgrown banana plantation. They were feeding silently amid the foliage, like warblers.

Females differ from males in having crown, ear-coverts, and back gray-brown instead of velvety brownish black, and the white of the wing patches extends out along the margins of three inner secondaries. The outermost tail quill of females has white on its outer web, and there may also be a whitish patch on its inner web. Wings of males measure 65–69 mm., those of the two females 62 and 64 mm. Iris dark brown, bill black, with basal two-thirds of mandible and sides of base of maxilla blue-gray, feet dark lead gray.

The stomach contents of my three specimens consisted of bits of insects like small bettles, and two small naked caterpillars.

Their gonads did not indicate breeding; so close to the Equator one would not expect any short, definite period for nesting.

Hyliota violacea violacea Verreaux

Hyliota violacea J. AND E. VERREAUX, 1851, Rev. Mag. Zool., p. 308 (type locality: Gaboon). SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 200 (Tshela in Mayombe).

DISTRIBUTION OF THE SPECIES: From the forested Gold Coast to the southern Cameroon, the Mayombe, and the Manyema forest in the eastern Congo. It is my belief that the range will be extended to include all the lowland rain forests of Upper and Lower Guinea, despite the extreme rarity of specimens.

The nominate race, of the Cameroon, Gaboon, and Mayombe, has the whole upperparts black glossed with violet. Males are distinguished by a white patch on greater wing-coverts which is barely suggested or even wanting in females. The wing length of males is 77–79 mm., of females 72–77 mm.

The single female known from the eastern Congo was collected at Kitutu near the Elila River by Rockefeller and Murphy on September 4, 1929. It has no trace of white on the wing and is more rufous on throat and breast than a female from Sakbayeme, Cameroon. Males of *H. v. violacea* are paler than females on throat and breast, and there can be little doubt that the name *affinis* Reichenow was based on the female of *violacea*. In Upper Guinea, *H. v. nehrkorni* Hartlaub appears to have no white on the wing in either sex, but only two specimens are known.

Nothing has been published on behavior, though Sterling Rockefeller noted that the Kitutu example was found in forest trees, moving about actively with a mixed flock of small birds. Whether or not specimens from the eastern Congo will agree entirely with nominate *violacea* remains to be seen; we may be sure the species will yet be found scattered all across the lowland forest of the Upper Congo.

KEY TO THE SPECIES OF *Parisoma* IN THE CONGO

1. Upperparts dark brown, outermost tail quill with whitish near tip and on outer web ..... *P. lugens*
   Upperparts gray 2
2. Outermost tail quill largely white, adjacent rectrices with some white at tips ..... *P. plumbeum*
   No white on rectrices; general coloration much darker gray .. *P. griseigulare*

Parisoma lugens jacksoni Sharpe

Parisoma jacksoni SHARPE, 1899, Bull. Brit. Ornith. Club, vol. 10, p. 28 (type locality: Mt. Elgon).

Parisoma lugens jacksoni CHAPIN, 1932, Bull. Amer. Mus. Nat. Hist., vol. 65, p. 260 (Marungu district). MEISE, 1934, Ornith. Monatsber., p. 16.

DISTRIBUTION OF THE SPECIES: Abyssinia and highlands of eastern Africa from Kenya Colony to Marungu in the southeast Congo, the Matengo Plateau in southwest Tanganyika Territory, and the vicinity of Dedza in Nyasaland.

Parisoma lugens lugens (Rüppell) of the highlands of Abyssinia has the crown markedly darker brown than the back, while *P. l. jacksoni* is scarcely darker on the crown. Sometimes the crown seems even a little warmer in tint. The latter race ranges from Mt. Elgon and central Kenya Colony southward at least to central Tanganyika Territory and the highland of Marungu. *P. l. clara* Meise,[1] described from the Matengo Plateau, northeast of Lake Nyasa, is very similar to *jacksoni* but is paler gray on the underparts. Marungu birds may approach *clara* slightly, while several specimens collected recently by A. Prigogine on the highland west of the Ruzizi Valley are even darker than *jacksoni*. Schouteden tells me they represent a distinctly new subspecies.

This is not a bird of mountain forests, but rather of acacia trees, preferably the flat-topped species, in savannas above 5000 feet. The only record of *jacksoni* from Congo territory is that of three specimens secured at Ketendwe, 6050 feet, in Marungu by Rockefeller and Murphy. They were noted as frequenting trees in a native farm, and the food of this bird consists of small insects, varied occasionally by berries.

An egg taken from the oviduct by Jackson in East Africa was white, with black and dark purple spots. Nests found by Belcher[2] in Kenya Colony were light cups of rootlets, placed in forks of small thorn trees, during April and June. They contained sets of two eggs, well marked with brown and gray on a creamy ground, averaging 17 by 14 mm. On the Marungu, nesting would be expected in November.

Parisoma plumbeum plumbeum (Hartlaub)

Stenostira plumbea HARTLAUB, 1858, Jour. Ornith., p. 41 (type locality:

[1] 1934, Ornith. Monatsber., p. 16 (Mahuka, northwest of Lipumba).

[2] 1942, Ibis, p. 92.

Casamance R., Senegambia). REICHENOW, 1887, Jour. Ornith., pp. 300, 305 (Manyanga; Leopoldville). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 3, pp. 242, 245 (Mundu; Negunda).

Parisoma plumbeum OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 126. SHELLEY, 1900, The birds of Africa, vol. 2, p. 217. REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 521 (Ngombe Lutete); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 355. DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Kisantu). O.-GRANT, 1908, Ibis, p. 307 (Ponthierville); 1910, Trans. Zool. Soc. London, vol. 19, p. 395 (Mokia; Beni). SCLATER AND M.-PRAED, 1918, Ibis, p. 705 (Mt. Baginzi). SCHOUTEDEN, 1918, Rev. zool. Africaine, vol. 5, p. 288 (Molekera; Mboka); 1923, idem, vol. 11, pp. 339, 398 (Luebo; Dumbi; Kabambaie; Ngombe in Kasai; Kwamouth); 1924, idem, vol. 12, p. 271 (Kidada); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 115. SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 193 (Mangbetu country). SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 32 (Kasindi–Beni; Mawambi).

Parisoma plumbeum plumbeum BANNERMAN, 1923, Ibis, p. 715. GYLDENSTOLPE, 1924, K. Svenska. Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 196 (Zombia). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 403. BOWEN, 1931, Catalogue of Sudan birds, vol. 2, p. 54. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 224, fig. 66 (Kibali R.; Guruba R.). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 568 (Kasenyi). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 111 (Mauda; Abimva; Dika; Niarembe; Tiro R.; Mundu); 1941, Rev. Zool. Bot. Africaines, vol. 34, pp. 266, 365. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 221. BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 66 (upper Kemo R.). VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 71 (Semliki R.).

SPECIMENS: Leopoldville, male, December 22. Stanleyville, male, November 14. Banalia, female, September 26. Avakubi, female, February 17. Medje, male, July 6. Niangara, two males, June 1, December 16. Nzoro, male, female, August 10. Faradje, male, December 18.

ADULTS OF BOTH SEXES: Iris dark brown; bill blackish, with base of mandible light blue or blue-gray; feet bluish gray to blue, with yellowish soles.

DISTRIBUTION OF THE SPECIES: From the Gambia to the Bahr-el-Ghazal and southern Abyssinia, south to southern Angola, the Transvaal, and Natal. It is found even in the clearings of the equatorial forest of the Congo.

Parisoma plumbeum plumbeum occupies Upper and Lower Guinea, extending to Abyssinia, Uganda, the Kasai, and northern Angola. *P. p. orientale*, more whitish below and with little if

any tawny wash on the under tail-coverts, ranges from eastern Kenya Colony to the Katanga, Natal, and southern Angola.

The general behavior of this species suggests a warbler rather than a flycatcher. Yet despite the proposal to call it a "tit-warbler," it seems to be related to the typical flycatchers. Going in pairs, it searches the twigs and boughs, whether in the fair-sized trees in clearings of the lowland forest (where it is heard more often than seen) or amid the lace-like foliage of acacias in the adjacent savannas. In these grassy regions it prefers the borders of forest galleries. On the west slope of Ruwenzori I have found it at 4800 feet, but it is not known in the Congo from any higher level. The long-drawn sibilant notes, which seem to serve both as a song and a rallying call, are of two, or sometimes three, syllables.

Only one of our specimens, at Medje on July 6, was in condition to breed, and the nesting season is probably in the early part of the rains. At Mubendi, Uganda, Belcher found a nest being built in April in an old woodpecker or barbet hole, low down in an acacia tree. An egg taken by Bates from the oviduct was buffy, with many small spots of brown and pale lavender. He thought the set would be of two.

Of the seven stomachs I examined, four contained small naked caterpillars, about nine all told. Six birds had eaten other harder insects, small beetles in particular.

Parisoma plumbeum orientale Reichenow and Neumann

Parisoma orientale REICHENOW AND NEUMANN, 1895, Ornith. Monatsber., p. 74 (type locality: Kibwezi, Kenya Colony).

Parisoma plumbeum NEAVE, 1910, Ibis, p. 127 (upper Lualaba R., 3800 ft.).

Parisoma plumbeum orientale LYNES, 1934, Ibis, p. 41 (Chinsali; Mt. Sunzu). WINTERBOTTOM, 1939, Revised check list of the birds of Northern Rhodesia, p. 50 (southeast of L. Bangweolo; Broken Hill).

Parisoma plumbeum plumbeum LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 77 (Mission St. Gérard on upper Lufira R.). WHITE, 1946, Ibis, p. 82 (Mwinilunga).

DISTRIBUTION: From Malindi and the southeastern part of Kenya Colony through Tanganyika Territory to the southeastern Congo, southern Angola, and south through Nyasaland to Natal.

The paler coloration of the underparts and the whiteness of under tail-coverts seem to be the best characters of this race. We have an undoubted specimen of *orientale* from Baudouinville

on the west side of Lake Tanganyika, and I expect Katanga birds to be closer to *orientale* than to *plumbeum*. One example from just west of Baraka shows considerable resemblance to *orientale*. There appears to be a broad area of intergradation in northern Angola.

This must be a rather sparse inhabitant of savanna woods in the southeastern Congo, occasionally to be seen in mixed bird parties. In behavior it resembles the nominate race, but the song has been described by Benson[1] as a mellow, musical "tee-ry-tee" and rather loud. Several nests have been found in southern Africa, built inside old holes of woodpeckers or barbets and in knot holes. The two eggs are described by Austin Roberts as greenish white, thickly covered with speckling of olive and some slate brown, measuring 17 by 13.3 mm.

Parisoma griseigulare (Jackson)

Alseonax griseigularis JACKSON, 1906, Bull. Brit. Ornith. Club, vol. 19, p. 19 (type locality: Kibirau, Toro, Uganda).

Alseonax ansorgei SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 245 (east of Rutshuru Plain, 1600 m.; Moera; Beni; Mawambi).

Muscicapa griseigularis SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 77.

Muscicapa griseigularis griseigularis GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 197 (Kartushi).

Alseonax griseigularis griseigularis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 402. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 111 (Bondo Mabe; Panga; Kotili). JACKSON, 1938. The birds of Kenya Colony and...Uganda, vol. 2, p. 896.

Parisoma griseigularis griseigularis SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 115.

SPECIMENS: Panga, male, September 16. Bengamisa, male, September 28. Avakubi, male, July 23. Babeyru, male, July 27.

ADULT MALE: Iris grayish brown to dark brown, rim of eyelids slightly swollen, light pinkish brown; maxilla black, mandible dull gray to light bluish; feet light blue.

DISTRIBUTION OF THE SPECIES: Forested Cameroon and Gaboon eastward to the Ituri District, the Semliki Valley, and forest areas in Uganda. There is one immature example in the Congo Museum from Kunungu near the middle Congo River, so we may expect the range to include the whole Upper Congo forest.

Whether the race *holospodium* Bates[2] of the Cameroon is valid

[1] 1937, Ibis, p. 564; 1940, idem, p. 596.

[2] 1909, Bull. Brit. Ornith. Club, vol. 25, p. 27 (Bitye, Cameroon).

I doubt. The few specimens I have seen showed no appreciable difference in size or color from those of Uganda and the northeastern Congo. The type of *Muscicapa ansorgei* Hartert[1] is a female and possibly a little lighter beneath than most eastern specimens, yet I doubt that it will prove distinguishable.

Like Bates, when I first became acquainted with this bird in life, I considered it a near relative of *Parisoma plumbeum*. But the young of *griseigulare* is heavily spotted with light rufous on head and body, whereas the juvenal plumage of *plumbeum* is merely washed with brownish, especially beneath, and has the greater wing-coverts bordered with brown.

Parisoma griseigulare seems not at all numerous in the Ituri, where it haunts leafy boughs in virgin forest or old second growth. One would usually overlook it were it not for the sibilant calls, which bear a strong resemblance to those of *P. plumbeum*. But the voice of the forest species seems louder, and regularly has four syllables, somewhat run together. The fondness for heavy woods, the lack of white in the tail, and the increased number of notes suffice for easy recognition. I am not surprised that we collected no female.

In September, 1926, I again noted this bird in a wood just southwest of Irumu, and later collected specimens between Irumu and Beni, and at 5200 feet in the forest east of the Rutshuru Valley. It does not usually occur in mountain forests above 5000 feet.

Three of our male examples were in breeding condition in July and September. Gyldenstolpe took a female with ovary enlarged at Beni in April. Breeding may be expected to go on through a great part of the rains, but no nest has yet been reported. Three stomachs were found to hold insect remains, including one small caterpillar. One also had two hard seeds, possibly from some fruit.

Hypodes cinerea cinerea (Cassin)

Eopsaltria cinerea CASSIN, 1857, Proc. Acad. Nat. Sci. Philadelphia, vol. 8, p. 253 (type locality: Moonda River, Gaboon).

Muscicapa brevicauda O.-GRANT, 1907, Bull. Brit. Ornith. Club, vol. 19, p. 107 (type locality: Upper Congo R. near Ponthierville; also from Yambuya); 1908, Ibis, p. 308.

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[1] 1910, Bull. Brit. Ornith. Club, vol. 25, p. 95 (Ombrolema, Gaboon).

Alseonax ituriensis REICHENOW, 1908, Ornith. Monatsber., p. 191 (type locality: Avakubi on Ituri R.); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 300.

Alseonax cinereus SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 245 (Beni).

Pedilorhynchus spec.? SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 248 (Ukaika).

Muscicapa caerulescens cinereus O.-GRANT, 1917, Ibis, p. 86 (Uelle R.).

Alseonax caerulescens cinereus SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 338 (Luebo; Macaco; Kamaiembi).

Alseonax coerulescens cinereus SCHOUTEDEN, 1924, Rev. Zool. Africaine, vol. 12, p. 419 (Eala; Tondu).

Muscicapa cinerascens SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 77 (Ukaika).

Alseonax cinereus cinereus BATES, 1926, Ibis, p. 584. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 401. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 222 (Likandi R.). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 111 (Panga). JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 895. WOODMAN, 1938, Sudan notes and records, vol. 21, p. 323 (southwest Bahr-el-Ghazal).

Hypodes cinereus cinereus FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 221.

SPECIMENS: Avakubi, male, November 14. Medje, immature female, March 5.

MALE: Iris dark brown; maxilla black; mandible light blue; feet blackish.

DISTRIBUTION OF THE SPECIES: From the Gold Coast eastward to the Cameroon, southeastern Sudan, Kenya Colony, and probably Southern Somaliland, then southward through the Congo and East Africa to southern Angola, Natal, and Pondoland.

Hypodes cinerea nigrorum (Collin and Hartert),[1] with wings 71–75 mm. and tail 48–55 mm., is known only from the Gold Coast and Togo. *H. c. cinerea*, of the Lower Guinea area, is very similar, probably a little darker and less brownish gray, with wings 64–74 mm., tail 44–54 mm. It ranges from southern Cameroon south to Quicolungo in northern Angola and the Kasai District, eastward to the Manyema and Ituri districts, the forests of Uganda, and the Lotti Forest in the southeastern Sudan.

From Kenya Colony to the Katanga and southern Angola, thence south to Inhambane and Southern Rhodesia, the coloration

[1] New name for *Muscicapa cinerascens* Sharpe, 1879; see Novitates Zool., 1927, vol. 34, p. 52.

is paler, wings 73–83 mm., tail 56–65 mm. All these birds are probably to be included under *H. c. cinereola*, while *H. c. caerulescens* (Hartlaub), of Natal and adjacent districts, is again darker gray, with wings 75–81 mm., tail 58–64 mm.

The small Lower Guinea race, *H. c. cinerea*, is not very often collected and lives in clearings amid heavy forest as well as in wooded situations in the neighboring areas of the Uelle, the Kasai, and Uganda. Only after a glance with the field glass has revealed the light line above the lores and the eye is one apt to give special attention to such a plain ash-gray flycatcher.

Our male specimen was one of a pair found in a freshly cleared plantation, where they were beginning to build a nest in a cavity near the top of a small dead tree. In Uganda L. M. Seth-Smith is said to have found this species breeding in old weaver-bird nests, but I feel sure that he confused *Pedilorhynchus comitatus* with it.

Hypodes cinerea cinereola (Finsch and Hartlaub)

Muscicapa cinereola FINSCH AND HARTLAUB, 1870, Die Vögel Ost-Afrikas, vol. 4, p. 302, pl. 4 (type locality: Usaramo, eastern Tanganyika Territory). SCHALOW, 1886, Jour. Ornith., pp. 413, 414, 423, 424, 426 (Lufuku R.; east Marungu; L. Itambe; Lugoma R.); 1887, idem, p. 238.

Muscicapa cinerola MATSCHIE, 1887, Jour. Ornith., p. 152 (Mpala; Lukumbi R.; "Lualaba" = Luvua R.; Luvule R.).

Alseonax caerulescens REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 454.

Muscicapa caerulescens NEAVE, 1910, Ibis, p. 126 (Dikulwe, 4000 ft.; Lualaba R., 2500 ft.; Lukafu; Bunkeya R.; Lufupa R.).

Cichlomyia caerulescens PAGET-WILKES, 1926, South African Jour. Nat. Hist., vol. 6, p. 64 (upper Kafue R. near Ndola).

Alseonax cinereus kikuyuensis BATES, 1926, Ibis, p. 584. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 401. SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 286 (Elisabethville).

Hypodes cinereus cinereola FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 221.

DISTRIBUTION: From southern Somaliland and the Kikuyu district of Kenya Colony south to Inhambane in Portuguese East Africa, westward to the Katanga, central and southern Angola, and the Rhodesias.

This large, light-colored race inhabits open woodland and the borders of heavier forest, ascending in places to levels of 6000 feet or a little more, though it is mainly a lowland bird. Böhm appears to have seen it many times while crossing Marungu, and

Neave found it common in the Upper Katanga, especially in thick bush or forest on the banks of streams. There is a specimen in the Congo Museum from Nieuwdorp, Katanga, and Rockefeller and Murphy collected two examples at Moba on Lake Tanganyika.

Going singly or in pairs, it gives a call heard all year round which Benson wrote "twit-it-it-tweet," with emphasis on the first syllable. Unlike *Parisoma plumbeum*, it darts into the air after insects. Breeding in the regions near the Katanga begins in November. The nest is a cup made of fine grasses, fibers, and rootlets, placed either in a cavity in a tree, 10 to 20 feet up, or in some thick fork, or even in a gap between parallel limbs of a *Euphorbia*. The set is of two eggs, creamy or pale buff, heavily freckled or blotched with yellowish or reddish brown, and measuring 18–20 by 14.1–15 mm.

KEY TO THE SPECIES OF *Dioptrornis* IN OR NEAR THE CONGO

Upperparts bluish gray; eyelid feathering sometimes whitish above and below eye, sometimes gray ..... *D. fischeri*
Upperparts dark brown, chest brown; eyelids never with any white feathering ..... *D. brunneus*

Dioptrornis fischeri semicinctus Hartert

Dioptrornis semicinctus HARTERT, 1916, Bull. Brit. Ornith. Club, vol. 37, p. 4 (type locality: Kabakaba, northwest of L. Albert on Lendu Plateau). SCLATER, 1930, Systema avium aethiopicarum, pt. 2, p. 408.

Muscicapa (*Dioptrornis*) *semicinctus* HARTERT, 1920, Novitates Zool., vol. 27, p. 489.

Muscicapa spec. n. (ob *M. Johnstoni*?) EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 239 (Kavalli).

Dioptrornis fischeri semicinctus SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 111 (Djalasinda). MOREAU, 1937, Bull. Brit. Ornith. Club, vol. 57, pp. 73–74.

DISTRIBUTION OF THE SPECIES: From the Imatong and Didinga Mountains in the southeastern Sudan to Mt. Dedza in Nyasaland. *D. f. fischeri* Reichenow occupies highlands in East Africa from the Imatong Mountains through Kenya Colony to Uluguru. It is slaty gray above and has a conspicuous white ring entirely encircling the eye.

Dioptrornis fischeri semicinctus, known only from the highland west of Lake Albert, is similarly colored, except that the white eye ring is interrupted, especially in front, and to a lesser degree behind the eye. *D. f. toruensis* differs still more in that a light

eye ring is wholly lacking. Its range extends from Ruwenzori and the highland west of Lake Edward south through the Kivu and Ruanda to the mountains northwest of Lake Tanganyika.

Dioptrornis fischeri nyikensis, lighter gray above and with whitish feathering on the lids, especially above and below the eye, occupies the highlands west of Lake Nyasa and extends to the Mbulu district of Tanganyika Territory. Specimens from Marungu, on the southwest side of Lake Tanganyika, are like *nyikensis* but are somewhat whiter on the lower breast and abdomen. *D. f. ufipae* Moreau,[1] of the plateau southeast of Lake Tanganyika, is described as having a well-developed white eye ring and very whitish underparts.

The localities where *semicinctus* has been found are all at 5000 feet or a little higher, near patches of montane forest. Schouteden collected male and female at Djalasinda near Mahagi in 1925. Near Masikini and Djugu in 1926 I secured three more. A male has the wing 85 mm. long, a female 78 mm., and an immature female 79 mm.

This rather large gray flycatcher is not so much a bird of dense montane forest as of its borders, along roadsides or the trees at the fringes of farms. It is rather common, in small family parties, in the wooded valley of the Nizi River close to Djugu, about 5400 feet above sea level. The birds may perch on bushes or bare boughs more or less in the open and disappear into the forest when alarmed.

The sexes are alike in coloration, with iris dark brown; bill bluish gray on basal half, blackish on distal half; feet blackish, with soles yellowish gray.

Emin's note from Kavalli, near Bogoro, may well be applicable to this bird, since *Muscicapa johnstoni* is a synonym of *D. f. fischeri*.

Dioptrornis fischeri toruensis (Hartert)

Muscicapa toruensis HARTERT, 1900, Novitates Zool., vol. 7, p. 37 (type locality: Fort Gerry, Toro, Uganda). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 393 (Mubuku Valley, 5000–6000 ft.); 1917, Ibis, p. 88.

Dioptrornis kiwuensis REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 830 (type locality: L. Kivu); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 299 (Kwidjwi I.; Bugoie Forest; Tshingogo Forest; foothills of Mt. Mikeno, 2200 m.).

[1] 1942, Bull. Brit. Ornith. Club, vol. 62, p. 41 (Mbisi Forest, Sumbawanga).

Alseonax tornensis SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 244 (Urundi; northwest of L. Tanganyika, 2000 m.; west of Baraka, 2000 m.).

Dioprotornis toruensis SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 256 (Kibati; Mokoto; Mutero).

Muscicapa (Dioptrornis) toruensis HARTERT, 1920, Novitates Zool., vol. 27, p. 289 (Rugege Forest).

Dioptrornis toruensis GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 195 (Sake; Burunga; Mt. Mikeno, 3500 m.). BERLIOZ, 1936, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 8, p. 329 (Mbwahi). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 901.

Dioptrornis toroensis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 498. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 317 (Lulenga; Nya-Muzinga); 1933, idem, vol. 22, p. 376 (Rugegera; Rugobagoba); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 116 (Rutshuru; Mugunga; Burunga in Mokoto; Ngesho; Kamatembe; Tshumba; Kibumba; Nyarusambo; Tshamugussa; Kibga; Nyabitsindi; Nyabirehe). PETERS AND LOVERIDGE, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 257. VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, pp. 30, 71 (Kalehe near Lutunguru).

Dioptrornis fischeri toruensis MOREAU, 1937, Bull. Brit. Ornith. Club, vol. 57, p. 74. SCHOUTEDEN, 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 338 (forest west of Astrida).

DISTRIBUTION: From the forest patches of Toro and the east slope of Ruwenzori to the highlands near Lakes Edward and Kivu, Ruanda, Urundi, and the mountains near Uvira and Baraka. The altitudinal range is usually from 4500 to about 8000 feet, yet this flycatcher is also fairly common in the open *Hagenia* woods of the central Kivu Volcanoes, near 11,000 feet.

On the western slope of Ruwenzori I looked in vain for it and did not see it north of Lubero on the highland near Lake Edward. Yet it is common enough about the Kivu Volcanoes just below the dense montane forests and may be seen perching on bushes near the roads. The three stomachs I examined contained only pieces of hard-bodied insects.

I do not recall having heard any vocal note, and from my dissections of adult and immature birds it seemed as though breeding had been completed toward February. Grauer collected a spotted young bird near Lake Kivu in early November, and one of the same age was secured near the Ulindi River on July 31 by Rockefeller and Murphy. Nesting may therefore be expected in the first half of the rains.

In the Kenya highlands *D. f. fischeri* is known to build in an upright fork of a tree, using beard lichen, bark fiber, and animal

hair. Its two eggs, as described by Jackson, are pale dull green, spotted and blotched with reddish brown.

Dioptrornis fischeri nyikensis (Shelley)

Muscicapa nyikensis SHELLEY, 1899, Bull. Brit. Ornith. Club, vol. 8, p. 35 (type locality: Nyika Plateau, Nyasaland).

Dioptrornis nyikensis CHAPIN, 1932, Bull. Amer. Mus. Nat. Hist., vol. 65, p. 260 (Marungu).

Dioptrornis fischeri nyikensis MOREAU, 1937, Bull. Brit. Ornith. Club, vol. 57, p. 74.

DISTRIBUTION: From the Dedza District of Nyasaland to the highlands north of Lake Nyasa and to the Mbulu district of Tanganyika Territory, where intergradation begins with *D. f. fischeri*. Specimens from Marungu in the southeastern Congo are close to *nyikensis*, with the same small amount of whitish around the eyelids but somewhat whiter on lower breast and belly. Thus they approach the description of *D. f. ufipae* Moreau.

Within our limits this flycatcher is known only from the Marungu highland, where Rockefeller and Murphy collected specimens at Ketendwe, Sambwe, and Pande, all localities around 6100 feet. They were fairly common, perched in trees in native gardens, and sought their prey by darting toward the ground. C. W. Benson describes the call of *nyikensis* as a loud "zit." A young bird in complete juvenal dress was taken at the end of February, and breeding seemed to have taken place in the early part of the rains.

[*Dioptrornis brunneus* Cabanis]

Dioptrornis brunnea CABANIS, 1886, Jour. Ornith., pl. 1, fig. 1; 1887, idem, p. 92 (type locality: Pungo Andongo, northern Angola).

This brown-backed species ranges from the Cuanza Valley in northern Angola south to the highland of the Bailundo district. *D. b. brunneus* is restricted to the lower area in the north, while *D. b. bailunduensis* Neumann[1] is known only from the Bailundo and Mombolo areas at elevations near 5000 feet. The latter race is less tinged with ochreous or rufous brown, but not appreciably different in size.

While the northern race might be expected to reach the southern Kwango District of the Congo, no specimen seems yet to have been taken there.

[1] 1929, Ornith. Monatsber., p. 177 (Chipepe, Bailundo district, Angola).

KEY TO THE SPECIES OF *Bradornis* IN AND NEAR THE CONGO

Fore crown with distinct, narrow blackish streaks, wing 74–93 mm. long..... .....*B. microrhynchus*
Fore crown without streaking, wings 77–102 mm.....*B. pallidus*

Bradornis pallidus pallidus (Müller)

Muscicapa pallida J. W. VON MÜLLER, 1851, Naumannia, no. 4, p. 28 (type locality: Melpess, Kordofan).

Bradyornis pallidus HARTLAUB, 1882, Abhandl. Naturwiss. Ver. Bremen, vol. 8, p. 191 (Langomeri).

Bradyornis pallida HARTLAUB, 1889, Jour. Ornith., p. 49 (Magungo; Kuterma; Mundu). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 3, pp. 239, 242.

Bradornis pallidus pallidus SCLATER AND M.-PRAED, 1918, Ibis, p. 702 (Meridi; Tembura; Yei). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 405. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 111 (Mauda; Dika); 1941, Rev. Zool. Bot. Africaines, vol. 34, p. 266. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 568 (Kasenyi).

Bradornis pallidus murinus SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 123.

Bradornis pallidus granti FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 223 (Aba).

SPECIMENS: Niangara, two males, June 10, December 16. Faradje, three males, February 23, October 18, November 20; immature male, April 18; two females, April 18, November 6. Garamba, male, July 13.

ADULTS OF BOTH SEXES: Iris grayish brown, bill and feet black.

DISTRIBUTION OF THE SPECIES: From Senegal eastward in savannas to Eritrea, Abyssinia, and the coast of East Africa, then southward on the east of the Congo forest to Mozambique and Zululand, also westward again to Damaraland, Angola, and the Lower Congo region.

Bradornis pallidus modestus Shelley is the rather small dark race of the Upper Guinea savannas, with wings 78–90 mm., ranging eastward to the Ubangi-Shari, and replaced to the northward by the paler *B. p. nigeriae* Reichenow, with wings 79–90 mm. *B. p. pallidus* is a little more tawny, with wings 77–86 mm., and extends from Kordofan and Sennar south to the Uelle and Lake Albert. Allied races, *bowdleri* Collin and Hartert and *neumanni* Hilgert, occupy the Abyssinian region, while the coastlands of East Africa are the home of the small *subalaris* Sharpe and *leucosoma* Grote.

Bradornis pallidus griseus Reichenow is a large race, with wings 85–100 mm., extending from central Kenya Colony, Uganda, and the vicinity of Lake Edward south to the northern shores of Lake Tanganyika and into Tanganyika Territory. It scarcely differs in size from *B. p. murinus* but is usually more tinged with brownish. The race *murinus* is found from the Lower Congo and Angola to the Katanga, Rhodesia, and the eastern Transvaal. Finally, the large, pale *B. p. aquaemontis* Stresemann, described from Waterberg in Southwest Africa, may extend to Balovale on the upper Zambesi.

Bradornis pallidus pallidus is the dull brown flycatcher to be seen so commonly at any time of year in the grasslands of the Uelle and reported also from the west shore of Lake Albert. Not particularly shy, it sits on bushes or stumps, often near tilled fields, and frequently flies down to the ground as though catching insect food. It is without any loud call or attractive song.

In the Upper Uelle the breeding season seemed to begin in the dry months, and toward March or April birds in juvenal dress, heavily spotted with buff, were seen in company with their parents. Broods were of two, apparently, and adults taken from June to November were all non-breeders.

A nest described from Darfur by Lynes[1] was 6 feet up in a leafless sapling, a little cup woven of wiry rootlets, and it contained three eggs. There laying came in May. These eggs were pale blue-green, blotched and spotted with red-brown and red-ocher, and with violet shell markings. Their dimensions averaged 19.8 by 14.6 mm.

Bradornis pallidus modestus Shelley

Bradyornis modesta SHELLEY, 1873, Ibis, p. 140 (type locality: Abokobi, Gold Coast).

Bradornis pallidus modestus SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 406 (Gribingui R.). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 66 (Bangui).

DISTRIBUTION: From Sierra Leone or even Portuguese Guinea eastward to the Cameroon grasslands and the Gribingui River in Ubangi-Shari. A specimen from Bangui has been referred to this race, so we still have to learn where *modestus* and *pallidus* meet.

[1] 1925, Ibis, p. 122.

Bradornis pallidus griseus Reichenow

Bradyornis grisea REICHENOW, 1882, Jour. Ornith., p. 221 (type locality: Mgunda Mkali, Tabora District, Tanganyika Territory).

Bradyornis murinus HARTERT, 1900, Novitates Zool., vol. 7, p. 36 (Karimia). O.-GRANT, 1908, Ibis, p. 305 (north and northwest of L. Tanganyika); 1910, Trans. Zool. Soc. London, vol. 19, p. 390 (Mokia).

Bradornis pallidus murinus REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 436 (in part. Karimia). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 246 (Kisaka; Urundi; Baraka; Ruzizi Valley; Kisenyi). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 255 (Lubilu; Yamba-Yamba).

Bradyornis murinus murinus BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 413 (in part. Eastern Belgian Congo).

Bradornis pallidus suahelicus SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 406. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, pp. 224, 228. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 897. SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 115; 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 338 (Kibingo).

Bradornis pallidus griseus M.-PRAED AND GRANT, 1940, Ibis, pp. 521, 735 ("northeastern Belgian Congo").

DISTRIBUTION: Open highlands of central Kenya Colony and southern Uganda, to the upper Semliki Valley, savannas near the northern end of Lake Tanganyika, and the greater part of Tanganyika Territory except the coast.

A dividing line between this race and *murinus* is not easily drawn. Specimens from near Baraka have wings 88–100 mm. and are rather brownish. They agree well with others from Karagwe. A male from Toro and a female from Karemi near the upper Semliki have wings 95 and 88 mm.

This is not a very common bird in the savannas near Lake Edward and Lake Kivu but apparently is more numerous on the northwest shore of Tanganyika. It shuns elevations above 5000 feet in all that region. The behavior is that of *pallidus*, and nest and eggs are undoubtedly similar.

Bradornis pallidus murinus Finsch and Hartlaub

Bradyornis murinus FINSCH AND HARTLAUB, 1870, Die Vögel Ost-Afrikas, p. 866 (type locality: Caconda, Angola). SHARPE AND BOUVIER, 1877, Bull. Soc. Zool. France, vol. 2, p. 478 (Condé). NEAVE, 1910, Ibis, p. 125 (Kaluli R.; west shore of L. Bangweolo).

Cossypha pecilei OUSTALET, 1886, Naturaliste, vol. 8, p. 300 (type locality: Nganciu, middle Congo R.). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 751.

Bradyornis murina REICHENOW, 1887, Jour. Ornith., p. 305 (Leopoldville). SALVADORI, 1907, Boll. Mus. Zool. Anat. Comp. Torino, vol. 22, no. 570, p. 4 (Lukonzolwa).

Bradornis pallidus murinus REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 436 (in part. Leopoldville). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 406. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 230. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 224 (Katanga). VERHEYEN, 1947, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 23, no. 9, p. 2 (Sangwa, north of Albertville). A. W. VINCENT, 1947, Ibis, p. 173.

Bradyornis pallidus var. *modestus* OUSTALET, 1904, Bull. Mus. Hist. Nat. Paris, vol. 10, p. 541 (Brazzaville).

Bradornis murinus SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, pp. 339, 398 (Tshisika; Tshikapa; Kabambaie; Macaco; Kwamouth); 1924, idem, vol. 12, p. 271 (Kidada): 1926, idem, vol. 13, p. 199 (Kifuku on Banana Bay); 1930, idem, vol. 18, p. 286 (Elisabethville).

Bradornis pallidus modestus BOUET, 1942, Ois. Rev. Française Ornith., new ser., vol. 12, p. 134 (Brazzaville).

SPECIMEN: Leopoldville, male, December 22.

ADULT MALE: Iris dark brown, bill and feet blackish.

DISTRIBUTION: Enclave of Cabinda, Lower Congo, and southern border of the Congo forest to Angola, the Katanga, Nyasaland, eastern Transvaal, and possibly Zululand, although specimens from the last area are said to be smaller.

Specimens from the southern Congo savannas are large, wings usually 86–102 mm., but those from Stanley Pool, the Kasai, and the savannas of the Manyema are usually somewhat browner than examples from southern Angola. In this they resemble *griseus* rather closely. Birds from Baudouinville, Lubenga, and Lake Suzi in Marungu, collected by Rockefeller and Murphy, are more typical of *murinus*.

While this is a common bird of lowland savannas and open woodland, throughout the southern Congo, it has also been found up to 5650 feet in Marungu. Nesting begins with the rains, toward late September. In Nyasaland Belcher (1930) noted that nests were frail cups of rootlets, placed in a fork at 6 to 10 feet from the ground. Eggs are normally three, bluish green, with roundish spots of lilac and brown, measuring 19–21 by 14.5–15.5 mm.

[*Bradornis microrhynchus* Reichenow]

Bradyornis microrhynchus REICHENOW, 1887, Jour. Ornith., p. 62 (type locality: Irangi, Kondoa Irangi District, Tanganyika Territory).

? *Bradyornis griseus* NEAVE, 1910, Ibis, p. 125 (Chambezi R.; Kalungwisi R.).

? *Bradornis griseus griseus* WINTERBOTTOM, 1939, Revised check list of the birds of Northern Rhodesia, p. 50 (Chambezi, Kalungwisi, and Loangwa valleys).

This distinctly grayish *Bradornis*, with fine blackish streaks

on crown, is restricted to relatively dry regions of eastern Africa from the northern end of Lake Nyasa to British Somaliland The nominate race is large, with wings 82–93 mm., and it has been reported as occurring in the Loangwa Valley and east of lakes Bangweolo and Moero. I am not sure that the specimens reported by Neave as *griseus* were really of the present species.

About the smaller subspecies, which certainly occupy a wide area from southeastern Kenya Colony to Somaliland, there has been much debate. One of them, best called *B. m. erlangeri* Reichenow, with wings 74–81 mm., certainly ranges from southern Somaliland to the area just east of the Bahr-el-Jebel, and a specimen in the American Museum was collected by H. E. Anthony at Mongalla. It is just possible that this bird may reach the north end of Lake Albert.

[*Empidornis semipartitus orleansi* Rothschild]

Empidornis semipartitus orleansi ROTHSCHILD, 1922, Bull. Brit. Ornith. Club, vol. 43, p. 45 (type locality: Redjaf on the Bahr-el-Jebel). BOWEN, 1931, Catalogue of Sudan birds, vol. 2, p. 55 (Kajo-Kaji).

Empidornis semipartitus semipartitus SCLATER AND M.-PRAED, 1918, Ibis, p. 703 (Bahr-el-Ghazal Province; Lado).

Empidornis semipartitus BERLIOZ, 1922, Bull. Mus. Hist. Nat. Paris, vol. 28, p. 343 (Dufile).

This rufous-breasted flycatcher ranges from Abyssinia, Kordofan, and Darfur to northern Uganda, western Kenya Colony, and the interior of Tanganyika Territory. The nominate race, with wings about 83–90 mm., is restricted mainly to Abyssinia, but *orleansi* of the Anglo-Egyptian Sudan and northern Uganda is just a little deeper rufous below and has wings mostly 90 to 95 mm. long. *E. s. kavirondensis* Neumann, extending from West Suk and Kavirondo into Tanganyika Territory, has wings usually from 95 to 101 mm.

A specimen of *E. s. orleansi* was collected for the Frankfurt Museum by H. Schubotz on September 15, 1911, at Loka in the Lado district, within less than 50 miles of the Congo border, and this is a rather common bird near Kajo-Kaji and Nimule. Thus far it has not been reported from Congo territory. *E. s. kavirondensis* is scarcely expected to range westward from the Mwanza District to the borders of Ruanda-Urundi.

KEY TO THE SPECIES OF *Melaenornis*

1. Head, back, and underparts dark bluish slate color; tail rounded; iris yellowish ..... *M. ardesiaca*
   General coloration pure black or sooty blackish, scarcely tinged with blue; iris dark brown 2
2. Plumage of head and body with a distinct sheen; tail square or slightly forked; males black, females usually grayer ..... *M. pammelaina*
   Plumage of head and body with little or no luster; tail somewhat rounded; males not always pure black, females more sooty ..... *M. edolioides*

Melaenornis ardesiaca Berlioz

Meloenornis ardesiaca BERLIOZ, 1936, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 8, p. 329 (type locality: Mbwahi, west of L. Kivu).

Melaenornis pammelaina SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 256 (in part. Loashi).

Melaenornis ardesiaca CHAPIN, 1937, Bull. Cercle Zool. Congolais, vol. 14, p. 7. SCHOUTEDEN, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 340. VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 71 (Nyabukoko and Kalehe near Lutunguru).

Melaenornis ardesiacea SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 117.

DISTRIBUTION: Mountain slopes west of the Albertine Rift, from west of Lake Edward south to the region west of the Ruzizi Valley. Two specimens from Loashi, northwest of Lake Kivu, were collected by A. Pilette for the Congo Museum on April 16, 1913. In 1936 the Paris Museum received three from Guy Babault, labeled as coming from Mbwahi, a montane locality west of Lake Kivu. About that same year the Stockholm Museum obtained specimens from Luvumba, near the upper Ulindi River, northwest of Uvira. The altitudinal range must be from 5000 to about 7000 feet.

In the vicinity of Mohange, near 5700 feet, between Alimbongo and Lutunguru, west of Lake Edward, I saw eight of these slate-colored flycatchers at several different spots on August 18 and 19, 1937. They went often in two's and three's, and were rather conspicuous as they perched on the tall flower spikes of *Lobelia giberroa* or projecting branches, bare or leafy, of trees near the edges of the forest. Rather than hiding in the woods or thickets, they frequented the natural clearings or the open bushy valleys.

To my surprise I found the iris to be dull yellow in both sexes, whereas the other two species of *Melaenornis* have dark brown eyes. There is no appreciable color difference between the sexes

of *M. ardesiaca;* the wings measure 82–92 mm., tails 74–86, culmen to base 18.5–20. The tail is well rounded, the bill markedly broader than in either *edolioides* or *pammelaina.* One of Pilette's specimens seems to have been an immature bird, yet it shows no pale spotting of the plumage. In any case *M. ardesiaca* is not very closely allied to either of the other wide-ranging species. In three stomachs I found only the remains of insects.

A. Prigogine writes me that this slaty flycatcher is rather common at Lutunguru and that he has taken specimens in juvenal dress which have pale spots on throat and breast. He found several nests being built in April, 1950, in forks of small trees, 4 or 5 meters up, but in 1952 he collected a fledgling with tail half-grown on March 20.

Melaenornis edolioides ugandae Van Someren

Melaenornis lugubris ugandae VAN SOMEREN, 1921, Bull. Brit. Ornith. Club, vol. 41, p. 104 (type locality: Sezibwa R., Uganda).

Melaenornis lugubris HARTLAUB, 1882, Abhandl. Naturwiss. Ver. Bremen, vol. 8, p. 196 (Wandi; Langomeri).

Cercotrichas melanoptera OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127.

Melaenornis edolioides HARTERT, 1900, Novitates Zool., vol. 7, p. 36 (Fort George).

Melaenornis pammelaina REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 441 (Nyangabo); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 299 (L. Edward). LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 23. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 256 (old Mission St. Gustave; Kitobe; Lisasa; Boga). SCLATER AND M.-PRAED, 1918, Ibis, p. 701 (Meridi; Yambio; Yei). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 125 (Tingasi; Vatako; Tomaya; Buguera).

Melaenornis pammelaena DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (in part. "Ituri").

Melaeornis pammelaina SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 246 (Kasindi; Kasindi–Beni).

Melaenornis edoloides edoloides GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 194 (Zombia).

Melaenornis edolioides ugandae SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 409. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 111 (Mauda; Dika; Faradje; Niarembe; Mahagi Port); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 117 (Molindi R.; Rwindi); 1940, Rev. Zool. Bot. Africaines, vol. 34, p. 60 (Kawa Forest); 1941, idem, vol. 34, p. 266. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 232. FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 284. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 902. VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 71 (Rugetsi R.).

Melaenornis edolioides lugubris BOWEN, 1931, Catalogue of Sudan birds, vol. 2, p. 55. GRANT AND M.-PRAED, 1940, Bull. Brit. Ornith. Club, vol. 60, p. 85 (in part).

Melanornis edolioides ugandae STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 568 (Kasenyi; Ekibondo).

Melaenornis edolioides edolioides BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 66 (upper Kemo R.).

SPECIMENS: Niangara, two males, November 9, 10. Faradje, two males, February 26, September 4; six females, March 23, May 3, 6, 11, 12; juvenile female, May 6.

ADULTS OF BOTH SEXES: Iris dark brown, bill and feet black.

DISTRIBUTION OF THE SPECIES: Savanna regions from Senegal to Sennar, northern and eastern Abyssinia, southward to the edges of the Congo forest as far as the Rutshuru Valley, to the shores of Lake Victoria, and the upper Amala River in Kenya Colony.

Melaenornis edolioides edolioides (Swainson), ranging from Senegal east to Nigeria or the Cameroon, is very black, with relatively long tail and rather dark inner webs of remiges. *M. e. lugubris* (Müller) of Abyssinia is more slaty blackish and has inner webs of remiges pale gray basally. Its tail varies from 90 to 106 mm. in length. I doubt if the race *schistacea* is valid.

Melaenornis e. ugandae is intermediate in color, both of body plumage and of remiges, with wings usually 85–99 mm., tails 79–94 mm. But specimens from the eastern side of Lake Victoria are somewhat larger, wings 95–104 mm., tails 88–99 mm. Our series from the Uelle must be referred to *ugandae*, since the wings measure 85–96 mm., tails 79–89 mm. The range of *ugandae* thus includes the northern savannas of the Congo, most of Uganda, and the grasslands near Lake Albert and Lake Edward. It ascends to the Lendu Plateau and was collected by Grauer at 6000 feet on the eastern slope of Ruwenzori.

Between Niangara and Aba, in the Uelle savannas, the northern black flycatcher is relatively common and is seen perching singly or in pairs in the bushes and small trees, even close to villages. At a distance the dark plumage and upright pose recall a drongo shrike. They utter harsh scolding calls, in addition to the "song" of the male, a low sibilant sound like "sweechy," repeated at short intervals. The latter notes are heard with special frequency toward the month of October but seldom at other seasons.

The breeding season comes earlier in the year, from February to May or June, according to our dissections. Two nests were found at Faradje, May 6 and 11. One was built on a horizontal branch, at a height of 20 feet, held firmly in place by a few upright twigs. The other was only 7 feet up, in a cavity at the top of a dead stub of a tree, not covered above, but well screened from the sides. Both were shallow bowls, built of small twigs, dry grass, plant stems, and a little bark, lined with rootlets. In one the female was incubating her two eggs, pinkish white, heavily spotted with rufous, especially about the larger end. Their dimensions were 21 by 15.7 and 21.3 by 15.3 mm. The other nest held two young, dusky but spotted all over with ocher, the largest spots being those of the breast, the most minute on the upper back. Both their parents were in attendance, but the male was far more shy than his mate. In Uganda this black flycatcher has been found nesting in late March and April and often relines an old nest of a coly or a thrush. Spotted young from the Rutshuru Valley indicate that laying may take place there in November or December.

The food of *Melaenornis edolioides* consists of insects, captured on the wing. Only four stomachs were carefully examined, but I never observed any inclination toward fruit eating on the part of the species.

Melaenornis pammelaina pammelaina (Stanley)

Sylvia pammelaina STANLEY, 1814, *in* Salt, A voyage to Abyssinia, app., pp. xlvii, lix (type locality: "Abyssinia," error for Mozambique).

Melaeornis ater tropicalis SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 246 (Bukoba Province).

Melaenornis pammelaina tropicalis FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 233 (Ankole).

Melaenornis pammelaina pammelaina SCHOUTEDEN, 1943, Rev. Zool. Bot. Africaines, vol. 37, p. 271 (Gabiro).

DISTRIBUTION OF THE SPECIES: Natal and the Transvaal northward to the vicinity of Stanley Pool on the Congo, the north end of Lake Tanganyika, Karagwe, and Barsaloi in Kenya Colony.

Specimens from northern Mozambique are much smaller than those of Angola, and it seems that *M. p. pammelaina* ranges from Portuguese East Africa northward in eastern Africa to Kenya Colony, westward to the shore of Lake Tanganyika and the Man-

yema grasslands. The larger race, which has recently been called *M. p. atra*, is believed to extend from Natal to Ovamboland and northward to the Katanga, Kasai, and Stanley Pool. It has a distinctly longer tail. The wings of nominate *pammelaina* measure 95–109 mm., tails 80–93 mm. The race *atra* has wings 101–116 mm., tails 87–102 mm.

The smaller eastern race is found in Karagwe, in Ruanda-Urundi, and from Baraka westward into the Manyema grasslands at least as far as the Lualaba. Rudolf Grauer collected specimens now in the Rothschild Collection between Usuvi and Kisaka, in the vicinity of Baraka, and in savannas in the region of Kasongo. In general behavior it resembles the race *atra*, and near Baraka it must nest at the very beginning of the rains. Grauer obtained spotted young there, from two different broods, with tails less than half grown, on October 5 and 10.

Melaenornis pammelaina atra (Sundevall)

Bradyornis ater SUNDEVALL, 1850, Öfvers. K. Svenska Vetensk. Akad. Förhandl., vol. 7, p. 105 (type locality: Durban, Natal).

Melaenornis pammelaena DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (in part. Kisantu).

Melaenornis ater NEAVE, 1910, Ibis, p. 125 (Dikulwe R.).

Melaenornis pammelaina pammelaina SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, pp. 341, 399 (Ngombe in Kasai; Tshikapa; Tshisika; Kwamouth). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 78 (upper Lufira R.). A. W. VINCENT, 1947, Ibis, p. 175.

Melaenornis pammelaina SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 286 (Elisabethville).

SPECIMEN: Kwamouth, immature female, December 19.

DISTRIBUTION: Natal and the Transvaal to Angola, the middle Congo River, Kasai, Katanga, and Marungu, and the highlands of Nyasaland. My specimen from Kwamouth has the wing only 98 mm. long, tail 86 mm., but it is a young bird with many buffy spots still retained from the juvenal plumage. A series of seven adults from Pungo Andongo in northern Angola have wings 101–115 mm., tails 89–102 mm.

In Marungu Rockefeller and Murphy secured specimens of *M. p. atra* at Lubenga, Kampia, Lake Suzi, and Selembe, with wings 105–114 mm., tails 89–97 mm. Above 5650 feet this black flycatcher was not taken. In the Upper Katanga and the southern Kasai it appears to be fairly common, but in the Lower

Congo it has not been reported. It is partial to savanna woods and may occasionally be found with a mixed bird party. My specimen from Kwamouth was in a low tree in rather open savanna.

The glossy black plumage and slightly forked tail give this flycatcher some resemblance to a drongo, but it is not clear that any advantage results therefrom. Pairs are the rule, and the call is usually a faint piping, according to Belcher, or sometimes a hiss. One pair was heard calling sweetly at dawn, a sharp note being followed by one or two fuller syllables.

Nesting begins in August in Nyasaland and continues into November in that same latitude. Old nests of doves or thrushes are frequently used and relined, while a hollow in some decaying stub or in a large fork may also be utilized, with the addition of a few rootlets. Eggs number two or three, the cream or pale green ground color heavily mottled with reddish brown, and with a little lilac. Benson gave the dimensions as 22–23 by 16 mm.

KEY TO THE SPECIES OF *Fraseria*

Wing less than 85 mm. in length; over the blackish lores is a short white line, reaching to above the eye ..... *F. cinerascens*
Wing more than 85 mm. long; no white mark above the lores ..... *F. ocreata*

Fraseria ocreata ocreata (Strickland)

Tephrodornis ocreatus STRICKLAND, 1844, Proc. Zool. Soc. London, p. 102 (type locality: Fernando Po).

Fraseria ocreata SHARPE AND BOUVIER, 1877, Bull. Soc. Zool. France, vol. 2, p. 480 (Shiloango R.). REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 445. CHAPIN, 1921, Amer. Mus. Novitates, no. 17, p. 16 (Avakubi; Ngayu; Gamangui; Medje). SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, pp. 341, 399 (Basongo; Luebo; Kamaiembi; Kabambaie; Kwamouth); 1925, idem, vol. 13, p. 16 (Kunungu); 1926, idem, vol. 13, p. 201 (Lundu; Temvo). SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 77 (Moera; Beni; Mawambi; Ukaika).

Fraseria ochreata REICHENOW, 1887, Jour. Ornith., p. 308 (Kasongo). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127. DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 30.

Fraseria ocreatus ocreatus BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 359. GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 124 (Lesse).

Fraseria ocreata ocreata SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 411. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 232, fig. 69 (Uelle R.; Likandi R.). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 568 (Saidi). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 111 (Kotili; Djamba; Medje; Panga; Bondo Mabe; Nava R.). JACKSON, 1938,

The birds of Kenya Colony and...Uganda, vol. 2, p. 910. BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 66 (upper Kemo R.). VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 71 (Nganzi; Kakunda; Tungula R.).

SPECIMENS: Avakubi, male, September 27. Ngayu, male, July 27. Gamangui, male, female, February 7. Medje, female, August 9, two immature males, January 24, August 9.

ADULTS OF BOTH SEXES: Iris dark brown, bill black, feet dark gray.

DISTRIBUTION OF THE SPECIES: Forested countries from Sierra Leone to Fernando Po, the Congo, Uganda, and northern Angola. *F. o. ocreata* occupies the whole Lower Guinea area, extending eastward to the Budongo and Bugoma forests of Uganda, southward to northern Angola, and westward to Fernando Po and Southern Nigeria. *F. o. prosphora* Oberholser, with crown gray like the back, ranges from the Gold Coast to Liberia, and there may be a still paler race, *kelsalli* Bannerman, in Sierra Leone.

In the Congo the nominate race is widely distributed in the lowland forests from the Mayombe to the Semliki Valley, southward into the gallery forests in the Kasai. Bohndorff and Grauer collected it near Kasongo, Schubotz at Angu on the Uelle, and I have taken specimens also at Lukolela and Angumu.

In the Ituri forest it was noted usually in parties of three to six about the edges of old plantations or in tall trees even in the uncut forest. Harsh sibilant or buzzy calls are the rule, yet now and then there comes a more pleasant burst of musical notes. Bates[1] even heard imitations of other birds such as *Dicrurus atripennis* and *Bias musicus*.

Nests in the Cameroon described by Bates were placed either in knot holes or between stout twigs on a branch, and built of vegetable fibers, leaf skeletons, and stems, as well as rootlets. A set of two eggs was found, light olive green with elongate blotches and spots of bright umber brown and dark gray largely obscuring the ground color. One of them measured 21 by 17 mm.

The species must breed at every season in the Ituri, for we took males with large gonads in February and September, and our two young birds, retaining much of their spotted juvenal plumage, must have been hatched about June and December. The buff

[1] 1909, Ibis, p. 29; 1911, Ibis, p. 520.

spotting on crown, back, and wing-coverts would seem to prove that the genus belongs with the flycatchers or thrushes.

Examinations of eight stomachs have invariably revealed pieces of insects, such as beetles, a hemipter, and a hairy caterpillar. Yet in three of them there were also small green fruits and a few hard seeds from fruit.

Fraseria cinerascens cinerascens Hartlaub

Fraseria cinerascens HARTLAUB, 1857, System der Ornithologie Westafrica's, p. 102 (type locality: Ashanti, Gold Coast). REICHENOW, 1887, Jour. Ornith., p. 300 (Manyanga); 1903, Die Vögel Afrikas, vol. 2, p. 446. CHAPIN, 1921, Amer. Mus. Novitates, no. 17, p. 16 (Avakubi). SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 341 (Tshikapa); 1924, idem, vol. 12, p. 420 (Tondu).

Fraseria cinerascens cinerascens BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 360 (northern Belgian Congo; Ubangi R.); 1936, The birds of tropical West Africa, vol. 4, p. 235, fig. 70 (Angu). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 411. BERLIOZ, 1941, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 13, p. 402 (Brazzaville).

SPECIMEN: Avakubi, male, May 30.

ADULT MALE: Iris dark brown, bill black, feet light blue faintly tinted with purplish.

DISTRIBUTION OF THE SPECIES: From Portuguese Guinea through forested Upper Guinea to southern Cameroon, the lower Congo River, southern Kasai, Ituri and lower Uelle rivers. Specimens from Portuguese Guinea were found to be lighter gray on back and crown, and named *F. c. guineae* Bannerman.[1] The nominate race ranges from southeastern Sierra Leone to the Congo.

Despite a certain similarity in color, this is quite a different bird from *F. ocreata*, smaller and with a white stripe above the lores. It appears to be restricted in its haunts to forested river banks and is a very rare bird in the eastern Congo forest, more common in the Kasai and the Cataracts region. Schouteden obtained spotted young at Basongo, August 2, and Tshikapa, October 23, which were not mentioned in his report of 1923. Brother Joseph Hutsebaut tells me that he has secured it at Buta, too.

At Avakubi my helper shot a single example in forest undergrowth; but Bates, Bouet, Glover, Allen, and Good all agree that

[1] 1922, Bull. Brit. Ornith. Club, vol. 42, p. 69 (Gunnal).

in West Africa *Fraseria cinerascens* is seen mainly perching on boughs or roots over the margins of streams. Bates compared its behavior to that of a little kingfisher, but its food consists of insects, as we too found on examining the stomach.

I have seen young birds in complete juvenal plumage from the Kasai and the Gaboon, taken from May to October, so the breeding season is apt to be prolonged. Our adult from the Ituri, north of the Equator, was in breeding condition in late May. In young of this species the spotting of crown and back is less distinct than in *F. ocreata,* and the whole coloration seems more brownish.

Myopornis böhmi (Reichenow)

Bradyornis böhmi REICHENOW, 1884, Jour. Ornith., p. 253 (type locality: Kakoma, Tanganyika Territory).

Myopornis böhmi sharpii SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 341 (Tshisika).

Myopormis böhmi SCHOUTEDEN, 1927, Bull. Cercle Zool. Congolais, vol. 4, p. 38 (Elisabethville; Tembwe).

Myopornis böhmi SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 412. A. W. VINCENT, 1947, Ibis, p. 178.

Myopornis böhmi böhmi SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 286 (Elisabethville).

Myopornis bohmi WINTERBOTTOM, 1939, Revised check list of the birds of Northern Rhodesia, p. 50 (Chambezi R.; Broken Hill).

DISTRIBUTION: From the Mossamedes Province and Benguella highland of Angola eastward to the southeastern Congo, Nyasaland, and western Tanganyika Territory. I cannot find any real justification for the recognition of a western race as *sharpii* Bocage.

This streaked flycatcher is a rather common bird of wooded savannas in the southeastern Congo, from levels of 2500 feet up to 5650 feet at Lubenga in Marungu, where Rockefeller and Murphy collected two males. Schouteden found it also at Tshisika in the southern Kasai.

Benson[1] and White[2] have both described the behavior as typical of a flycatcher. The posture while perched is erect, and ants seem to form a fair proportion of the food. Spotted young collected in Angola indicate that breeding takes place there very

[1] 1940, Ibis, p. 598; 1951, Bull. Mus. Comp. Zool., vol. 106, p. 95; 1952, Bull. Brit. Ornith. Club, vol. 72, p. 64.

[2] 1943, Ibis, p. 129.

early in the rains, toward October and November, and Winterbottom has reported breeding at Broken Hill in October. It remained for Alfred Vincent to discover the eggs, a set of four in an old nest of the weaver, *Anaplectes r. leuconotus*, 20 feet above the ground, near Elisabethville, on September 23. They were dull pale green, covered with faint but close freckling of pale pinkish brown; one measured 17.6 by 13.4 mm. Near Mzimba and Kapiriuta, Nyasaland, in October Benson found sets of three and of four eggs in old nests of *Plocepasser rufoscapulatus* and of *Phormoplectes olivaceiceps*.

KEY TO THE SPECIES OF *Apatema*

Throat and abdomen uniform whitish, upper breast gray with a tinge of buff; no supraloral line; mandible almost wholly of pale coloration..... ..... *A. olivascens*

Underparts faintly mottled with gray and white, upper breast more uniform grayish; a narrow gray supraloral line visible; and mandible blackish except at base..... *A. lendu*

Apatema olivascens (Cassin)

Parisoma olivascens CASSIN, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 52 (type locality: Camma R., Gaboon).

Alseonax olivascens NEUMANN, 1914, Jour. Ornith., pp. 156, 157. SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 76. BATES, 1930, Handbook of the birds of West Africa, p. 328. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 400. CHAPIN, 1932, Amer. Mus. Novitates, no. 570, p. 11 (Medje; Semliki Valley). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 216. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 568 (Saidi).

Alseonax sylvia SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 243 (Moera; Ukaika; Mawambi-Irumu).

Alseonax olivascens olivascens GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 198 (Kartushi).

SPECIMEN: Medje, male, May 11.

ADULT MALE: Iris dark brown; maxilla black, mandible light yellowish gray; feet light brownish, claws dusky.

DISTRIBUTION: From the Gold Coast through heavy forests to the Cameroon, Gaboon, and Congo, eastward to the Semliki Valley. Examination of Cassin's type, as well as of Reichenow's type of *sylvia* from Spanish Guinea and the small series in the British Museum, fails to reveal any subspecific variation.

The dimensions of this rare flycatcher are: wing, 69–77 mm., tail, 53–60; culmen to base, 13–15; metatarsus, 14–17. Its bill is

somewhat deeper than that of most species of *Alseonax* or *Muscicapa*, and I prefer to retain the genus *Apatema* Reichenow.

It was long evident from the range that this must be a bird of heavy forests. But our single example from Medje was trapped by a native, and not until November 7, 1926, did I actually see the species alive. Then in a deep ravine in the virgin forest of the Semliki, 10 miles east of the old post of Beni, I found two of them, perching on boughs about 30 feet up and making short rapid flights. One proved to be a virtually adult female, the other an immature male with greater wing-coverts and innermost secondaries still broadly tipped with pale rufous.

The male from Medje was in breeding condition in May, but breeding may be expected to continue through most of the year, for Bates[1] in the Cameroon took specimens with gonads enlarged in July, October, and December. The nest has not been found.

My examinations of three stomachs showed pieces of small beetles and other insects, as well as two small caterpillars.

Apatema lendu (Chapin)

Alseonax lendu CHAPIN, 1932, Amer. Mus. Novitates, no. 570, p. 11 (type locality: Djugu, west of Lake Albert).

DISTRIBUTION: Known only from the type, which was secured in woods at about 5500 feet. Thus it is probably restricted to mountain forest, and only further collecting will show whether it extends southward.

Despite some resemblance to *A. olivascens*, this flycatcher is darker brown above, grayer beneath, and has a distinctly smaller bill. There is also a narrow but distinct pale gray line above the dusky lores. The type, an adult male, has the wing 77 mm., tail 59, culmen to base 14, metatarsus 17. Its iris was of a warm brown color; bill blackish brown, shading to light gray on base of mandible, skin of gape chrome-yellow; feet dull bluish gray, claws blackish gray. Taken on August 16, the bird was in non-breeding condition.

KEY TO THE SPECIES OF *Alseonax* IN THE CONGO

1. Upperparts brown, with a faint wash of gray at most ..... *A. adustus*
   Upperparts uniform bluish gray or ashy gray 2
2. Distal half of mandible dusky, feet blackish ..... *A. epulatus*

[1] 1911, Ibis, p. 522.

Mandible wholly yellowish, or dusky only at very tip; feet yellowish in life, very pale in dried skins.....*A. seth-smithi*

Alseonax epulatus (Cassin)

Butalis epulatus CASSIN, 1855, Proc. Acad. Nat. Sci. Philadelphia, vol. 7, p. 326 (type locality: Moonda R., Gaboon).

Alseonax fantisiensis O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 392 (40 miles northwest of Fort Beni, 3000 ft.); 1917, Ibis, p. 83.

Alseonax epulatus fantisiensis REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 301 (Mawambi).

Alseonax flavipes SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 244 (in part. Moera; Ukaika).

Alseonax epulatus GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 201 (Kartushi). SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 77. SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 199 (Temvo; Makaia Ntete); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 110 (Poko). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 400. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 217, fig. 64. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 568 (Saidi).

SPECIMEN: Avakubi, female, November 11.

ADULT FEMALE: Iris dark brown; base of mandible and corners of mouth yellow, rest of bill black; feet black.

DISTRIBUTION: Forested regions from the Gold Coast to the Cameroon, the Mayombe, and the vicinity of Beni in the eastern Congo. There was formerly much confusion between *A. epulatus* and *A. seth-smithi*, but Cassin's type of *epulatus* in the Academy of Natural Sciences of Philadelphia is plainly of the species with blackish feet, lighter gray color above, and indistinct dark striping below.

Though the ranges of the two species overlap broadly, the dark-footed *epulatus* appears to frequent the borders of clearings, perching on bare twigs or swinging vines. It is far less numerous in the eastern Congo than the yellow-footed *seth-smithi*, and the latter prefers the heavy shade of the forest.

In addition to the published records, I have seen specimens of *A. epulatus* from Bosobangi (Christy), Avakubi (Schubotz), and the Beni-Irumu road (Phillips). Brother Joseph Hutsebaut tells me that he has taken one at Titule. But I am surprised at the lack of any record from the Kasai, and at never having seen one myself at Lukolela, though Schouteden secured specimens in the Mayombe.

Bates[1] in the Cameroon found several nests during March, April, and July in the midst of large masses of dry leaves and trash that collect in strong spider webs. The nest proper was a small cup, lined with fine fibers. Broods of two nestlings were seen, but no eggs. Once at least the webs were still inhabited by spiders.

Alseonax seth-smithi (Van Someren)

Pedilorhynchus epulatus seth-smithi VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 96 (type locality: Budongo Forest, Uganda).

Alseonax minima EMIN, 1894, Jour. Ornith., p. 169 (old Irumu).

Alseonax (an *minima* ?) EMIN, 1894, *in* Flower, Proc. Zool. Soc. London, pp. 600–602 (Ipoto).

Alseonax epulatus O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 392 (30–40 miles northwest of Beni, 3000 ft.); 1917, Ibis, p. 82 (Libokwa; Bambili). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 301 (Lenda R.; Mawambi; Avakubi).

Alseonax flavipes BATES, 1911, Ibis, p. 522 (type locality: Camma R., Gaboon). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 224 (in part. Moera; Ukaika); 1924, idem, vol. 38, p. 76. GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 202 (Kartushi; Lesse; Kampi-na-Mambuti; Simbo). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 401. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 218. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 110 (Bondo Mabe; Poko).

Alseonax sp. SCHOUTEDEN, 1914, Rev. Zool. Africaine, vol. 3, p. 266 (Kilo).

Pedilorhynchus comitatus SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 256 (in part. Beni; Moera; Kinawa; Kilo).

Pedilorhynchus stuhlmanni SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 257 (Kokoba; Moera).

Alseonax flavitarsus BATES, 1937, Bull. Brit. Ornith. Club, vol. 57, p. 100 (new name for *A. flavipes* Bates preoccupied). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 893.

Alseonax batesi GRANT AND M.-PRAED, 1940, Bull. Brit. Ornith. Club, vol. 60, p. 65 (new name for *A. flavipes* Bates preoccupied).

SPECIMENS: Batama, male, September 16. Avakubi, two males, June 23, July 7; female, January 7. Ngayu, two males, July 27, December 10; two females, December 10, 11.

ADULTS OF BOTH SEXES: Iris dark brown; maxilla black save for the sides of its base, which, like the corners of mouth and whole of mandible, are yellow; feet yellow.

DISTRIBUTION: Heavy forests from Fernando Po and southern Cameroon southward to the Gaboon and eastward to the Uelle,

[1] 1909, Ibis, p. 30; 1930, Handbook of the birds of West Africa, p. 330; 1936, Ibis, p. 817.

Ituri, Semliki Valley, and the Budongo Forest in Uganda. At Santa Isabel on Fernando Po, José Correia collected several specimens, which do not differ appreciably from those of the mainland. The name *seth-smithi* was proposed for a supposedly darker Uganda race, and later the name *flavipes* Bates was found to be preoccupied by *Alseonax flavipes* Layard, 1875, of Ceylon.

While not yet reported from the Mayombe, the vicinity of Lukolela, or the northern Kasai, this small slaty flycatcher with yellow feet is a common bird of the northeastern Congo forest and even in the Semliki Valley right to the base of Ruwenzori. A number of specimens from the region of Beni were accidentally reported under the names *Pedilorhynchus comitatus* and *stuhlmanni*. I have also collected it at Angumu.

About Avakubi it is frequently seen in virgin forest where narrow paths are heavily shaded by high trees. In such places the birds perch within 2 to 10 yards of the ground, never more than four together, and make short flights in the usual flycatcher manner. They are tame and very silent; never have I seen one come out into an open clearing.

Nests were discovered in the vicinity of Manamama and Ngayu on May 1 and July 28. One was at a height of 25 feet over a road tunneling through the forest, the other in a fork of a small tree overhanging a forest brook, 10 feet up. These nests were large, loose cups made entirely of green moss such as hangs from boughs in the most humid places. Each held two young birds, with rather copious natal down of yellowish brown color.

A similar nest described by Bates[1] was lined with lichen (*Usnea*), and its two eggs were dull greenish white, indistinctly clouded and marked all over with faint rufous and grayish mottlings. They measured 17 by 13.5 mm. I have no doubt that *Alseonax seth-smithi* nests throughout the year, for we took specimens with enlarged gonads in January, July, September, and December. As for their food, I never noticed anything other than small insects.

Alseonax adustus subadustus Shelley

Alseonax subadustus SHELLEY, 1897, Ibis, p. 542 (type locality: Nyika Plateau, west of L. Nyasa).

Alseonax subadusta NEAVE, 1910, Ibis, p. 124 (Busanga on Lualaba R., 2800 ft.; Lufira R., 3700 ft.; Kambove, 4500 ft.).

[1] 1911, Ibis, p. 522.

Alseonax adustus subadustus SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 398. SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 286 (Elisabethville). FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 280 (Kipushi in Katanga).

DISTRIBUTION OF THE SPECIES: Southern Cape Province and Natal northward mainly in highlands to Angola, Katanga, the Kivu region, and East Africa to northern Abyssinia; also westward to Mt. Cameroon and Fernando Po.

Grote in 1936[1] listed 17 races as valid, but many of these are difficult to distinguish. Grant and Mackworth-Praed[2] would restrict the number of eastern African subspecies to five.

The species *adustus* is the type of the genus *Alseonax* Cabanis, admittedly very similar to *Muscicapa*. I retain *Alseonax* in order to include in it *A. epulatus* and *A. seth-smithi*, because they have such short, broad bills.

In tropical Africa the races of *A. adustus* are usually highland birds, but here and there they seem to descend to levels of 3000 feet or even lower. It would be superfluous here to discuss the characters of most of them, since only about four live in or near the Congo. The nominate form, in South Africa, has the wings 63–69 mm. long. *A. a. subadustus*, ranging from Southern Rhodesia to the Katanga, to Uhehe, and to Uluguru in eastern Africa, is slightly smaller and more grayish. Its wings measure 61–68 mm.

Alseonax adustus angolensis Reichenow, rather widely distributed in the western highlands of Angola, is similar in size to *adustus*, having wings 64–69 mm., but is lighter and grayer above and pale grayish on breast. It may possibly reach the southern Congo border.

In East Africa and the Kivu the upperparts become browner, the underparts more often washed with buff. *A. a. subtilis*, a dark form, with wings 59–64 mm., occupies the highlands from the vicinity of Baraka north to Ruwenzori. *A. a. pumilus*, a trifle lighter in color, is found through the lowlands from the southwest corner of Lake Victoria to the vicinity of Lake Albert, and thence apparently to Aba. An allied form, *A. a. grotei* Reichenow, occurs near Bozum in French Equatorial Africa but is not likely to reach the Ubangi River.

[1] Anz. Ornith. Gesellsch. Bayern, vol. 2, p. 375.

[2] 1940, Ibis, pp. 326–329, 518.

For the representatives in Abyssinia one may consult Friedmann,[1] and for those in the Cameroon area Bannerman[2] and Serle.[3]

Alseonax adustus subadustus is not uncommon in the savanna woods of the Upper Katanga and has been taken as low as 2800 feet on the Lualaba River. Neave noted that it was sometimes a member of a bird party, but more often it sits quietly except when pursuing some passing insect. The voice is a short, shrill chatter. In Nyasaland Benson found the bird from 2000 feet up to 6500 feet, especially in riparian evergreen scrub and on the outskirts of mountain forest.

Nesting begins in October, and the nest is a small cup composed of beard lichen with a soft lining of pappus and even feathers, set in a fork at about 20 feet, or in the jagged end of a broken branch. Two eggs found by Belcher were described as green with many obscure markings of light brown, measuring 17 by 12.5 mm.

[*Alseonax adustus angolensis* Reichenow]

Alseonax angolensis REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 458 (type locality: Angola).

? *Alseonax* ? *angolensis* SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 338 (Tshisika).

This rather large grayish race was discovered by Schütt somewhere in northern Angola, and later collected by Ansorge, Boulton, and Bowen at a number of localities in the Angolan highlands. It may reach some point on the southern Congo border, though Schouteden was in doubt as to the identity of the bird he recorded from Tshisika in the southern Kasai. I, too, have examined it and find it to be a female in very worn plumage, with wing only 63 mm., so it cannot be distinguished from *A. a. subadustus*.

Alseonax adustus pumilus Reichenow

Alseonax pumila REICHENOW, 1892, Jour. Ornith., pp. 32, 218 (type locality: Bukoba, west shore of L. Victoria).

Muscicapa murina HARTERT, 1899, *in* Ansorge, Under the African sun, app., p. 339 (Fajao in Unyoro).

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[1] 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, pp. 217–220.

[2] 1936, The birds of tropical West Africa, vol. 4, pp. 211–214.

[3] 1950, Ibis, p. 602.

Alseonax murinus pumilus REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 459 (Lendu, west of L. Albert).

Alseonax murinus ssp. GROTE, 1920, Ornith. Monatsber., p. 114 (Lendu).

Muscicapa (Alseonax) minima djamdjamensis GROTE, 1924, Jour. Ornith., p. 514 (vicinity of L. Albert).

Alseonax minimus pusillus SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 110 (Uelle).

Alseonax minimus pumilus FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 218. M.-PRAED AND GRANT, 1940, Ibis, p. 327.

SPECIMEN: Aba, immature female, July 14.

FEMALE: Iris dark brown; bill dusky brown, with base of mandible pale buff; feet dusky brown.

DISTRIBUTION: Lower elevations in and near Uganda, from Lake Burigi to Mabira, Masindi, and Aba in the northeast corner of the Congo. This is a browner bird than *subadustus* but not so dark as *subtilis* of the mountain areas of the Kivu and Ruwenzori. Its wings measure 57–64 mm. A specimen taken by Emin at Songa on the Lendu Plateau probably belongs here.

The single example from near Aba was the only one I saw in the Upper Uelle. It was perched in a tree on top of a rocky hill near the village of Ibu, a few miles south of the post. The elevation there could scarcely exceed 3300 feet.

A nest found by Emin in a low tree on Ikuru Island in Lake Victoria, October 24, contained two eggs, 18 by 12 and 18 by 13 mm. One of them was described by Reichenow as greenish white, spotted with reddish brown.

Alseonax adustus subtilis Grote

Alseonax murinus subtilis GROTE, 1920, Ornith. Monatsber., p. 114 (type locality: forest north of Beni, Semliki Valley). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 199 (Kibati; Burunga; Mt. Mikeno, 3400–3700 m.; Mt. Karisimbi, 3500 m.). SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 317 (Nya-Muzinga).

Muscicapa infulata HARTLAUB, 1891, Abhandl. Naturwiss. Ver. Bremen, vol. 12, p. 15 (Mssukali in Semliki Valley). EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 310 (Uvamba).

Alseonax infulatus REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 457 (in part. "Ukondju").

Alseonax pumilus O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 391 (Mubuku Valley, 5000–10,000 ft.; Mokia, 3400 ft.; Butahu Valley, 4000 ft.).

Alseonax murinus pumilus REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 301 (Rugege Forest; west Ruwenzori, 2500 m.; forest north of Beni). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 243

(northwest of L. Tanganyika, 2000 m.). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 256.

Muscicapa (Alseonax) minima subtilis GROTE, 1924, Jour. Ornith., p. 514 ("Semliki district").

Alseonax minimus pumilus SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 399 (in part. Ruwenzori). JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 890 (in part. Ruwenzori; perhaps Kivu).

Alseonax minimus subtilis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 399. BERLIOZ, 1936, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 8, p. 329 (Mbwahi). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 118; 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 339 (forest west of Astrida). PETERS AND LOVERIDGE, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 256 (Idjwi I.).

DISTRIBUTION: From the Ruwenzori Range and the eastern border of the Congo forest near Beni southward through the highlands of the Kivu to the Rugege Forest and the vicinity of Baraka.

This is a slightly darker form than *pumilus*, and its wings measure 59 to 64 mm. It is characteristic of mountain forests, and not common at levels below 4000 feet, even in the neighborhood of Beni. How high it will go on the higher mountains depends on the nature of the vegetation. On the west slope of Ruwenzori I noticed it only from 6000 to 7500 feet, usually at edges or openings of the forest. It was common on the highlands west of Lake Edward from 4600 feet up, and we have a very dark example from Mohanga, 6000 feet.

On the central Kivu Volcanoes it is numerous amid the open *Hagenia* woods around 11,000 feet, perching on the limbs of the large trees, and doubtless ascends to 12,000 feet, while frequent also along the lower edge of the mountain forest near 7000 feet. Grauer collected specimens on Idjwi Island and the mountains northwest of Baraka, as well as one at 120 kilometers west of Lake Tanganyika.

A short season of reproduction is not to be expected, but two birds in condition to breed were taken on Ruwenzori in November and December, while on Mt. Kandashomwa Rockefeller and Murphy found a nest on July 4. This was a small cup set in some thick moss on a liana, 12 feet above a small waterfall at 7650 feet. Only one egg had been laid, very pale blue-green, finely speckled with light rufous all about the blunt end; it measured 18.0 by 13.0 mm. The complete set would surely be two.

Three newly fledged young were taken by Grauer near Baraka in November.

KEY TO THE SPECIES OF *Muscicapa* IN THE CONGO

1. Upperparts distinctly bluish gray ..... *M. cassini*
   Upperparts brown or grayish brown 2
2. Upperparts rather grayish brown, forehead streaked; lower surface whitish, with faint dark streaks, at least on chest 3
   Upperparts darker brown, no streaking on forehead; throat and abdomen whitish, chest often crossed by a gray-brown band, but no streaking ever present there ..... *M. aquatica*
3. Wing 71–77 mm., culmen to base only 13–14.5 mm. ..... *M. gambagae*
   Wing usually 78–92 mm., culmen to base 16–18 mm. ..... *M. striata*

Muscicapa aquatica infulata Hartlaub

Muscicapa infulata HARTLAUB, 1880, Proc. Zool. Soc. London, p. 626 (type locality: central Africa, latitudes 2°–5° N., longitudes 31°–32° E.; a specimen mentioned from Magungo); 1881, Abhandl. Naturwiss. Ver. Bremen, vol. 7, pp. 85, 98. EMIN, 1887, Mitth. Ver. Erdkunde Leipzig (1886), p. 114 (Tunguru). SCHWEINFURTH AND RATZEL, 1888, Emin Pascha, eine Sammlung von Reisebriefen, p. 166 (south of Mahagi). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 127.

Alseonax infulatus O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 391 (Mokia, 3400 ft.). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 301 (in part. Kasenyi). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 243 (in part. Beni). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 256 (Buwissa; Mutiba; Bulaimu; Lesse).

Alseonax infulatus infulatus GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 200 (Angi on L. Edward). CHAPIN, 1932, Amer. Mus. Novitates, no. 570, p. 10 (Upper Uelle District; L. Albert). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 117 (Bitshumbi, 925 m.; Ngesho, 2000 m.).

Alseonax aquaticus infulatus SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 400 ("Ruwenzori"). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 110 (Faradje).

SPECIMENS: Nzoro, female, April 24. Faradje, male, July 2; female, juvenile female, October 8.

ADULT MALE: Iris dark brown; bill dusky brownish, corners of mouth yellow; feet blackish brown.

DISTRIBUTION OF THE SPECIES: From the Gambia across the Sudan to Tonga on the White Nile, then southward to the shores of Lake Victoria and the open country of the eastern Congo, the Lualaba River above Kasongo, the Luapula, Lake Bangweolo,

the Lukanga Swamps in Northern Rhodesia, and supposedly the north end of Lake Nyasa.

Muscicapa aquatica aquatica Heuglin, described from the Wau River in the Bahr-el-Ghazal, ranges thence westward to the Chad area and the Gambia.

It is a grayish brown bird without a noticeable breast band; wings 67–71 mm. *M. a. infulata* is darker brown above, with a rather distinct brownish area on the chest, and wings 64–69 mm. It extends from Lake No to the Upper Uelle, Lake Edward, the Kagera River, the northern shores of Lake Victoria, and the Kavirondo District.

Muscicapa aquatica ruandae is similar but a little larger, with wings 68–76 mm. It occupies the highlands about Lake Kivu and extends eastward to the Mwanza District south of Lake Victoria. *M. a. lualabae* is smaller, wings 62–66 mm., a trifle lighter above, and with little indication of any breast band. This race certainly occurs along the Lualaba River near Lake Kisale and on the Luapula near Kasenga. I cannot believe that birds of Lake Bangweolo are *ruandae*, as has been stated, and can only point out that Reichenow found his specimen from Langenburg on Lake Nyasa to be light-colored above.

Specimens collected in the Lukanga Swamps, west of Broken Hill in Northern Rhodesia, by I. R. Grimwood are larger than *lualabae*, males having wings 68 and 71 mm. long. The breast band is no more evident than in *lualabae*, while throat and lower breast are even whiter. These I have named *M. a. grimwoodi*.[1]

The nominate race, *aquatica*, while reported from the Bahr-el-Ghazal Province and the Bamingui River, has not yet been found anywhere along the Ubangi River. *M. a. infulata* is rather local in the Upper Uelle, because it is so partial to ponds bordered by papyrus. I doubt if I saw over half a dozen near Faradje in more than two years. In Uganda and on the western shore of Lake Albert these flycatchers are more numerous, always restricted to the vicinity of swamps with reeds or papyrus. One was collected in a papyrus swamp at 5500 feet near Masikini on the Lendu Plateau.

In the Semliki Valley, to my surprise, we did find a few near the Butahu River amid elephant grass well away from water. Again

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[1] Chapin, 1952, Bull. Brit. Ornith. Club, vol. 72, p. 22 (Lake Suye).

around the shores of Lake Edward the race *infulata* is common, south to Kabare. Pairs of birds, sometimes with their offspring, are the rule. They perch on low bushes or reeds, scarcely calling at all, and chase insects on the wing.

Breeding, in the Uelle, must take place between July and October, during the rains. Likewise at Kasenyi, we took two breeding males in late August. On Lake Edward I should expect the breeding season to come several months earlier.

Jackson has told how in Uganda he found that this bird regularly lays in empty nests of *Textor jacksoni*, *Textor castanops*, and other weavers, after relining them with feathers. The eggs are two, pale blue, spotted with reddish brown, and measure 17–17.5 by 12 mm.

Muscicapa aquatica ruandae (Gyldenstolpe)

Alseonax infulatus ruandae GYLDENSTOLPE, 1922, Bull. Brit. Ornith. Club, vol. 43, p. 36 (type locality: Bufundi, Kigezi District, Uganda); 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 200; 1926, Arkiv Zool., vol. 19, no. 1, p. 60 (Ngoma). CHAPIN, 1932, Amer. Mus. Novitates, no. 570, p. 11 (L. Bunyoni; L. Mutanda; L. Kivu; Luofu). FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 282. SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 117 (L. Magera, 2000 m.); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 339 (Kibingo).

Alseonax infulatus REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 301 (in part. Mugarura I.; Kisenyi; Usumbura). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 243 (in part. Ishangi).

Alseonax infulatus ngomae GYLDENSTOLPE, 1922, Bull. Brit. Ornith. Club, vol. 43, p. 36 (type locality: Ngoma); 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 201.

Alseonax infulatus ugomae SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 76 (L. Kivu).

Alseonax aquaticus ruandae SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 400 (Kigezi District; L. Kivu; L. Bangweolo?). SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 317; 1933, idem, vol. 22, p. 376 (Nyundo; Byihayi); 1935, idem, vol. 27, p. 402 (Mulungu). BANGS AND LOVERIDGE, 1933, Bull. Mus. Comp. Zool., vol. 75, p. 188 (Ujiji on L. Tanganyika). BERLIOZ, 1935, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 7, p. 161 (Kadjudju). JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 893. PETERS AND LOVERIDGE, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 256 (Mushongero).

Alseonax infulatus gnomae FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 282.

DISTRIBUTION: Highlands of the Kivu area, from Luofu southwest of Lake Edward, to Ruanda; also to the Mwanza District, and southward to Ujiji on the east side of Lake Tangan-

yika. This race has been said to occur also at Lake Bangweolo, but specimens from the Luapula River do not bear out that great extension of range.

In the main, this is a large highland race, with wings usually exceeding 70 mm., and it may be of interest that an unusually large race of *Calamocichla rufescens* lives in the same swamps with it. Yet it has been reported on good authority from Ujiji, and a specimen from the Mwanza District, south of Lake Victoria, has the wing 71 mm. long.

A few specimens from the lower Ruzizi Valley and the region of Baraka have the wings only 68–71 mm., but they are best referred also to *ruandae*, and show no approach in color to *lualabae*. On the other hand, Grauer's specimens from the Kagera Valley must be referred to *infulata*.

In every way the race *ruandae* behaves like *infulata*, and is mainly restricted to watery situations with a fringe at least of papyrus, reeds, or elephant grass. It is a common bird near the houses at Kisenyi. Four males collected in March and April at Luofu and in the Kigezi District were ready for breeding, and I do not doubt that old weaver-bird nests are used.

Muscicapa aquatica lualabae (Chapin)

Alseonax infulatus lualabae CHAPIN, 1932, Amer. Mus. Novitates, no. 570, p. 10 (type locality: Kiyuyu, Lualaba R., southeast Congo; also from Kadia and near Kiabo).

Alseonax infulata NEAVE, 1910, Ibis, p. 125 (L. Bangweolo).

Alseonax aquaticus ruandae LYNES AND SCLATER, 1934, Ibis, p. 40 (L. Bangweolo). WINTERBOTTOM, 1939, Revised check list of the birds of Northern Rhodesia, p. 50. WHITE, 1944, Ibis, p. 147 (Luapula R.).

Alseonax infulatus SCHOUTEDEN, 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 46 (Nkole, L. Moero).

Alseonax aquaticus infulatus LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 77 (Kasenga). BRELSFORD, 1947, Ibis, p. 74.

DISTRIBUTION: Swampy areas near the Lualaba River in the region of Lake Kisale, to Lake Moero, the Luapula River, and probably Lake Bangweolo. It is possible that the Bangweolo birds do not agree exactly, but we now have a skin from Kasenga on the Luapula which lacks any breast band and has a wing of 65 mm. Lynes (1938) referred a pair from Kasenga to *infulata* and stated that Neave's Bangweolo specimen was similar. White (1944) gave the wing lengths of three Luapula birds as 67, 69,

and 71 mm. The status of the Langenburg record remains in doubt.

In the papyrus swamps near Lake Kisale, in August, 1927, I found the race *lualabae* very numerous, perching over the water's edge in the same way as the other races. That was plainly not their season for reproduction. In January, 1934, at Kasenga, Lynes found a pair busily completing their nest inside another of a weaver, probably *Icteropsis pelzelni monacha*.

Muscicapa cassini Heine

Muscicapa cassini HEINE, 1859, Jour. Ornith., p. 428 (type locality: Camma R., Gaboon).

Muscicapa lugens SHELLEY, 1890, Ibis, p. 158 (Yambuya). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 126. EMIN, 1894, Jour. Ornith., p. 169 (old Irumu). FLOWER, 1894, Proc. Zool. Soc. London, p. 603 (Urumbi). HARTERT, 1900, Novitates Zool., vol. 7, p. 37 (Yanga on Ituri R.). O.-GRANT, 1917, Ibis, p. 87 (Ubangi and Uelle rivers).

Alseonax lugens REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 453; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 300. SCHOUTEDEN, 1914, Rev. Zool. Africaine, vol. 3, p. 266 (Kilo); 1918, idem, vol. 5, p. 256; 1924, idem, vol. 12, p. 419 (Ruki R. above Eala); 1925, idem, vol. 13, p. 16 (Bolobo–Mongende).

Alseonax melanoptera NEAVE, 1910, Ibis, p. 125 (Kalungwisi R.).

Cichlomyia lugens BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 422 (north Belgian Congo).

Alseonax cassini BATES, 1926, Ibis, p. 585. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 401. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 111 (Kotili; Buta; Panga). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 219, fig. 65 (Tomi R.; Likandi R.; Guruba R.; Voro on Uelle R.). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 894. LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 77 (Luilu R.; Kilembe; Tshikapa). BERLIOZ, 1939, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 11, p. 528 (Zémio on Mbomu R.). WINTERBOTTOM, 1939, Revised check list of the birds of Northern Rhodesia, p. 50.

Parisoma lugens lugens BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 66 (Bangui).

SPECIMENS: Bengamisa, female, September 30. Avakubi, four males, March 3, September 16, November 5; female, September 16; two juvenile males, September 16. Ngayu, female, immature male, December 19. Gamangui, juvenile female, January 30. Niangara, female, March 4. Dungu, female, March 1. Nzoro, male, August 1.

ADULTS OF BOTH SEXES: Iris dark brown, bill and feet black.

DISTRIBUTION: Forested regions and their borders from Liberia

to the Cameroon, Congo, and Toro in Uganda, then south to northern Angola, the Kasai, and even the Kalungwisi River east of Lake Moero.

This ashy gray flycatcher is seldom or never seen away from watercourses, and while characteristic of the equatorial forest it follows the rivers out into the savanna districts, provided their banks are sufficiently wooded. Thus it reaches the Mbomu River, the upper Kibali, the southern Kasai, and even the region of Lake Moero.

Perching most often on bare snags projecting above the water, these birds seemed to have no call except a trilling effort void of melody that may replace a song. "Trill-trill-tree" it sounded to me, but so weak as to carry only a few yards.

Breeding seemed not to be restricted to any one season, nor did it depend on the level of the streams, for we found nests at low water and at flood time. North of the Equator breeding adults or nestlings were taken in January, March, September, and December. Nests were observed on the Ituri and Aruwimi in March and September. The usual site is a cavity in some old stub of a fallen tree projecting above the water, but forks in similar snags, boughs of trees extending far out over the water, or logs serving as supports for bridges are also utilized.

An old nest of *Hirundo nigrita* sometimes serves as a foundation for the cup-shaped abode of the flycatchers, built of plant stems, moss, and perhaps a few small twigs. The lining may include rootlets, strips of dry grass, or a little plant down. Two eggs are laid, pale grayish green spotted with light rufous brown. Dimensions of a set from Bomili, September 11, are: 18.0 by 13.3 and 18.5 by 13.3 mm.

The birds' food, taken on the wing, consists wholly of insects. Even small dragonflies are taken, and their wings added unintentionally to the lining of a nest.

Muscicapa gambagae (Alexander)

Alseonax gambagae ALEXANDER, 1901, Bull. Brit. Ornith. Club, vol. 12, p. 11 (type locality: Gambaga, Gold Coast hinterland). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 111 (Dramba).

Muscicapa gambagae gambagae SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 396 (Shari R. district). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 205, fig. 60.

Muscicapa gambagae GRANT AND M.-PRAED, 1940, Bull. Brit. Ornith. Club, vol. 60, p. 64.

SPECIMEN: Aba, male, December 14.

ADULT MALE: Iris dark brown; maxilla dusky brown, mandible buff; feet dusky brown.

DISTRIBUTION: From the Northern Territories of the Gold Coast eastward across Nigeria and French Equatorial Africa to Darfur, Sennar, British Somaliland, and the highlands of southwestern Arabia. Southward, it reaches the upper Tana and Northern Guaso Nyiro in East Africa, Mt. Elgon, Budongo in Uganda, and the northeastern border of the Congo.

I have never been able to see any real difference between specimens from western Africa and those of Somaliland, so I am unable to uphold the subspecies *somaliensis* Bannerman. The wing length varies from 71 to 77 mm., and the whole appearance recalls *Muscicapa striata*, although the streaking is more diffuse, and the bill very much shorter. As Bates so aptly put it, "We may think of *M. gambagae* as being like the ancestors of *M. striata* before it acquired its wing-development in connection with its migratory habit."

Yet, although Lynes regarded *gambagae* as resident in Darfur, I have wondered if it may not migrate a little to the south of its breeding range. About Aba I did not see any in July, and yet in December I believed I observed several on the hills where my single specimen was taken. They perched on small trees in the open, but I was very poorly provided with ammunition. Five specimens in the American Museum from Uganda and Kenya Colony were all taken between November and April, while Schouteden's from Dramba was secured in February.

The breeding season in the northern part of the range is known to begin in March, for in that month Bates[1] found a nest in northern Cameroon in a hollow in the broken end of a small dead tree, 12 or 15 feet above the ground. It was composed of fine grass with cocoon silk and a little seed-down inside, all held together by cobwebs. The two eggs were greenish white, covered all over with faint gray and more evident yellowish brown freckling; they measured 15.5 by 13 and 17.5 by 13 mm. In Darfur Lynes collected a spotted juvenile in mid-July.

Muscicapa striata striata (Pallas)

Motacilla striata PALLAS, 1764, *in* Vroeg, Catalogue raisonné, Adumbratiunculae, p. 3 (type locality: Holland).

[1] 1927, Ibis, p. 31, pl. 2, fig. 15 (egg).

Butalis grisola SHARPE AND BOUVIER, 1877, Bull. Soc. Zool. France, vol. 2, p. 479 (Boma). BOCAGE, 1881, Ornithologie d'Angola, pt. 2, p. 547. DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 33 (Umangi).

Muscicapa grisola REICHENOW, 1887, Jour. Ornith., pp. 300, 305 (Manyanga; Leopoldville); 1903, Die Vögel Afrikas, vol. 2, p. 449; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 300 (Kisenyi; L. Kivu). SHELLEY, 1888, Proc. Zool. Soc. London, p. 26 (Kabayendi); 1890, Ibis, p. 158 (Yambuya). SHARPE, 1890, *in* Jameson, The story of the rear column, p. 415. EMIN, 1892, Zool. Jahrb., vol. 6, p. 148 (south end of L. Albert); 1894, Jour. Ornith., p. 163 (Ndussuma). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, pp. 126, 127 (upper Kemo R.). NEAVE, 1910, Ibis, p. 126 (Kambove). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 247 (Baraka; northwest of L. Tanganyika, 2000 m.; Beni; Beni-Mawambi). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 256 (Kibati). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 126 (Tunguru).

Muscicapa ficedula LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 11 (Mukimbungu). JÄGERSKIÖLD, 1940, Göteborgs Mus. Årstryck, p. 98 (95 km. northwest of Lusambo).

Muscicapa striata striata SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, pp. 339, 398 (Macaco; Belenge; Kabambaie; Ngombe in Kasai; Kwamouth); 1924, idem, vol. 12, p. 271 (Kidada); 1926, idem, vol. 13, p. 199 (Ganda Sundi); 1932, idem, vol. 21, p. 317 (Ngoma; Lulenga); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 110 (Mauda; Adra; Abimva; Dramba; Buta; Titule; Api); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 118 (Mugunga; Ngesho; Rutshuru); 1941, Rev. Zool. Bot. Africaines, vol. 34, pp. 266, 365 (Kasenyi); 1943, idem, vol. 37, p. 271 (Gabiro). GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 20. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 202, fig. 59. LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 115 (Kilembe; Banda; Idiofa; upper Lufira R.). CREUTZ, 1941, Vogelzug, vol. 12, pp. 1, 5, map (Moanza in Kwango District). GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 181. VERHEYEN, 1947, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 23, no. 10, p. 2 (Musosa); 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, pp. 30, 70 (Buliha near Wanzalabana).

Muscicapa ficedula ficedula GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 197 (Kabare).

Muscicapa striata DE SCHAECK, 1927, Bull. Soc. Zool. Genève, vol. 3, fasc. 6, p. 80 (Luluabourg). DE RIEMAECKER, 1927, Rev. Zool. Africaine, vol. 14, p. 281 (Elisabethville). SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 286.

SPECIMENS: Stanleyville, male, November 8. Avakubi, male, November 1; immature male, November 8. Nzoro, female, April 11. Faradje, two males, October 17; female, September 29.

ADULTS: Iris dark brown; bill brownish black, base of mandible light gray, corners of mouth yellow; feet blackish.

DISTRIBUTION OF THE SPECIES: Breeds all across Europe and into Asia as far as Lake Baikal and the northwestern Himalayas,

also in Persian Baluchistan, Palestine, the Mediterranean Islands, and Northwest Africa to southern Morocco.

Hartert and Steinbacher[1] recognized four races; Dunajewski,[2] seven. *M. s. striata* is the deep-colored race breeding from western Europe to eastern Poland, and it is replaced farther east by the paler *M. s. neumanni* Poche, which reaches central Siberia, and on the south Asia Minor. *M. s. sarudnyi* Singirewski may be still paler, and its home is in Transcaspia, Persia, and more eastern areas. *Muscicapa s. balearica* Jordans breeds in the Balearic Islands; *M. s. tyrrhenica* Schiebel on Corsica and Sardinia; and Dunajewski separated the northwest African race as *M. s. berliozi*.

The nominate race of Europe migrates southward in great numbers to Africa, reaching the Cape Province, and is thus a common visitor to all parts of the Congo. The paler eastern *neumanni*, and *sarudnyi* as well, visit eastern Africa in their winter season, going at least as far as Mikindani and the northern end of Lake Nyasa.

Muscicapa striata balearica is believed to have reached the Ivory Coast, southern Cameroon, and Southwest Africa; and *M. s. berliozi* possibly the Cameroon, too. But it is certain that few individuals of any other race but nominate *striata* will be found in the Belgian Congo. All my specimens were of that race, with the possible exception of the female from Faradje, which seems a little light-colored above. Individuals banded in Switzerland and in Sweden have been recovered in the southern Belgian Congo.

Of all the Palearctic migrants to tropical Africa this is one of the most familiar and courageous. It is not deflected by the forests of the Equator, but stops over in their clearings and winters largely to the southward. The earliest date of arrival in my experience was at Faradje, September 23, 1912. In Kenya Colony it is said to arrive in the third week of September, and in the Kasai District Schouteden first noted the species on September 28. Few remain in the northern Congo from December to February, but at Boma I observed several spotted flycatchers in January. The northward migration takes place in March and

[1] 1934, Die Vögel der paläarktischen Fauna, Ergänzungsband, no. 3, p. 229.

[2] 1939, Acta Ornith. Mus. Zool. Polonici, vol. 2, pp. 529–560, map.

early April, and my latest date for the Uelle District was April 11, 1912.

Though occurring widely in the highlands of the eastern Congo, up to 6200 feet at least, the spotted flycatcher has not been noted on the very high peaks. Perching quietly in some low tree, it seems almost to signal its name as it raises and lowers the tail at intervals. While in Africa it does not alter its well-known diet of insects, captured on the wing. One we found to have eaten black ants, probably of the winged brood.

[*Muscicapa striata balearica* Jordans]

Muscicapa striata balearica JORDANS, 1913, Falco, vol. 9, p. 43 (type locality: Mallorca I. in Balearics).

Breeding only on the Balearic Islands, this race is distinguished by the faint streaking of its chest and the wide whitish borders of the feathers on the fore crown. The whole upperparts are often pale.

The population cannot be large, so it would not be expected that many wintering birds could be recognized in Africa. Yet its migration seems to take it to the Ivory Coast, southern Cameroon, and apparently Southwest Africa.[1] If that is confirmed, then the Balearic race is certain to cross the western Congo.

Whether or not the pale Asiatic *neumanni* ever reaches the eastern border of the Congo is not yet known.

KEY TO THE SPECIES OF *Ficedula* EXPECTED IN THE CONGO

1. Upper surface largely black, though forehead, patches on wings, and sometimes the hind neck are white (males in breeding plumage).....2
   Upper surface mainly brown or gray-brown.....3
2. Hind neck black like back, sides of neck also black; next to outermost primary usually a little shorter than the fifth (from outer side)....*F. hypoleuca*
   Hind neck with complete white collar, or sides of neck at least white; next to outermost primary as long as fifth (from outer side) or even longer .....*F. albicollis*
3. Next to outermost primary usually shorter than the fifth; upperparts rather brown, not paler on hind neck.....*F. hypoleuca*
   Next to outermost primary equal to or longer than the fifth; upperparts often tinged with grayish, or with a faint suggestion of a light collar..... .....*F. albicollis*

[1] Hoesch and Niethammer, 1940, Jour. Ornith., Sonderheft, p. 280.

Ficedula hypoleuca hypoleuca (Pallas)

Motacilla hypoleuca PALLAS, 1764, *in* Vroeg, Catalogue raisonné, Adumbrationculae, p. 3 (type locality: Holland).

Muscicapa atricapilla BOCAGE, 1877, Ornithologie d'Angola, pt. 1, p. 202. SHARPE AND BOUVIER, 1877, Bull. Soc. Zool. France, vol. 1, p. 308 (Landana).

Muscicapa atricapilla atricapilla HARTERT, 1907, Die Vögel der paläarktischen Fauna, vol. 1, p. 480, figs. 87, 88 ("Congo").

Muscicapa hypoleuca hypoleuca GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 22 ("Congo R.").

Ficedula hypoleuca hypoleuca SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 397. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 207, fig. 61 (Kaga Djirri; Ubangi R.).

DISTRIBUTION OF THE SPECIES: Breeding from Great Britain across Europe to Tomsk in Siberia, and southward to Spain and North Africa. *F. h. hypoleuca* occupies all the northern areas, *F. h. iberiae* Witherby southern Spain and Portugal, and *F. h. speculigera* Bonaparte the region from northern Tunisia to Morocco. The last-named form has a broader white forehead in the male, a little more white on the wing than *hypoleuca*, while *iberiae* is intermediate.

Thus far only the race *hypoleuca* has been found wintering in tropical Africa, mainly in grasslands north of the Equator, from the Gambia to the Ubangi River and thence to the north end of Lake Albert, and Mt. Elgon. South of the forest it has been reported only from Landana. But females and autumn males of *F. hypoleuca* are not readily distinguished from those of *F. albicollis*, and two races of the latter also migrate to the Congo.

The winter quarters of *hypoleuca* certainly include the northern savannas of the Belgian Congo, and probably the Lower Congo as well. Near Mahagi on March 22 and 26, 1942, J. M. Vrydagh collected a male and a female of *F. h. hypoleuca*, though in that region the species *albicollis* would seem of more frequent occurrence.

The pied flycatcher may be expected to arrive in our territory early in October and to leave toward the end of March. It is more restless than *Muscicapa striata* and often perches in rather high trees.

Ficedula albicollis albicollis (Temminck)

Muscicapa albicollis TEMMINCK, 1815, Manuel d'ornithologie, p. 100 (Europe; restricted type locality: Thuringian Forest).

Muscicapa collaris OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, pp. 126, 127 (upper Kemo R.).

Muscicapa albicollis albicollis GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 22 (Toro; Katwe). STRESEMANN, 1944, Ornith. Monatsber., p. 114 (Luluabourg; Tembwe).

Ficedula albicollis SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 110 (Buta). DUPOND, 1938, Gerfaut, vol. 28, p. 183 (Mbalaka, near Djuma in Kwango District). JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 887 (between Hima and Mubuku rivers in Toro). WINTERBOTTOM, 1939, Revised check list of the birds of Northern Rhodesia, p. 49 (Mbala country in Northern Rhodesia). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 65 (upper Kemo R.).

Ficedula albicollis albicollis BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 209, fig. 61 (Uganda). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 118 (Kibati, 2000 m.).

SPECIMEN: Faradje, male, September 27.

MALE IN AUTUMN: Iris brown, bill and feet blackish.

DISTRIBUTION OF THE SPECIES: Breeding from France, Gothland, and Galicia eastward to Hungary, southern Russia, the Caucasus, and Iran. The nominate European race reaches southern Russia, but from Greece to Iran and the Caucasus it is replaced by the subspecies *semitorquata*, with white collar of the male interrupted behind, which has often been regarded as a southeastern race of *F. hypoleuca*.

Ficedula albicollis albicollis migrates southward into Africa, and there has been found during the northern winter from the northern Gold Coast Colony across the Sudan to the Uelle District and western Uganda, likewise south of the equatorial forest in the Kwango and Kasai districts, and farther east in the Kivu, on Lake Tanganyika, in Northern Rhodesia, and at Mphunzi in Nyasaland.

Adult males of *albicollis* are easily identified, so the records from Mphunzi, the Mbala country of Northern Rhodesia, and Tembwe are quite reliable. My autumn male from Faradje was identified as *albicollis* by Hartert, and Father Callewaert's specimen from Luluabourg, October 10, 1924, is clearly of that same race. The Rothschild Collection contains females taken by Rudolf Grauer at Kisenyi (October 11) and near Baraka (October 4) which I am inclined to call *albicollis*, though they were labeled at Tring as *semitorquata*.

A female *albicollis* banded in Hungary in May, 1937, was recovered at Mbalaka, near Djuma in the Kwango District in

April, 1938. So the winter range of *F. a. albicollis* extends at least to the Kwango and Kasai districts, then southeastward well beyond the Katanga. The collared flycatcher thus ranges much farther south than the pied, though resembling it closely in behavior. My single example was flitting about actively in trees and manioc bushes near a native village. No other was ever seen, but the majority must pass on well to the south of the Uelle. The first arrivals are to be expected in late September, while some departures in the spring may be delayed until mid-April.

Ficedula albicollis semitorquata (Homeyer)

Muscicapa semitorquata VON HOMEYER, 1885, Zeitschr. Ges. Ornith., vol. 2, p. 185 (type locality: Caucasus).

DISTRIBUTION: Breeds from Greece and Asia Minor to Iran and the Caucasus. This form is so nearly intermediate between *albicollis* and *hypoleuca* that it is very hard to know of which species it is a race. Stresemann[1] has argued rather convincingly in favor of attaching *semitorquata* to *F. albicollis.*

In the autumn *F. a. semitorquata* migrates into eastern Africa, where it is now known from the eastern side of Lake Albert and even as far south as Iringa in southwest Tanganyika Territory. In the Rothschild Collection there are two males in full plumage collected by L. M. Seth-Smith in the Budongo Forest, Uganda, on February 22, and at Butiaba on March 15, 1907. The same collector secured a female at Masindi, Uganda, on September 16, 1906, but I do not feel certain that it is *semitorquata* and not *F. a. albicollis.*

In any case, I am convinced that *semitorquata* travels along the west shore of Lake Albert as well as the east,[2] and that it is to be expected also in the Kivu District of the Congo. Probable dates of passage are well indicated by the Uganda records. This race is scarcely to be expected in the central or western part of the Congo.

KEY TO THE SPECIES OF *Pedilorhynchus*

Wing less than 69 mm. in length; lores dark gray, but a pale supraloral line extends from the nostril to the upper eyelid; under tail-coverts gray, darker than abdomen ..... *P. comitatus*

[1] 1926, Ornith. Monatsber., pp. 4–9; 1944, idem, pp. 116, 117.

[2] A female collected by Vrydagh at Bogoro, September 23, 1942, may be *semitorquata.* It is in the Congo Museum.

Wing 70 mm. or longer; lores uniform gray, no light supraloral line; under tail-coverts whitish like abdomen.....*P. tessmanni*

Pedilorhynchus comitatus comitatus (Cassin)

Butalis comitatus CASSIN, 1857, Proc. Acad. Nat. Sci. Philadelphia, vol. 9, p. 35 (type locality: Muni R., Gaboon).

Pedilorhynchus comitatus comitatus SCLATER, 1924, Bull. Brit. Ornith. Club, vol. 45, p. 45 (Landana; Ndala Tando); 1930, Systema avium Aethiopicarum, pt. 2, p. 413. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 237.

Pedilorhynchus comitatus SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 199 (Temvo).

DISTRIBUTION OF THE SPECIES: Lowland forests from Sierra Leone and French Guinea east to Uganda and south to northern Angola. Subspecific variation is slight. *P. c. aximensis* Sclater,[1] with the most white on throat and abdomen, is restricted to Upper Guinea. *P. c. comitatus*, somewhat darker, extends from Ndala Tando in Angola north to the Gaboon and probably to the forested Cameroon. It is true that some Cameroon specimens have little whitish beneath, but Reichenow described his *camerunensis* as a white-throated form and in 1911 admitted it was not valid. The darker Cameroon specimens cannot be separated from *P. c. stuhlmanni*, which has usually been regarded as occupying the forests of the Upper Congo and of Uganda east to Mabira.

The birds of the Lower Congo are certainly nominate *comitatus;* they have been noted there only in the Mayombe Forest. I watched a pair in second-growth woods at Ganda Sundi, in 1931; and Schouteden collected specimens at Tshela and Makaia Ntete which I have examined. In behavior this race is exactly like the birds of the eastern Congo.

Pedilorhynchus comitatus stuhlmanni Reichenow

Pedilorhynchus stuhlmanni REICHENOW, 1892, Jour. Ornith., pp. 34, 132 (type locality: Manyonyo, Uganda, near the present Kampala); 1903, Die Vögel Afrikas, vol. 2, p. 460 (Ruwenzori, 2100 m.); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 302. SALVADORI, 1915, Ann. Mus. Civ. Genova, ser. 3, vol. 6, p. 280 (Kasai). SASSI. 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 247 (Moera).

Alseonax comitata SHELLEY, 1888, Proc. Zool. Soc. London, p. 25 (Bellima).

Pedilorhynchus comitatus REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 461; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 301. SASSI, 1916,

[1] 1924, Bull. Brit. Ornith. Club, vol. 45, p. 45 (Axim, Gold Coast).

Ann. Naturhist. Mus. Wien, vol. 30, p. 247 (Moera; Mawambi; Ukaika; Irumu). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 256 (in part. Biogo; Zambo; Buwissa).

Alseonax comitatus O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 392 (Mpanga Forest, 5000 ft.; Beni); 1917, Ibis, p. 83 (Gudima, Upper Uelle District; Ituri R.).

Pedilorhynchus comitatus stuhlmanni SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 338 (Basongo); 1924, idem, vol. 12, p. 419 (Eala); 1935, idem, vol. 27, p. 402 (Kako R. bridge); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 112 (Bondo Mabe; Abimva); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 118 (Rutshuru; Mabenga). SCLATER, 1924, Bull. Brit. Ornith. Club, vol. 45, p. 45; 1930, Systema avium Aethiopicarum, pt. 2, p. 413. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 568 (Ekibondo). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 912.

Pedilorhynchus stuhlmanni stuhlmanni GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 203 (Kartushi; Lesse; Bopu).

? *Pedilorhynchus stuhlmanni* SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 77 (Moera).

Pedilorhynchus comitatus ssp. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 112 (Panga).

SPECIMENS: Banalia, male, September 21. Avakubi, two males, March 12, November 16; female, February 17; immature female, November 7. Medje, male, March 9; female, April 4. Pawa, female, July 15.

ADULTS OF BOTH SEXES: Iris dark brown; bill black; feet bluish.

DISTRIBUTION: Forests of Uganda, from Mabira to Toro, and presumably the whole Upper Congo forest as well. Uganda specimens are not darker than those of the Ituri or than some from the southern Cameroon.

On the north *stuhlmanni* reaches Bondo and Koloka in the Uelle District, where Schubotz collected specimens, and the vicinity of Niangara. To the south, Grauer and Rockefeller and Murphy collected it in the Manyema forest; Salvadori reported it from the Kasai; and Schouteden from Basongo and Eala. There is really so little difference between *stuhlmanni* and *comitatus* that the boundary will be hard to draw. Perhaps the birds of the eastern Congo forest have the least white on the underparts.

Although common in the Mpanga Forest in Toro near 5000 feet and said to have been taken on west Ruwenzori above 6000 feet, this slate-colored flycatcher is really a lowland bird. We found it widely distributed, but nowhere very numerous and nearly

always in tangled second-growth woods, not uncut forest. It perches within 20 feet of the ground, and I never heard its voice. Bates has described a little song, accompanied by spreading of the tail and turning from side to side. The food is of insects captured during short flights.

We took breeding specimens in the northeastern Congo only in March and September, but in the southern Cameroon Bates found that reproduction continued through the whole year. At Bombwa on the Aruwimi River, September 21, I watched a male of this flycatcher climb several times into an empty nest of *Icteropsis p. monacha* suspended from the tips of grasses 8 feet high. A pair of the weavers had another nest near by. It was George L. Bates[1] who discovered in the Cameroon that *Pedilorhynchus comitatus* regularly uses deserted nests of weavers such as *Hyphanturgus nigricollis* and *Textor cucullatus*. It adds a slight lining of plant fibers and lays two eggs of terra-cotta color or light olive brown, sometimes speckled with brown. These measure 19–21 by 13–13.5 mm.

The young of this species in juvenal dress are colored much like the adults and lack the conspicuous spotting that is so characteristic in the genus *Muscicapa* and many of its relatives.

Pedilorhynchus tessmanni Reichenow

Pedilorhynchus tessmanni REICHENOW, 1907, Ornith. Monatsber., p. 147 (type locality: Alén, northern Spanish Guinea). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 247 (Mawambi). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 413 ("Semliki district"). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 241, fig. 72.

Pedilorhynchus brevirostris BATES, 1909, Bull. Brit. Ornith. Club, vol. 25, p. 28 (type locality: Assobam, on Bumba R., Cameroon).

SPECIMENS: Panga, male, female, September 13. Avakubi, male, November 5.

ADULTS OF BOTH SEXES: Iris dark brown, bill black, feet dark bluish gray.

DISTRIBUTION: Forested regions from the Gold Coast to southern Cameroon and eastward to Mawambi in the Ituri District. Not known from south of Spanish Guinea.

This larger slate-colored flycatcher has much more white on throat and abdomen than does *P. comitatus*. The wings of our

[1] 1907, Ibis, p. 447; 1908, Ibis, p. 565; 1911, Ibis, pp. 523, 524.

specimens measure 70, 73, and 75.5 mm., tails 53, 55, 57 mm., culmen to base 15, 16, 16 mm. In size they agree with the seven West African examples I have examined, but the latter seemed somewhat darker gray on the upperparts than these from the northeast Congo.

Nowhere does the species seem common; I never saw it alive. My helper Nekuma told me that the three he shot were all in pairs in second growth near roads or clearings. In the stomachs I found the remains of insects, and also two caterpillars.

Artomyias fuliginosa fuliginosa Verreaux

Artomyias fuliginosa VERREAUX, 1855, Jour. Ornith., p. 104 (type locality: interior of the Gaboon). SHARPE AND BOUVIER, 1877, Bull. Soc. Zool. France, vol. 2, p. 479 (Shiloango R.). REICHENOW, 1887, Jour. Ornith., p. 305 (Leopoldville); 1903, Die Vögel Afrikas, vol. 2, p. 462; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 302 (Avakubi). SHARPE, 1890, *in* Jameson, The story of the rear column, p. 400 (Aruwimi R.). SHELLEY, 1890, Ibis, p. 158 (Bolobo). EMIN, 1894, Jour. Ornith., p. 169 (old Irumu). HARTERT, 1900, Novitates Zool., vol. 7, p. 37 (Diapanda). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 33 (Kisantu). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 402 (Beni; 40 miles northwest of Beni; Mpanga Forest, 5000 ft.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 255 (Moera; Mawambi; Ukaika; Mawambi–Irumu). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 257 (Zambo; Marissawa; Kokola; Mutiba); 1920, idem, vol. 7, p. 190 (Temvo); 1923, idem, vol. 11, p. 338 (Luebo); 1925, idem, vol. 13, p. 15 (Kunungu); 1926, idem, vol. 13, p. 199 (Ganda Sundi; Makaia Ntete). BANNERMAN, 1923, Ibis, p. 716.

Artomyias fuliginosus SHELLEY, 1888, Proc. Zool. Soc. London, p. 26 (Nambiri Brook).

Artomyias fuliginosa minuscula GROTE, 1922, Anz. Ornith. Gesellsch. Bayern, no. 7, p. 58 (type locality: Beni, Semliki Valley). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 415. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 112 (Mauda; Panga; Buta; Poko). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 568 (Saidi). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 913. BOUET, 1942, Ois. Rev. Française Ornith., new ser., vol. 12, p. 134 (Uelle District). VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 71 (Butahu R.).

Artomyias fuliginosa minuscula SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 78.

Artomyias fuliginosa fuliginosa GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 205 (Lesse; Abeli; Kampi-na-Mambuti; Simbo). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 413. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 242, fig. 73.

Artomyias fuliginosa minuscula GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 181 (Luluabourg).

SPECIMENS: Avakubi, male, December 8; two immature males, October 15, December 8; immature female, November 8. Gamangui, male, February 4; female, February 1. Niangara, male, December 9.

BOTH SEXES: Iris dark brown; bill black; feet brownish black to blackish.

DISTRIBUTION: Forested areas from Southern Nigeria and the Cameroon to northern Angola and the Kasai, eastward to the Upper Uelle, Mabira in Uganda, and Ukerewe Island in Lake Victoria.[1] It has been proposed to divide the species in two races, because birds from the eastern Congo have the wings averaging about 5 mm. shorter than those of the Cameroon. I find that seven specimens from the Gaboon have wings 78–86 mm., five from the Cameroon 80–88 mm., and 20 from the eastern Congo 78–84 mm. Seven from Canhoca and Golungo Alto in Angola have wings 77–86 mm. Cameroon birds do seem large, but eastern Congo birds have wings only 2 mm. shorter than those of the region from which *fuliginosa* was described. It would be impossible to draw limits for the proposed race *minuscula*. Nor do I see any color character by which it could be recognized, although birds with rather rufous underparts may be somewhat more frequent in the Upper Congo.

At Oguta, Southern Nigeria, Ansorge collected three adults, all apparently males, with wings only 77–79 mm. Rather boldly striped below, they all seem to have the ground color of throat, belly, and under tail-coverts more whitish than is noticeable in any other part of the range. Neither in size nor in color do they show any approach to *A. ussheri* Sharpe of Upper Guinea.[2] In the Congo the variation among adults in color of underparts is considerable, yet I have been unable to relate it either to sex or to age. The juvenal plumage is blackish brown with small buff or whitish spots over the whole body.

A common bird in all the lowland forests of the Congo, *Artomyias fuliginosa* extends out in the gallery forests to the Mangbetu country on the north, to Uganda on the east, and to Luluabourg in the Kasai. Bohndorff collected it at Kasongo and Kibondo in the Manyema. It avoids the heavy shade of forest

[1] Grote, 1921, Jour. Ornith., p. 417.

[2] These birds have now been described as *A. f. chapini* Vaurie, 1951, Bull. Brit. Ornith. Club, vol. 71, p. 37.

undergrowth, and thus is usually seen around the edges of clearings. I have found it also at Lukolela, at Angumu, and as high as 5300 feet near Djugu on the Lendu Plateau, but not on the higher mountains.

The short bill, long wings, and slightly forked tail all combine to give *Artomyias* a swallow-like appearance. The ancestors of the swallows must have had similar proportions. But these birds are not sustained flyers like swallows. We used to see them perched on some dead branch, anywhere from 20 feet up to the tops of high trees, darting out to snap at insects, and often returning to the same perch. There they sat motionless again, save for the occasional raising and lowering of the tail. Several are often seen together. Nothing but insect food was ever found in their stomachs.

The only nest of the species yet found was a shallow cup of moss, grass, and rootlets, placed at the end of a slender bough, 20 feet up. It was described by H. F. Marshall from Southern Nigeria and contained two eggs.[1] Birds with enlarged gonads were taken in the Ituri in February and October, and young with spots on some part of the plumage have been collected there in May, September, and December. Nesting evidently continues through all the rainy period, with perhaps a break during the driest season, for two of our adults in December were nonbreeding.

Megabyas flammulatus flammulatus Verreaux

Megabyas flammulata VERREAUX, 1855, Rev. Mag. Zool., p. 348 (type locality: Rivière d'Angers, north of Gaboon River).

Megabias flammulatus OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 126.

Megabias atrilatus DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (in part. Kisantu).

Megabyas flammulatus SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 200 (Kai Bumba in Mayombe).

Megabyas flammulatus flammulatus BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 65 (upper Kemo R.).

DISTRIBUTION OF THE SPECIES: Sierra Leone to Fernando Po, the Cameroon, and Lower Congo, thence eastward to Uganda and to Kakamega in western Kenya Colony. In Uganda and the Upper Congo there is more blackish on the rectrices of females, so that *M. f. flammulatus* is the form occupying Upper

[1] Bannerman, 1951, The birds of tropical West Africa, vol. 8, p. 397.

Guinea and the region from the Cameroon to the Lower Congo. *M. f. aequatorialis* occupies the remaining eastern regions and is said to extend to Ndala Tando in northern Angola.

Records of the nominate race from the Congo are few, but Malbrant tells me he has collected it near Brazzaville. Dybowski's specimen from the Kemo River was a male, so there may be some doubt as to its race.

In Southern Nigeria, according to Marchant,[1] this flycatcher was usually found with mixed bird parties in the lower canopy of the forest. One note was a rather melodious "tuwick," given in flight, and the other a double whistling call. Nest and eggs seem to be unknown, but nestlings have pale spots over all the upperparts.

Megabyas flammulatus aequatorialis Jackson

Megabias aequatorialis JACKSON, 1904, Bull. Brit. Ornith. Club, vol. 15, p. 11 (type locality: Kazi, near Entebbe, Uganda). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 400 (Mpanga Forest, 5000 ft.).

Megabias flammulata SHELLEY, 1888, Proc. Zool. Soc. London, p. 27 (Tingasi).

Megabias atrialatus REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 468 (Kasongo).

Megabias atrilatus DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (in part. Banalia; Kasongo).

Megabyas atrialatus aequatorialis REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 303 (northwest of Beni; west Ruwenzori, 1500 m.). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 257 (Beni; Assumba).

Megabyas flammulatus aequatorialis SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 340 (Makumbi; Kamaiembi; Kabambaie; Ngombe in Kasai); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 112 (Buta; Poko; Bondo Mabe; Kotili; Panga); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 119 (east of Rutshuru Plain). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 417. JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 919. VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 71 (Semliki R.; Djobulo R.; Bwanandeke).

Megabias atrialatus acquatorialis SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 77 (Moera; Mawambi).

Megabyas flammulatus CAVE, 1938, Sudan notes and records, vol. 21, p. 179 (Bendere near Doruma).

SPECIMENS: Avakubi, male, June 11. Medje, male, August 15; two females, August 1; immature male, August 1; juvenile male, April 6. Faradje–Aba, male, female, November 27; immature male, December 2.

[1] 1942, Ibis, p. 170.

ADULTS OF BOTH SEXES: Iris scarlet; bill black; feet purplish pink, with dusky brown claws.

DISTRIBUTION: Forests from Kakamega in Kenya Colony to the eastern Congo, Kasai District, and northern Angola. On the north it occupies gallery forests near Niangara and between Faradje and Aba and even extends a little into the southern Bahr-el-Ghazal Province. To the eastward I have seen it in the forest just east of the Rutshuru Valley. But it is distinctly a low-land bird, scarcely venturing above 5000 feet.

In the Ituri this large flycatcher is a bird of second-growth

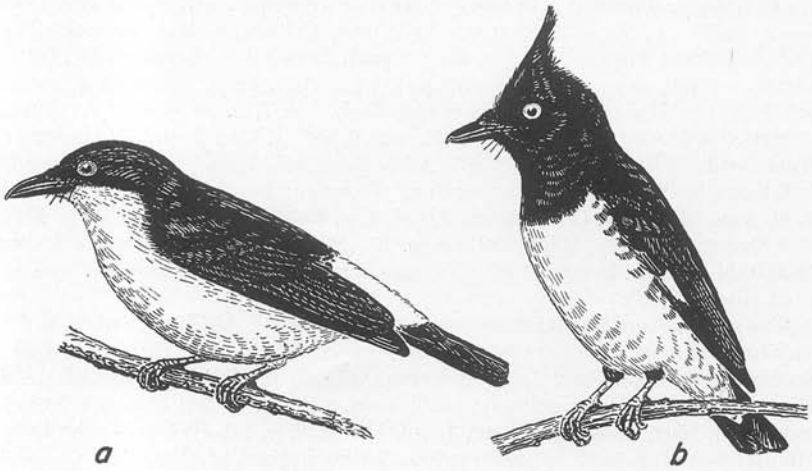

FIG. 25. A. *Megabyas flammulatus*, male. B. *Bias musicus*, male.

woods rather than of virgin forest, seen singly or in small family groups. The male bears a striking resemblance to *Dryoscopus senegalensis*, while the brownish female with mottled breast looks totally different. *Megabyas* sits more contentedly on its perch and wags its tail from side to side.

The season of reproduction, in the northeastern Congo, extends from March to October or November, through all but the driest months. The nest has not been found, but a nestling brought by natives in early April is much less rufous than the adult female, and the upperparts are largely grayish brown, with a large spot of soiled white at the tip of each feather. The greater wing-coverts, secondaries, and rectrices are margined with rufous;

the underparts are entirely white save for grayish lateral borders on many feathers of the chest.

In four stomachs I found only insects, including beetles, a cicada, and a brown grasshopper.

Bias musicus musicus (Vieillot)

Platyrhynchos musicus VIEILLOT, 1818, Nouveau dictionnaire d'histoire naturelle, vol. 27, p. 15 (type locality: Malimbe, Portuguese Congo).

Bias musica HARTLAUB, 1850, Beitrag zur Ornithologie Westafrica's, p. 25 ("Congo").

Bias musicus SHARPE AND BOUVIER, 1876, Bull. Soc. Zool. France, vol. 1, p. 308 (Nemlao). SHARPE, 1879, Catalogue of the birds in the British Museum, vol. 4, p. 142; 1890, *in* Jameson, The story of the rear column, p. 401. HARTLAUB, 1884, Jour. Ornith., p. 27. REICHENOW, 1887, Jour. Ornith., p. 305 (Leopoldville); 1903, Die Vögel Afrikas, vol. 2, p. 469 (in part. Aruwimi R.; Leopoldville; Ituri). SHELLEY, 1890, Ibis, p. 159 (Yambuya). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 126. HARTERT, 1900, Novitates Zool., vol. 7, p. 36 (east of Avakubi). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 33 (Mayombe; Kisantu; Banalia). LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 11 (Kingoyi). O.-GRANT, 1908, Ibis, p. 306 (north of Kasongo; Ponthierville). SALVADORI, 1909, Ann. Mus. Civ. Genova, ser. 3, vol. 4, p. 322 (Buta–Dungu). SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 77 (Moera; Beni; Mawambi; Ukaika; Mawambi–Irumu). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 65 (Brazzaville).

Bias musicus musicus BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 420 (Beritio near Angu; Arebi); 1936, The birds of tropical West Africa, vol. 4, p. 252. SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 398 (Kwamouth); 1925, idem, vol. 13, p. 16 (Kunungu); 1926, idem, vol. 13, p. 200 (Makaia Ntete); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 112 (Poko; Medje; Buta; Mauda). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 418.

Bias musicus femininus GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 214 (in part. Kampi-na-Mambuti).

SPECIMENS: Leopoldville, female, July 5. Bengamisa, male, September 28. Avakubi, four males, April 3, May 7, August 10, 20. Gamangui, male, February 17. Medje, three males, April 10, August 5, 24; two females, January 19, March 8. Babonde, female, July 19.

ADULTS OF BOTH SEXES: Iris yellow; bill black; feet light yellow (of a dull lemon tint), with blackish claws.

DISTRIBUTION OF THE SPECIES: Sierra Leone to the Cameroon, Congo, northern Angola, and Uganda; then in the coastal region of East Africa from the eastern base of Mt. Kenya and Takaungu south to Inhambane.

Females of *B. m. musicus* are deep rufous on wings and lower

back and somewhat washed with pale rufous beneath. This nominate form, with wings 84–92 mm., ranges from the lower Congo River to the Cameroon and Upper Guinea and also to a large portion of the Upper Congo. In Uganda and along the eastern Congo border the females may be a little lighter above, more whitish on the breast, so *B. m. femininus*, with wings 82–90 mm., has usually been recognized there, but the line of demarcation is vague.

In northern Angola females are probably still more whitish on the whole underparts, and *B. m. pallidiventris*, with wings 84–89 mm., has sometimes been said to range eastward to Lake Tanganyika and even to reach Inhambane in Portuguese East Africa. It might therefore be expected in the southern Congo, even though Kasai specimens have been referred to the nominate subspecies. Females from the Manyema are certainly rather whitish below, but they might well be called *femininus*.

Bias musicus changamwensis of East Africa, from Kenya Colony south near the coast to Mozambique, is more distinct. The wings of both sexes measure 80–86 mm., and females are markedly pale in coloration.

It seems probable that the eastern limit of nominate *musicus* is near the eastern edge of the Congo forest and that females from the Kasai and Manyema are somewhat whiter beneath. No sharp lines can be drawn. This crested flycatcher is a conspicuous bird in all the lowland forest area, most apt to be seen about clearings and the banks of rivers. In savanna districts it haunts the strips of woods near watercourses and was taken by Schubotz near Faradje in the Uelle.

Going generally in pairs, it keeps to the higher trees. The male often delivers his noisy song as he flies slowly along with quivering wings at a level with the tree tops, the white patches on his primaries showing plainly. "We-chip! chip-chip!," he calls, often repeatedly, and winds up with a rising series of excited notes: "We-chip! chip-chip! . . . We-chip! chip-chip! chee-chee-chee-ee-ee!" Along the Nepoko River I once saw a female dip several times in the water as though bathing.

From dissections it was clear that the breeding season comes during the rains and north of the Equator lasts from April to August at least. At Lukolela I saw a fledgling with its parents on December 25, and from Luluabourg we have one taken on November 10.

A nest found at Babonde in July was a rather shallow cup, placed on a stout horizontal bough between some upright twigs, 35 feet from the ground. Composed externally of dry strips of bark and rotten wood, bound over with white silky fibers, it was lined with stems of leaves or flowers. The two young, with eyes still closed, were destitute of down and had skin more or less greenish all over. Both parents stayed near by, the male calling vociferously. A similar nest described by Bates[1] held two eggs, pale bluish green with small spots of umber-brown and lilac-gray all over, as well as a zone of larger blotches around the larger end. One measured 21 by 16 mm. The soft juvenal plumage resembles that of the adult female, but is thickly spotted with buff over the whole back and crown.

Bias musicus femininus Jackson

Bias feminina JACKSON, 1906, Bull. Brit. Ornith. Club, vol. 16, p. 87 (type locality: Toro, western Uganda).

Bias musicus REICHENOW, 1887, Jour. Ornith., p. 309 (Kibondo); 1903, Die Vögel Afrikas, vol. 2, p. 469 (in part. Kibondo; Karevia). EMIN, 1894, Jour. Ornith., p. 164 (Bumanja).

Bias femininus SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 258 (Bolovet; Lesse).

Bias musicus femininus GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 214 (in part. Kartushi). JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 920. VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 71 (Bambia near Lutunguru).

Bias musicus feminina SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 119 (Molindi R.).

DISTRIBUTION: Forest patches of Uganda from Mabira westward, and the eastern edges of the Congo from Nioka and Lake Albert south to the Manyema District. There seems to be no sharp division between the races *femininus* and *musicus,* and we can only assume that the greatest change is near the eastern edge of solid forest in the Congo. Yet specimens from the Manyema forest seem very like *femininus.*

Behaving in every way like the nominate race, these birds scarcely occur at levels above 5500 feet, though rather common at the west base of Ruwenzori and in forest galleries near the post of Rutshuru. In Uganda the nesting season is said to extend from March to September. In the Manyema, south of the Equator,

[1] 1911, Ibis, p. 526.

Rockefeller and Murphy found a nest as early as August 29, while Rudolf Grauer collected two well-grown nestlings on January 5. The nests described from Uganda by Jackson were very like those of the western race and were placed some 12 to 20 feet up in trees in clearings. The eggs were two, grayish white with gray-brown and brown markings, measuring 20.5–21 by 15.5–16 mm.

[*Bias musicus pallidiventris* Van Someren]

Bias musicus pallidiventris VAN SOMEREN, 1921, Bull. Brit. Ornith. Club, vol. 41, p. 102 (type locality: Canhoca, northern Angola); 1922, Novitates Zool., vol. 29, p. 99 ("Angola to west Tanganyika"). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 418.

? *Bias musicus musicus* SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 340 (Makumbi; Tshikapa; Ngombe in Kasai; Luebo).

While females of this race may be a little whiter on the breast than those of *B. m. femininus*, the difference is not great, and I hesitate to extend the range eastward to the vicinity of Lake Tanganyika. In Nyasaland the species is restricted to the southern lowlands and the shore of Lake Nyasa, so it would seem likely that *B. m. changamwensis* is really the race extending southward in Portuguese East Africa.

From the Kasai District I have seen adults only of the male sex, but there is reason to suspect that females will be found more whitish beneath than those of the nominate race. They may well prove to be *B. m. pallidiventris*.

KEY TO THE SPECIES OF *Batis* IN OR NEAR THE CONGO

1. Under wing-coverts all black, except along outer border of wing.....2
   Under wing-coverts largely white, especially the longer inner ones sometimes called axillaries, although some coverts near outer edge of wing may be black.....7
2. Breast band black—adult males.....3
   Breast band rufous—females and young.....5
3. Whitish supraloral line seldom extends back of eye and does not reach temporal region.....*B. molitor*
   Whitish superciliary line better developed.....4
4. Superciliary stripe rather broad, gray of upper back tinged with olive and rufous.....*B. senegalensis*
   Superciliary stripe narrow above eye, but widening slightly toward temporal region; upper back clear gray.....*B. minor*
5. A rufous patch in center of white throat, in addition to breast band.....*B. molitor*
   No rufous patch on white throat, only a rufous breast band.....6

6. Breast band pale rufous, superciliary stripe buffy in adult....*B. senegalensis*
   Breast band deep chestnut, superciliary line narrow and whitish...*B. minor*
7. Wing more than 57 mm. long, tail at least 38 and metatarsus 18 mm.; a black chest band in both sexes.....8
   Wing less than 57 mm. long, tail usually less than 38 and metatarsus less than 18 mm.....9
8. Scapulars black; the white spot at side of forehead not continued back to eyebrow; sexes alike.....*B. diops*
   Scapulars gray, the white at side of forehead continues back toward eyebrow; female with a rusty bar on wing-coverts.....*B. margaritae*
9. Breast band dark gray.....*B. minima*
   Breast band black or rufous.....10
10. Wing not longer than 51 mm.; crown mostly black; both sexes have black breast band.....*B. ituriensis*
    Wing usually exceeds 51 mm.; crown dark gray; female has deep rufous breast band.....*B. minulla*

Batis minor nyansae Neumann

Batis minor nyansae NEUMANN, 1907, Jour. Ornith., p. 354 (type locality: Kwa Mtessa, Uganda). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 304. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 238. SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 119; 1941, Rev. Zool. Bot. Africaines, vol. 34, pp. 266, 365. PETERS AND LOVERIDGE, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 258 (Mihunga Ridge on east Ruwenzori).

Platystira senegalensis HARTLAUB, 1882, Abhandl. Naturwiss. Ver. Bremen, vol. 8, p. 197 (Langomeri). EMIN, 1919, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 2, p. 427 (Kuterma). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 3, pp. 242, 256 (Mbiambana).

Pachyprora senegalensis SHELLEY, 1888, Proc. Zool. Soc. London, p. 26 (Mundu).

Batis senegalensis DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 33 (in part. "Ituri").

Batis orientalis O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 398 (Mokia, 3400 ft.; lower Semliki Valley). SALVADORI, 1911, Ann. Mus. Civ. Genova, ser. 3, vol. 5, p. 448 (Uelle District).

Batis minor congoensis SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 250 (Kasindi).

Batis minor SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 258 (old Mission St. Gustave).

Batis bella nyanzae SCLATER AND M.-PRAED, 1918, Ibis, p. 708 (Meridi; Yambio; Yei).

Platysteira (Batis) orientalis SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 129 (Rimo).

Platystira orientalis EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 239 (Kavalli).

Batis minor nyanzae SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 422. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 316 ("Usum-

bura"); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 113 (Mauda; Dramba; Faradje; Niarembe; Mahagi Port). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 569 (Kasenyi; Ekibondo).

SPECIMENS: Niangara, three males, January 20, April 27, May 11; immature male, November 7; juvenile male, May 11. Faradje, two males, March 9, 25; female, April 2; immature female, October 26; immature male, September 9; juvenile male, juvenile female, March 25.

ADULTS OF BOTH SEXES: Iris bright chrome-yellow, bill and feet black.

DISTRIBUTION OF THE SPECIES: From northern Cameroon eastward to Eritrea and Somaliland, thence southward in grasslands to Tanganyika Territory, the eastern Congo, Kasai District, northern Angola, and the Loango Coast. *Batis minor* with its several races is so closely allied to *B. orientalis* (Heuglin) of northeastern Africa that they seem all but conspecific. Males of *minor* are more blackish on the crown, and females have the chest band deeper maroon. Both these groups are in turn nearly related to *B. senegalensis* (Linnaeus) of the western Sudan, of which the female has a light cinnamon rufous chest band.

Batis minor has been divided into half a dozen races, but the validity of some is questionable. Nominate *minor* of Southern Somaliland has wings only 51–54 mm. In Abyssinia the wings of *erlangeri* measure 60–67 mm. *B. m. nyansae* in the northeastern Congo has wings 57–60 mm., and the status of *B. m. congoensis* seems very doubtful. *B. m. suahelica* Neumann is a small race of coastal East Africa.

The range of *nyansae* is usually stated to extend from the Bahr-el-Ghazal Province and Uelle District to Uganda and the Kavirondo District. Within our limits it has been found in the Upper Uelle, on the west side of Lake Albert, and in the upper Semliki Valley. The supposed record from Usumbura lacks confirmation.

In the grasslands of the Uelle this is a common and characteristic species, to be found in pairs or small families amid the tall grass as well as in bushes and trees. Its wing beats are sometimes quite audible, and it utters short weak whistles, but no really musical song. The breeding season in this district begins in the dry period and continues into the beginning of the rains.

Nests were found in March, April, and May. They are placed

in a bush or small tree, or even in a crotch of a stump, 3 or 4 feet from the ground, and are small cups of fine vegetable material and cobwebs. Flat pieces of dark-colored bark are sometimes stuck on the outside. Two eggs are laid, whitish but covered thickly with small reddish spots, which form a wreath around the large end. One egg from Faradje measured 16.2 by 12.3 mm.

Nestlings with juvenal plumage just sprouting show no trace of any natal down. In the juvenal plumage the light markings of the upperparts are foreshadowed in buffy whitish, and the remaining parts are blackish brown, each feather with a buff tip. The under surface is white, with a dark breast band mixed with cinnamon. Immature males then assume a chestnut breast band, like that of the female, and retain it for six or seven months.

In one case I watched the male parent come twice to feed the young, without his mate appearing. The food is so invariably of insects that I find I kept no note of the stomach contents.

Batis minor congoensis Neumann

Batis minor congoensis NEUMANN, 1907, Jour. Ornith., p. 354 (type locality: Ngombi on the Congo R. [= Gombe Lutete, in the Cataracts district]). SCLATER, 1925, Bull. Brit. Ornith. Club, vol. 45, p. 54 (Lower Congo); 1930, Systema avium Aethiopicarum, pt. 2, p. 423. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 265. GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 182 (Luluabourg). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 64 (Brazzaville; upper Kemo R.).

Platystira senegalensis REICHENOW, 1887, Jour. Ornith., pp. 300, 305 (Manyanga; Leopoldville).

Batis molitor OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 126 (Brazzaville).

Batis orientalis OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 126.

Batis senegalensis REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 480 (in part. Manyanga; Leopoldville). OUSTALET, 1904, Bull. Mus. Hist. Nat. Paris, vol. 10, p. 542. DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 33 (in part. Kisantu; Lower Congo). LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 11 (Mukimbungu). BERLIOZ, 1925, Bull. Mus. Hist. Nat. Paris, vol. 31, p. 351 (Luluabourg).

Batis minulla DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 33 (in part. Mayombe).

Batis bella congoensis BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 416.

Batis bella congensis SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, pp. 339, 398 (Macaco; Kabambaie; Tshikapa; Kwamouth); 1924, idem, vol. 12, p. 272 (Kisantu; Kidada).

SPECIMEN: Kwamouth, immature female, December 19.

DISTRIBUTION: From Canhoca in northern Angola across

the Lower Congo to the Loango Coast and eastward to the Kasai District. It would seem thus to be completely isolated from *nyansae,* were it not that specimens of *congoensis* have also been reported from the grasslands of the Ubangi-Shari, north of the equatorial forest.

I doubt very much that *B. m. congoensis* can really be distinguished from *nyansae,* even though at first they may seem to occupy very different areas of the Congo. In size they are equal, and I cannot confirm the statement by Neumann that females of *congoensis* are clearer gray above.

At Leopoldville and Boma I found this flycatcher one of the common birds, as it is also in the Kasai, to judge from the number of specimens collected there. Its behavior and voice are the same as those of *nyansae.* In this southern area the species seems also to nest at the commencement of the rains. Father Callewaert obtained a nestling at Luluabourg on October 7, and our immature female taken in December was apparently little more than two months old.

[*Batis senegalensis* (Linnaeus)]

Muscicapa senegalensis LINNAEUS, 1766, Systema naturae, ed. 12, vol. 1, p. 327 (type locality: Senegal).

Batis senegalensis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 424 (Kaga Djirri in Ubangi-Shari District). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 265, pl. 9.

This species takes the place of *B. minor* and *orientalis* from Nigeria westward to Senegal, and I have difficulty in accepting the supposed occurrence at Kaga Djirri, some 25 miles west of Fort Sibut in southern Ubangi-Shari. Grote[1] mentioned no specimen in the collections made by Tessmann and Elbert in the region immediately to the west.

Batis molitor molitor (Hahn and Küster)

Muscicapa molitor HAHN AND KÜSTER, 1850, Vögel aus Asien, Afrika, no. 20, pl. 2 (type locality: Kaffirland).

Batis molitor DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, no. 3, p. 148 (L. Tanganyika); 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 33 (in part. Mpala).

Platistyra pririt SCHALOW, 1887, Jour. Ornith., p. 238 (Lufuku R.).

Batis puella SALVADORI, 1907, Boll. Mus. Zool. Anat. Comp. Torino, vol. 22, no. 570, p. 4 (Lukonzolwa).

[1] 1924, Jour. Ornith., p. 515.

DISTRIBUTION OF THE SPECIES: From eastern Cape Province and the Transvaal to northern Angola, the southern and eastern Congo, Mt. Elgon, Barsaloi in Kenya Colony, and the mouth of the Tana River.

Batis molitor molitor of South Africa ranges northward to southern Angola, Nyasaland, and the southwestern side of Lake Tanganyika. Its wings measure 57–65 mm., primaries of males are edged externally with gray-white, and females have rather deep chestnut throat spot and chest band. *B. m. puella* is scarcely different in size, but its upperparts often seem more heavily tinged with blackish, and the whitish outer margins of primaries and outer secondaries are much less evident or even wanting in males. Females often have very deep maroon on throat spot and chest. The range of *puella* extends from central and northern Angola across the southeastern Congo to Ruwenzori, the interior of Kenya Colony, and Kilimanjaro. *B. m. taruensis* Van Someren, of the dry belt just back from the coast in Kenya Colony, is smaller and colored more like *molitor*.

Along the east coast from Inhambane north to the Tana River mouth lives *B. m. soror* Reichenow, a small, pale race with throat spot and chest band of the female very light rufous.

The only part of the Congo which appears to be occupied by nominate *molitor* is the Marungu highland and the southwest shore of Lake Tanganyika. Three males collected by Rockefeller and Murphy at Ketendwe, Lubenga, and Lake Suzi are very like Nyasaland examples. Two females and a young male from Moba all have the chestnut of throat and chest much lighter than do comparable specimens from the Kivu. The altitudinal range in this region is from 2500 feet near the lake shore up to 6025 feet on the Marungu. Mixed bird parties often include these flycatchers; their behavior is like that of *puella*.

Batis molitor puella Reichenow

Batis puella REICHENOW, 1893, Jahrb. Hamburg, Wiss. Anst., vol. 10, pt. 1, p. 125 (East Africa; restricted type locality: Bussisi, south shore of L. Victoria); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 304 (Mt. Karisimbi, 2500 m.). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 398 (Mubuku Valley, 6000–8000 ft.).

Batis molitor DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 33 (in part. "Kibongo"). O.-GRANT, 1908, Ibis, p. 306 (northwest of L. Tanganyika, 3000 ft.). NEAVE, 1910, Ibis, pp. 79, 128 (Kambove, 4500 ft.; Lualaba R., 2500

ft.). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 258 (Mboka); 1923, idem, vol. 11, p. 339 (Ngombe in Kasai). WHITE, 1946, Ibis, p. 84 (Mwinilunga).

Batis molitor puella NEUMANN, 1907, Jour. Ornith., p. 355 (L. Tanganyika; L. Kivu). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 250 (northwest of L. Tanganyika, 2000 m.). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 209 (Lulenga). SCLATER, 1925, Bull. Brit. Ornith. Club, vol. 45, p. 52; 1930, Systema avium Aethiopicarum, pt. 2, p. 421. SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 287 (Elisabethville); 1932, idem, vol. 21, p. 316 (Burunga); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 119 (Mugunga; Kamatembe; Molindi R.; Kibumba). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 236. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 925. VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, pp. 31, 72 (Munigi).

Batis molitor molitor J. VINCENT, 1934, Ibis, p. 94 (in part. Congo). A. W. VINCENT, 1947, Ibis, p. 181.

DISTRIBUTION: From Angola to the Katanga, Manyema, Kivu District, northern Tanganyika Territory, in Uganda to Mt. Elgon, and in Kenya Colony north to Barsaloi. There is certainly a band of gradual intergradation with nominate *molitor*, and this may pass through the southern Katanga. But the blackness of the outer webs of the primaries of males from northern Angola and the Kivu leaves no doubt as to the distinctness of *puella*.

One example of this race is in the Rothschild Collection from Tembo Aluma on the Kwango River, very close to Belgian Congo territory, and there is one published record from the Kasai District. Specimens from the highlands near Baraka, northwest of Lake Tanganyika, are very like those of the Kivu Volcanoes and Ruwenzori. Though found at rather low levels in the Katanga and Manyema, the species becomes restricted to places above 4500 feet farther north in the Kivu. On the volcanoes it has been reported as high as 8200 feet, and I have noted it at only 4600 feet in the woods east of the Rutshuru Plain, as well as at 6200 feet on the highland northwest of Lake Edward. On east Ruwenzori Woosnam found it living between 6000 and 8000 feet; on the west side we collected it at 6900 feet near Kalongi, in the small trees of old second growth.

In the Upper Katanga, according to Neave, this flycatcher is common in savanna woods, where a pair accompanies nearly every mixed bird party. The behavior is like that of *Batis minor*, with occasional noisy wing beats and loud snaps of the bill when

capturing insects. But the voice is very different; in addition to squeaking or croaking call notes *Batis molitor* gives a fairly loud song of two or three clear whistled syllables in descending keys. It bears considerable resemblance to the whistles of *Platysteira cyanea*.

In the Upper Katanga nesting is to be expected in September and October. On Ruwenzori Woosnam reported breeding in January, a dry period; and we took a breeding female there in late December. At Kayangira in the region of Lubero another female was evidently nesting in early March.

The nest of this species is known to be a very neat cup placed in a fork or on a bough from 4 to 20 feet above the ground. The exterior has lichen stuck all over it, and the lining is made of fine threads of grass. Eggs are two, pale green spotted profusely with various shades of brown, and measuring about 16.5 by 13 mm.

Batis minulla (Bocage)

Platystira minulla BOCAGE, 1874, Jor. Sci. Nat. Lisboa, vol. 5, p. 37 (type locality: Biballa, Mossamedes Province, Angola).

Batis minulla SHARPE AND BOUVIER, 1876, Bull. Soc. Zool. France, vol. 1, p. 308 (Shiloango R.). SHARPE, 1879, Catalogue of the birds in the British Museum, vol. 4, p. 137 (Ivindo). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 126. REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 485. DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 33 (in part. Mayombe). SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 339 (Macaco; Dumbi). SCLATER, 1925, Bull. Brit. Ornith. Club, vol. 45, p. 51; 1930, Systema avium Aethiopicarum, pt. 2, p. 420. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 263, fig. 79. BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 65 (Brazzaville).

SPECIMEN: Msuata, male, July 14.

ADULT MALE: Iris bright yellow, bill and feet black.

DISTRIBUTION: From the interior of the Mossamedes region north through the western half of Angola to the Kasai, the southwestern border of the Congo forest, and the Shiloango River. *B. poensis* Alexander, of Fernando Po and adjacent regions of mainland, is much darker above, yet evidently a close ally.

Of the two specimens from Luki in the Mayombe, listed by Dubois (1905), one is *minulla*, the other *B. minor congoensis*. The two species are distinguished by the color of their under wing-coverts, and while their ranges overlap broadly, the birds may differ slightly in preference for certain types of vegetation.

I suspect that *Batis minor* lives mainly in the more open, higher lying savannas. Our male of *minulla* was taken at the border of some woods that fringed the bank of the Congo River. He and his mate were just building a nest in a crotch of a small tree recently killed by a brush fire. It was a small cup, composed of soft bark and spider webs, placed at 5 1/2 feet from the ground. It is worth noting that this was in the middle of the dry season.

Batis ituriensis Chapin

Batis ituriensis CHAPIN, 1921, Amer. Mus. Novitates, no. 7, p. 5, fig. 2 (type locality: Gamangui on Nepoko R., northeast Congo). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 211 (Beni forest; Kampina-Mambuti). SCLATER, 1925, Bull. Brit. Ornith. Club, vol. 45, p. 51; 1930, Systema avium Aethiopicarum, pt. 2, p. 421. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 113 (Buta).

SPECIMEN: Gamangui, female, February 4.

ADULT FEMALE: Iris yellow, bill and feet black.

DISTRIBUTION: From the eastern edge of the Ituri forest, near Irumu and Beni, westward at least to Buta in the Lower Uelle. Only nine specimens have thus far been taken; they show that both sexes have a broad, glossy black breast band. We cannot yet be entirely certain that these birds are specifically distinct from *B. minima* of the Gaboon. I have examined two skins of the latter in the British Museum. One of them is plainly immature, and it is barely possible that the blackish gray breast band of the other may be a sign of immaturity.

The type of *ituriensis* was an adult female, and in October, 1926, I collected an adult male at 46 kilometers north of the new post of Beni. This specimen is much blacker on hind crown and back than the type. There is no appreciable difference in size between the sexes; wings measure 49–51 mm., tails 30–37, exposed culmen 10–11.5, metatarsi 13–14.

In addition to the specimens mentioned in the references, there is one adult female in the Museum of Comparative Zoölogy collected by J. C. Phillips in 1924 between Beni and Irumu, and another specimen in the Rothschild Collection which C. F. Camburn secured in the "Ituri Forest, 3800 ft.," in 1906. There is no doubt that he worked in the region west or northwest of Irumu.

My first example was taken near an Arabisé village in forest along the Nepoko River, and during my long stay at Avakubi,

farther south, I never saw another. But during a march of eight days from Irumu to Beni in 1926 I noted three of these tiny flycatchers. They were always members of an "upper-level" bird party which kept well up in the higher boughs and might include *Scoptelus castaneiceps, Mesopicos xantholophus, Apalis nigriceps, Hyliota australis, Parus funereus, Anthreptes tephrolaema, Malimbus erythrogaster,* and a variety of other birds. Such mixed parties seemed not to move about so quickly as the common lower-level associations, but it was not at all easy to secure a tiny flycatcher like this, even after it had been recognized with the field glass.

Although my February specimen was breeding, and Gyldenstolpe obtained a bird in juvenal dress in June, it would seem idle speculation to try to fix any definite season for reproduction. In such surroundings almost any time of year might be suitable.

[*Batis minima* (Verreaux)]

Platystira minima J. AND E. VERREAUX, 1855, Rev. Mag. Zool., ser. 2, vol. 8, p. 219 (type locality: Gaboon).

Batis minima SHARPE, 1873, Ibis, p. 169. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 262.

Since this species was described from the Gaboon, no additional examples have ever been collected. In size it is about equal to *B. ituriensis*, and the latter bird may yet prove to be only the eastern representative of *B. minima*. But the type of *minima*, which I have examined in the British Museum, has a dark gray breast band, without gloss, although in most ways it seems to be virtually adult. A second specimen in the same collection is more spotted on crown and back and is undoubtedly young.

In the Gaboon *Batis minima* was said to be "found in pairs amid the bushes bordering the heavy forest," so there may be hope that it will be secured some day in the Belgian Mayombe.

Batis diops Jackson

Batis diops JACKSON, 1905, Bull. Brit. Ornith. Club, vol. 15, p. 38 (type locality: Ruwenzori); 1906, Ibis, p. 535; 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 924. REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 831; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 304 (Rugege Forest; "Nysagengua, 3000 m."; west Ruwenzori, 1800–2500 m.; northwest of L. Tanganyika). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 398 (Mubuku Valley, 6000–8000 ft.; north Ruwenzori, 7700 ft.). SASSI, 1916, Ann.

Naturhist. Mus. Wien, vol. 30, p. 250. SCHOUTEDEN, 1918, Rev. Zool. Africaine' vol. 5, p. 258; 1932, idem, vol. 21, p. 316 (Lulenga; Nya-Muzinga; Mt. Niragongo); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 119 (Bitashimwa, 1950 m.; Nyabitsindi, 2400 m.); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 339 (forest west of Astrida). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 210 (Mt. Muhavura, 3000 m.; Mt. Sabinyo, 2600 m.; Kibati; Burunga; Mt. Karisimbi, 2400 m.). SCLATER, 1925, Bull. Brit. Ornith. Club, vol. 45, p. 52; 1930, Systema avium Aethiopicarum, pt. 2, p. 421. BOULTON, 1934, Proc. Biol. Soc. Washington, vol. 47, p. 48 (Mt. Mikeno). BERLIOZ, 1936, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 8, p. 330 (Mbwahi).

DISTRIBUTION: Mountain forests from Ruwenzori and the highland northwest of Lake Edward through the Kivu District and Ruanda to the highlands near Usumbura and Baraka.

This is plainly a member of the *Batis capensis* group, but differs from the more southern forms by having the female mainly black and white, almost exactly similar to the male. In the matter of sexual dimorphism the female of *B. margaritae*, which has a black chest band, represents an intermediate condition, with rufous on the wing-coverts. In both sexes of *diops* the iris is orange or very rich yellow, with the outermost rim blackish brown all around.

The altitude range of *diops* is from about 6400 feet up to 8900 feet and occasionally 9900 feet. On Ruwenzori it scarcely ascends beyond the lower edge of the heath zone. Singly or in pairs it haunts the shade of woods and may choose to perch from 1 yard to 10 yards above the ground, though scarcely venturing into any open sunny clearing. It is a silent bird, only occasionally giving its call note, a sharp "ch-k!" or "ck-k-k-k"; and it seemed also to be the author of a low whistle lasting about a half second, to which a second bird might answer with a smacking sound, as though snapping its beak.

A female which had recently laid eggs was taken on west Ruwenzori on November 18, but nearly all the specimens we obtained there, on the highlands west of Lake Edward, and on the Kivu Volcanoes were in non-breeding condition. The nest has not yet been found, and I doubt that there is any short, definite season for breeding. I have never seen an example in juvenal dress, but a few scattered feathers retained by individuals not quite fully adult indicate that the crown and probably the back are spotted with rufous, and that there may also be some rufous on the chest and the light area of the wing.

Stomach examinations showed little except finely divided remains of insects. In one case a caterpillar some 50 mm. long had been swallowed whole.

[*Batis margaritae* Boulton]

Batis margaritae BOULTON, 1934, Proc. Biol. Soc. Washington, vol. 47, p. 47 (type locality: Mt. Moco, 6500 ft., Benguella, Angola).

Batis kathleenae WHITE, 1941, Bull. Brit. Ornith. Club, vol. 61, p. 48 (type locality: Mwinilunga, Northern Rhodesia).

Batis margaritae kathleenae WHITE, 1946, Ibis, p. 84 (Mudyanyama R. near Mwinilunga; Jiundu R. near Solwezi; Kasempa).

First discovered in the mountain forest of Moco, in Angola, this species has also been found in patches of evergreen forest at a lower level in the vicinity of Mwinilunga, Solwezi, and Kasempa in Northern Rhodesia. Whether the eastern birds differ subspecifically is not yet known.

It seems natural, from the occurrence on the Rhodesian plateau, that *B. margaritae* should show some feature tending to connect *B. diops* with the various races of *B. capensis*. *B. c. mixta* (Shelley), which extends from Kilimanjaro to Uluguru and Mt. Rungwe, north of Lake Nyasa, shows marked sexual differences in plumage, the female lacking the broad black breast-band of the male. In *margaritae* the female has a rather narrow black breast-band but differs from the male in having a rufous patch on the wing-coverts and some rufous on the flanks.

From White's investigations in Northern Rhodesia it seems probable that this interesting flycatcher will yet be found on the Belgian side of the Katanga frontier.

KEY TO THE SPECIES OF *Dyaphorophyia*

1. Underparts bright yellow, or yellow with a heavy chestnut wash on throat and fore neck, sometimes also on flanks ..... *D. concreta*
   Underparts not yellow, but largely white, with some black, glossy green, or chestnut anteriorly 2
2. Chin, throat, and fore neck mostly green-black in adult, often with chestnut patches at sides of neck ..... *D. blissetti*
   Throat white or wholly chestnut 3
3. Chin and throat white (males), breast with a broad black band 4
   Throat and upper breast chestnut (females) 5
4. Crown feathers black glossed with greenish blue, the longer ones measuring at least 8 mm. ..... *D. castanea*
   Crown feathers black with violet-blue gloss, less than 5 mm. long ... *D. tonsa*

5. Crown wholly light slate gray, its feathers lengthened as in male. . *D. castanea*
Crown wholly black, its feathers short as in male. . . . . *D. tonsa*

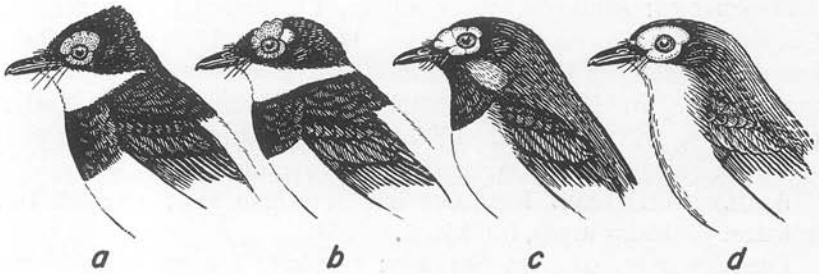

FIG. 26. Sketches of males of *Dyaphorophyia* to show eye wattles. A. *D. c. castanea*. B. *D. tonsa*. C. *D. blissetti jamesoni*. D. *D. concreta graueri*.

Dyaphorophyia castanea castanea (Fraser)

Platystira castanea FRASER, 1842, Proc. Zool. Soc. London, p. 141 (type locality: Clarence, Fernando Po).

Diaphorophyia castanea REICHENOW, 1887, Jour. Ornith., pp. 300, 305 (Manyanga; Leopoldville); 1903, Die Vögel Afrikas, vol. 2, p. 490 (Lendu; Kinyawanga); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 305 (north and northwest of Beni). SHARPE, 1890, *in* Jameson, The story of the rear column, p. 408. EMIN, 1894, Jour. Ornith., pp. 164, 169 (Bumanja; old Irumu). FLOWER, 1894, Proc. Zool. Soc. London, pp. 599, 606 (Ipoto; Muyoméma). LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 11 (Lower Congo). O.-GRANT, 1908, Ibis, p. 306 (north of Kasongo; Ponthierville); 1910, Trans. Zool. Soc. London, vol. 19, p. 398 (Mpanga Forest, 5000 ft.; Beni). SCHOUTEDEN, 1914, Rev. Zool. Africaine, vol. 3, p. 266 (Kilo); 1918, idem, vol. 5, p. 259 (Katumbaka; Biogo; Bolovet; Makojoba; Bulaimu; Bafwasende); 1924, idem, vol. 12, p. 419 (Tondu; Eala; Bikoro); 1926, idem, vol. 13, p. 200 (Ganda Sundi). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 250 (Moera; Beni–Mawambi; Mawambi; Ukaika; Irumu). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 211 (Kartushi; Lesse; Malisawa; Kampi-na-Mambuti; Simbo). BERLIOZ, 1925, Bull. Mus. Hist. Nat. Paris, vol. 31, p. 350 (Luluabourg).

Diaphorophya castanea SHELLEY, 1890, Ibis, p. 158 (Yambuya).

Diaphorophyia leucopygialis DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 33 (Kisantu; Riba-Riba; Mayombe).

Diaphorophyia hormophora LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 11 (Mukimbungu).

Dyaphorophyia castanea castanea SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 426. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 274, fig. 81. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 113 (Poko; Buta; Panga; Bondo Mabe; Rungu; Medje; Kotili; Nava R.). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 569 (Saidi). JACKSON, 1938, The birds of Kenya Colony and. . . Uganda, vol. 2, p. 932. GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 182.

Diaphrophyia castanea castanea LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 78 (Luebo).

SPECIMENS: Avakubi, three males, October 13, 15; female, October 13. Ngayu, three males, December 11, 14, 20; three females, December 13, 14, 25; immature, December 10. Gamangui, female, June 18. Bafwabaka, female, December 29. Medje, two males, May 12, 23. Niangara, immature male, May 4. Between Faradje and Aba, two males, November 28.

ADULT MALE AND FEMALE: Iris brownish red; eye wattles and feet pinkish purple, bill black.

DISTRIBUTION OF THE SPECIES: Lowland forests from Sierra Leone to northern Angola and eastward to Uganda and the Kavirondo District. *D. c. hormophora* Reichenow occupies the Upper Guinea forest, east to Togoland. Males have a complete white collar encircling the hind neck and very large eye wattles, of which the upper portion extends far behind the eye. *D. c. castanea* ranges from Southern Nigeria and Fernando Po across forested Cameroon and the Gaboon to the Congo, Roça Congulu in Angola, and the Kavirondo District of Kenya Colony. From Uganda it extends north to the Lotti Forest in the southeastern Sudan, and in the Congo southward to Luluabourg. Males of this nominate race have the hind neck black, and their eye wattles are not nearly so broad. The crest feathers are about twice as long in *castanea* as in *hormophora*, but in color and pattern the females of both are very much the same.

Though primarily a forest bird, *Dyaphorophyia c. castanea* follows forest galleries and patches of evergreen woods far into the northern and southern savannas of the Congo. I have seen it close to Rutshuru and in the forest east of the Rutshuru Plain, but it scarcely ascends to above 5000 feet. Throughout the lowland forest it is one of the common birds of the lower level, going in pairs or small groups and joining constantly in the mixed parties of insectivorous birds. The usual calls are low and unobtrusive, croaks and hiccoughs mainly of two kinds, a hoarse "kwook" or "twonk" and a more metallic "kwink." Noisy wing beats and snaps of the beak are even more likely to attract attention. But at rare intervals a male will surprise one by giving a prolonged series of louder notes, "took-took-took-took. . .," which may continue for a minute or more. It reminds one strongly of the calling by *Pogoniulus leucolaima*, except that

there are no periodic breaks in the series. Birds in rufous plumage can beat their wings as audibly as adult males. The food consists wholly of insects.

In the Ituri forest breeding seemed to go on during the first half of the rains. Three adults in May and June were all sexually active, but of 12 taken from October to December only four showed some slight enlargement of the gonads. To the south of the Equator the main breeding begins in September and October, but in the intermediate latitudes there must be great irregularity.

Only a single nest has ever been described; it was found for G. L. Bates[1] in the Cameroon, on a branch of a large-leaved undershrub in dense forest. The eggs were two, bluish white with scattered spots of brown most numerous about the blunt end, and a little gray speckling. The dimensions of one egg were 18 by 13.5 mm.

Dyaphorophyia tonsa Bates

Diaphorophyia tonsa BATES, 1911, Bull. Brit. Ornith. Club, vol. 27, p. 86 (type locality: Bitye, River Ja, Cameroon). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 251 (Moera). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 212, pl. 2, figs. 2, 3 (Kartushi; Mutshunga Mabese). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 113 (Bondo Mabe).

Diaphorophyia castanea SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 259 (in part. Malisawa).

Dyaphorophyia tonsa SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 426. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 278, fig. 82.

SPECIMENS: Avakubi, immature male, February 17. Medje, male, September 8.

MALE: Iris brown, eye wattle dark purplish; bill black; feet dark purplish.

DISTRIBUTION: From the Owerri Province of Southern Nigeria in heavy lowland forests eastward across the Cameroon and Upper Congo to the Semliki Valley. There are as yet no records from the southern half of the Lower Guinea forest.

The male of *D. tonsa* resembles that sex of *D. castanea*, but the crown feathers are short and glossed with violet-blue. The white patch above the eye of *tonsa* is larger, and shows behind the wattle, while the hind neck is all but encircled by a narrow white

[1] 1927, Ibis, p. 36, pl. 2, fig. 6 (egg).

collar. Wings of males measure 56–60 mm., tails 22–30, exposed culmen 12, metatarsus 15–16. The female of *tonsa* differs from that of *castanea* in its glossy black forehead and crown; wings 55–58 mm., tails 25–26.

In addition to the eastern Congo specimens reported as *D. tonsa*, there is one adult male in the Congo Museum from Malisawa collected by Pilette. J. M. Vrydagh writes me that he also has taken a specimen near Bambesa, in the Uelle. This wattled flycatcher dwells in the forest undergrowth and must be even more restricted to areas of virgin timber than *D. castanea*. When I collected my specimens I noted no difference in behavior from that of the commoner species. A wounded bird was seen to expand the eye wattles considerably, but the broadened portion on the upper lid does not extend so far back as in *D. castanea*. Marchant[1] in Southern Nigeria heard two calls from *tonsa*, a loud explosive "tong," and a short mellow whistle, "kwu," mounting the scale. Nothing has yet been learned of the nesting habits.

Dyaphorophyia blissetti jamesoni Sharpe

Diaphorophyia jamesoni SHARPE, 1890, *in* Jameson, The story of the rear column, Nat. Hist. App., pp. 398, 414 (type locality: Yambuya, lower Aruwimi R., Congo). REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 493 (Kinyawanga); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 305 (Irumu; Ipoto). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 399 (Mpanga Forest, 5000 ft.; Beni). SCHOUTEDEN, 1914, Rev. Zool. Africaine, vol. 3, p. 266 (Kilo); 1918, idem, vol. 5, p. 259; 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 113 (Buta; Mauda; Poko). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 251 (Moera).

Diaphorophya blissetti SHELLEY, 1890, Ibis, p. 159 (Yambuya).

Diaphorophyia blissetti EMIN, 1894, Jour. Ornith., p. 170 (old Irumu). FLOWER, 1894, Proc. Zool. Soc. London, p. 602 (Ipoto).

Diaphorophyia blissetti jamesoni GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 213. GROTE, 1926, Ornith. Monatsber., p. 121.

Dyaphorophyia jamesoni SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 427. JACKSON, 1938, The birds of Kenya Colony and. . . Uganda, vol. 2, p. 933.

Dyaphorophyia blissetti jamesoni VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 72 (Djelube R.).

SPECIMENS: Avakubi, male, female, November 23. Ngayu, male, December 10. Bafwabaka, male, January 2. Medje,

[1] 1942, Ibis, p. 172.

five males, June 28, September 1, 4, 6, 22. Niangara, male, May 11.

ADULT MALE AND FEMALE: Iris dark reddish brown, eye wattles turquoise; bill black; feet light purplish.

DISTRIBUTION OF THE SPECIES: Forests of Upper and Lower Guinea, from Sierra Leone to Uganda and the Nandi district. The sexes differ but little when adult. *D. b. blissetti* Sharpe, found from Sierra Leone to Togo, has large areas of reddish chestnut on cheeks and sides of neck. *D. b. chalybea* Reichenow is entirely greenish black on these parts and occupies Fernando Po and the adjacent coast of the Cameroon, extending inland to the Ja River and south to the Ogowé. *D. b. jamesoni* again shows chestnut areas at the sides of the neck, but they are more restricted and deeper in color than those of *blissetti*. The known range of *jamesoni* includes the eastern half of the Upper Congo forest and much of Uganda, extending to the Nandi district, Mt. Elgon, and the Lotti Forest in the southeastern Sudan. Records from the vicinity of the Ubangi River are lacking, and likewise from the whole Kasai area. Yet Rockefeller and Murphy obtained a specimen at Mulolo, near the upper Elila River. I have collected others in the forest east of the Rutshuru Plain, at 4000 and at 5100 feet; this flycatcher seems to go no higher on the mountains.

Throughout the Ituri and southern Uelle Jameson's wattled flycatcher is fairly common, inhabiting dense undergrowth in the forest, keeping near the ground, and excelling in wing snapping. Sometimes it is seen as often as *D. castanea*, but always in lower, thicker bushes, even close to roads. Only rarely does it join with mixed bird parties. The loud wing beats may be a form of display. The birds can fly noiselessly, but upon occasion they produce sputterings suggestive of a pack of diminutive firecrackers. Immature birds are seen less often than adults, and have the whole throat rufous, bounded by a blackish band across the chest.

Two males from north of the Equator were in breeding condition in May and September, both rainy months. One from near the Rutshuru Plain was also ready for breeding in May, so I suspect that reproduction is interrupted only for a few of the driest months. The nest of this race is yet to be discovered, though it is doubtless like that of *D. b. chalybea*, described by Bates[1] as a small

[1] 1911, Ibis, pp. 528, 529, pl. 9, fig. 22.

cup bound about with cobwebs. The eggs were two, dull greenish white with a heavy zone of umber and dark gray spots about the larger end and a few small markings elsewhere. Dimensions are 18 by 12 and 17.5 by 12 mm.

[*Dyaphorophyia blissetti chalybea* Reichenow]

Diaphorophyia chalybea REICHENOW, 1897, Ornith. Monatsber., p. 46 (type locality: Bipindi, Cameroon).

From Fernando Po this black-necked race extends to the base of Mt. Cameroon, the River Ja, and southward at least to the Abanga River along the Ogowé in the Gaboon, where Ansorge collected one adult female. I should not be greatly surprised if it reached the Mayombe Forest.

Dyaphorophyia concreta graueri Hartert

Diaphorophyia graueri HARTERT, 1908, Bull. Brit. Ornith. Club, vol. 23, p. 7 (type locality: forest 90 km. west of L. Edward, alt. 1600 m.); 1909, Novitates Zool., vol. 16, p. 334; 1920, idem, vol. 27, p. 495. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 252 (Moera; Mawambi; Ukaika; Mawambi-Irumu). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 259 (Bolovet; Kokola).

Diaphorophyia graueri graueri HARTERT AND VAN SOMEREN, 1923, Bull. Brit. Ornith. Club, vol. 43, p. 79.

Dyaphorophyia ansorgei graueri SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 427. JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 934. VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 72 (Kianiamakue near Lutunguru; west base of Ruwenzori between Lusilube and Biangolo rivers).

Diaphorophyia ansorgei graueri SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 114 (Bondo Mabe).

SPECIMENS: Babeyru, male, August 1. Ngayu, male, female, immature female, August 2.

ADULT MALE: Iris dark brown, a narrow whitish ring around inner rim; wattle encircling eye light yellowish green; bill black; feet blue.

ADULT FEMALE: Flesh colors similar, save that iris was dark gray, shading to whitish exteriorly and with a narrow light inner rim.

DISTRIBUTION OF THE SPECIES: Sierra Leone to the Cameroon, the western Benguella Province of Angola, northeastern Congo, Kavirondo District in Kenya Colony, and Kungwe on the eastern side of Lake Tanganyika. I am satisfied that there is only a single

yellow-breasted species of *Dyaphorophyia*, for which the oldest name is *D. concreta* (Hartlaub), with Gold Coast as type locality.

It may be that *D. ansorgei lomaensis* Serle,[1] described from Sierra Leone, is more like *concreta* than supposed, and I shall also refer five other races to the latter species. Females differ regularly from the yellow or golden-breasted males in having a wash of chestnut on the throat and sometimes the flanks. The yellow pigment of the lower parts is not very stable; skins only 20 years old seem to me to have lost much of their golden color.

Dyaphorophyia concreta harterti Bates of the forested Cameroon is rather similar to *D. c. concreta* of Upper Guinea, if I am correct in my belief that the yellow pigment has faded from the underparts of the type of *concreta*. The wings of *harterti* measure 58–62 mm.[2] *D. c. ansorgei* Hartert of Angola is small, with wing 56 mm., and is grayish above; while *D. c. graueri* of the northeastern Congo has wings 58–64 mm., coloration rich throughout, and females with chestnut of fore neck usually continuing down the flanks. *D. c. silvae* Hartert and Van Someren of North Kavirondo is similar in size to *graueri* and only a little lighter in color. *D. c. kungwensis* Moreau of Mt. Kungwe is still darker above than *graueri*, and apparently the most richly colored of all the races. Its wing measures 60–61 mm.

Despite the apparent gaps in its range, this species of flycatcher is not restricted to mountain forests; indeed it has never been observed on the upper slopes of Ruwenzori or the Kivu Volcanoes. Some forms occur in lowlands, others range from 2500 to 5500 feet, and one is known only from 6900 to 8000 feet on Mt. Kungwe.

The range of *D. c. graueri* extends from the highlands west of Lake Edward, the eastern Semliki Valley, and Djugu on the Lendu Plateau westward to Babeyru near the Nepoko River, and possibly even to Yukaduma in the Cameroon. A. I. Good tells me that he has a pair from the last-named place, and that they seem more like *graueri* than like *harterti*.

The distribution in the Ituri forest seems rather local, and most specimens have been taken along the eastern edge. In 1926 I secured a female at Djugu, 5500 feet, and two males and a female about 50 kilometers southwest of Irumu. While the female from

[1] 1946, Bull. Brit. Ornith. Club, vol. 66, p. 73 (Bintumane Peak).

[2] Closely allied to *harterti* is *D. c. kumbaensis* Serle, 1949, Bull. Brit. Ornith. Club, vol. 69, p. 75 (Kumba, British Cameroons).

Ngayu has the flanks heavily washed with chestnut, like Grauer's original specimens of that sex, females from near Djugu and Irumu are almost plain yellow on the flanks. This character varies individually, according to Sassi, in the region of Beni. Our immature female from Ngayu is gray above, with narrow rufous buffy tips on greater wing-coverts and inner secondaries. The lower surface is paler grayish, becoming pale yellow on abdomen and under tail-coverts, and with a patch of orange rufous already developing on the lower throat.

Grauer's wattle-eye lives in pairs or family groups in the leafy undergrowth of primary forest. Attention is apt to be attracted by a series of three to four whistled syllables, which may be followed immediately by a guttural cluck or double chuckle. In that case the female seems to be replying to her mate; on other occasions varied hoarse calls may be heard from a family party, and the general behavior is like that of *D. castanea*. To me it was always a rare experience to meet with this colorful bird, and I am not surprised that no nest has ever been found. The breeding season certainly begins in the first half of the rains, and Grauer took juveniles between Beni and Mawambi in August and December.

[*Dyaphorophyia concreta harterti* Bates]

Diaphorophyia ansorgei harterti BATES, 1926, Bull. Brit. Ornith. Club, vol. 46, p. 105 (type locality: Bitye, River Ja, Cameroon).

While this race may not extend eastward as far as the Ubangi River, it is quite possible that *harterti* or some similar form will yet be found in the Gaboon and Lower Congo, especially in view of the range of *D. c. ansorgei* in Angola. Sick[1] reported a second specimen of *ansorgei* from Roça Congulu in the Amboim district of Angola, some 160 miles north of the type locality at Cabeça do Ladrão.

On well-watered highlands close to Lake Tanganyika one may also hope to find some representative resembling *D. c. graueri* or *kungwensis*.

KEY TO THE CONGO SPECIES OF *Platysteira*

1. A black band across chest, throat always white (adult males).....2

[1] 1934, Ornith. Monatsber., p. 170.

Throat entirely black, maroon bordered with black below, or white without chest band (females).....4
2. Upper surface of wings without white markings.....*P. peltata*
A conspicuous white band on wing-coverts.....3
3. Crown blackish, sharply separated from the gray back.....*P. albifrons*
Crown black and not marked off from back, which is also rather blackish.....*P. cyanea*
4. Throat and chest entirely whitish.....*P. albifrons*
Throat and upper chest glossy black or maroon.....5
5. Whole throat and upper chest glossy black, chin white; no white on upper wing-coverts.....*P. peltata*
Throat and fore neck deep maroon, margined with black posteriorly, chin and malar region whitish; a white band on wing-coverts.....*P. cyanea*

Platysteira cyanea cyanea (Müller)

Muscicapa cyanea P. L. S. MÜLLER, 1776, Des Ritters Carl von Linné... Natursystems Supplement, p. 170 (type locality: Senegal).

Platysteira cyanea cyanea NEUMANN, 1905, Jour. Ornith., p. 210. BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 418 (Congo mouth); 1936, The birds of tropical West Africa, vol. 4, p. 268, pl. 8 (Landana). SCHOUTEDEN, 1926, Rev. Zool. Africaine, vol. 13, p. 200 (Vista; Makaia Ntete; Temvo; Tshela). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 424 (Bamingui R.).

Platysteira cyanea LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 11 (Mukimbungu).

SPECIMEN: Boma, male, January 12.

DISTRIBUTION OF THE SPECIES: Senegal to Northern Nigeria, Bahr-el-Ghazal Province, Uganda, Kavirondo, and southern Abyssinia; southward also to the Lower Congo, Kasai District, and Manyema; also to Lake Kivu and Lake Victoria.

Platysteira cyanea cyanea ranges from Upper Guinea to the lower Congo River and to the Ubangi-Shari Province. It has no light band on the forehead in either sex. *P. c. nyansae* continues the range from the Cataracts district of the Congo eastward to the vicinity of Lake Tanganyika and northeastward to the Nandi district of Kenya Colony, the southeastern Sudan, and the Uelle District. It has a light supraloral line, usually extending across the forehead. *P. c. aethiopica* Neumann of southern Abyssinia is like *nyansae* in color, but slightly smaller. It inhabits highlands at 4000 to 8300 feet.

The range of nominate *cyanea* certainly reaches our territory in the Mayombe and along the lower Congo River. My male from Boma proves that, yet specimens from Manyanga and Gombe Lutete already show the characters of *nyansae*, and others from Stanley Pool belong to the eastern race.

At Boma, and later at Ganda Sundi, I found this red-wattled flycatcher very common about villages and in second-growth woods. Its clear, whistled notes may be given singly, in two's or three's, or even up to five in succession, and are much the same as those of *nyansae*. Nesting seems to go on through nearly the whole year, except perhaps for a short period during the dry season. Nest and eggs are like those of *nyansae*.

Platysteira cyanea nyansae Neumann

Platysteira cyanea nyansae NEUMANN, 1905, Jour. Ornith., p. 210 (type locality: Bukoba, west shore of L. Victoria). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 253 (Kasindi; Moera; Ukaika; Mawambi; Irumu). SCHOUTEDEN, 1924, Rev. Zool. Africaine, vol. 12, p. 419 (Eala); 1932, idem, vol. 21, p. 316 (Lulenga; Ngoma); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 120. GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 214 (Sake; Irumu). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 424 (Upper Uelle). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 242 (eastern Ituri District). FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 290 (Kivu region; "Ruanda"; "Urundi"). PETERS AND LOVERIDGE, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 259 (Idjwi I.).

Platystira cyanea REICHENOW, 1887, Jour. Ornith., pp. 300, 309 (Manyanga; Kibondo). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 399 (Mokia, 3400 ft.; Beni, 3000 ft.; Butahu Valley, 4000 ft.). LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 23 (Rutshuru).

Platystira cyanea (*melanoptera*) OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 126 (Brazzaville).

Platystira albifrons OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 126 ("Congo").

Platysteira cyanea albifrons REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 489 (Tomaya; Ngombe in Cataracts district).

Platysteira cyanea var. *albifrons* DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Lower Congo; "Mpala").

Platysteira cyanea REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 305 (Kwidjwi I.). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 259 (Kamabo; Biogo; Moera; Lisasa; Kibati; Boga; Buwissa; Kabambaré; junction of Talia and Semliki rivers); 1923, idem, vol. 11, p. 398 (Kwamouth); 1925, idem, vol. 13, p. 16 (Bolobo).

Platysteira orientalis EMIN, 1919, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 2, p. 424 (Tobbo).

Platystira orientalis EMIN, 1919, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 2, p. 492 (Tomaya); EMIN, 1921, *in* Schubotz, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 3, pp. 237, 240 (Mundu).

Batis orientalis SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 128 (Tomaya; Mangbetu country; Mundu).

Platysteira cyanea nyanzae BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p.

418. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 113 (Poko; Mauda; Faradje; Niangara; Mahagi Port; Buta); 1940, Rev. Zool. Bot. Africaines, vol. 33, p. 286 (Mt. Wago). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 929. HENDRICKX, 1944, Ostrich, vol. 15, p. 197 (southwest of L. Kivu). VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 72 (Semliki R.).

Platysteira cyanea cyanea SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 339 (Kabambaie; Belenge); 1924, idem, vol. 12, p. 272 (Leopoldville). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 65 (Brazzaville).

? *Stenostira albigularis* EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 64 (Nyamsansi on L. Albert; Tomaya; Mangbetu land).

Platysteira albifrons BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 65 (upper Kemo R.).

SPECIMENS: Leopoldville, male, female, July 3. Ikengo, near Bolengi, male, July 20. Avakubi, female, May 8. Medje, male, July 28; three females, March 21, May 16, July 28; immature female, July 31. Bafwabaka, male, December 31; female, January 10. Faradje, two males, October 1, November 1; three females, March 30, August 19, October 16.

ADULTS OF BOTH SEXES: Iris blue-gray to blue, with a white inner rim (just around pupil), upper eyelid (expanded to a wattle) vermilion, lower one blackish; bill black, feet black.

DISTRIBUTION: From the Cataracts district of the Congo and French Equatorial Africa eastward across the Bahr-el-Ghazal and Lado to Mt. Elgon, North Kavirondo, Ukerewe Island, Lake Kivu, and the Manyema District. Dubois' record from Mpala seems open to doubt, and in the Kasai this red-wattled flycatcher is restricted to the northern half. Moreover, in the central forests of the Congo it is apt to be scarce or wanting, seen or heard at best only in the larger clearings.

As we traveled up the Congo River from Leopoldville into the forest belt *Platysteira cyanea* became less and less common. At Stanleyville in 1909 and 1914 I did not even hear one. At Avakubi it was almost a rarity, and when it did sing it seemed to lack its accustomed vigor. As soon as we approached the northern edge of the forest near the Nepoko River, the birds again grew more numerous and tuneful. The race *nyansae* really thrives in the savannas bordering the forest region and ranges from 500 up to 6000 feet in suitable country. I have seen it at Djugu and Bogoro on the Lendu Plateau, at the southwestern base of Ruwenzori, at Luofu, on the eastern edge of the Rutshuru Valley, and in the

Ruzizi Valley, but never above 6000 feet on Ruwenzori or the Kivu Volcanoes.

At Leopoldville, as in the Uelle, these flycatchers are common about the edges of the town, where there are roads shaded by mango and other thickly leaved trees. Their whistled notes are heard at almost any hour of the day. Sometimes they are abbreviated, sometimes increased to five syllables; but three or four separate notes are customary, each successive one of slightly lower pitch. In the intervals between songs, harsher lower calls are often audible, almost of scolding tone, possibly given by the female. The birds keep fairly well concealed, snapping their bills occasionally. The male often produces loud wing beats, and the female sometimes makes the same noise in flight. So far as I am aware, this flycatcher takes no food save insects. It does not fly out and return to the same perch but moves actively amid the boughs.

Breeding seemed to continue through all seasons. North of the forest we took birds with enlarged gonads in January, March, and July; south of the Equator it was apparently breeding even in the dry month of July. A nest found at Faradje in late March was a neat cup with outer surface covered with fine gray silky material and ornamented with flat pieces of gray-green lichen. The lining was of fine grass stems. Placed in the fork of a thin branch, 18 feet up in a small clump of trees, the nest was guarded by the male, who scolded and snapped his bill while his mate remained on the two eggs. The latter were pale greenish, with a wreath of brown spots about the larger end and scattered spots elsewhere. Nests are often situated lower down, and the eggs measure about 18–19 by 14 mm.

Platysteira albifrons Sharpe

Platystira albifrons SHARPE, 1873, Ibis, p. 159 (type locality: Loge R., northwestern Angola).

Platysteira cyanea albifrons NEUMANN, 1905, Jour. Ornith., p. 211 (Angola).

Platysteira albifrons REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 832 ("Congo region"; Angola). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 425 (Ngombe Lutete on lower Congo). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 271.

DISTRIBUTION: From the vicinity of Lobito Bay northward in lowlands at least to Canhoca and Ambriz. Whether it really

has been collected on the Congo River or not I cannot be sure. All the specimens taken by Bohndorff at Ngombe Lutete that I have seen are *P. cyanea nyansae*.

Neumann (1905) considered *albifrons* as a geographic representative of *P. cyanea*, and not without reason, for the range seems complementary, and the male of *albifrons* is distinguished mainly by its gray back. The adult female is more different, with throat and chest wholly white, but a young bird has those areas cinnamon rufous. Adults of both sexes have a scarlet wattle above the eye and the iris colored as in *P. cyanea*.

The supposed record of *albifrons* from the upper Kemo River is plainly erroneous, and *P. c. nyansae* was often confused with this Angola form. At best, I think it can reach the Belgian Congo only in the region of the Kwango River.

Platysteira peltata mentalis Bocage

Platystira mentalis BOCAGE, 1878, Jor. Sci. Nat. Lisboa, vol. 6, pp. 256, 270 (type locality: Caconda, Angola).

Platystira peltata DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, no. 3, p. 148 (L. Tanganyika). DE SOUSA, 1886, Jor. Sci. Nat. Lisboa, vol. 11, p. 78 (Luapula R.); 1886, *in* Capello and Ivens, De Angola a Contra-Costa, vol. 2, p. 445. SHARPE, 1907, Bull. Brit. Ornith. Club, vol. 21, p. 31 (Kambove; upper Lualaba R.).

Platysteira peltata REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 487 (in part). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Mpala).

Platystira jacksoni NEAVE, 1910, Ibis, p. 129 (Kambove, 4500 ft.; Dikulwe R., 4000 ft.; upper Lualaba R., 3500 ft.).

Platysteira jacksoni SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 253 (northwest of L. Tanganyika, 2000 m.).

Platysteira cyanea DE RIEMAECKER, 1927, Rev. Zool. Africaine, vol. 14, p. 281 (Elisabethville).

Platysteira peltata jacksoni SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 425. LYNES, 1934, Ibis, p. 40 (Mporokoso in Northern Rhodesia). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 242 (Katanga). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 931. SCHOUTEDEN, 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 339 (Rutegama). GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 182 (Luluabourg). WHITE, 1944, Ibis, p. 147 (Luapula R.).

Platysteira peltata peltata MABERLY, 1936, Ostrich, vol. 7, p. 60 (Elisabethville).

DISTRIBUTION OF THE SPECIES: Zululand and Mashonaland to central Angola, the Kasai District, Urundi, Kenya Colony, and the coast of Southern Somaliland. *Platysteira p. peltata* Sun-

devall is a rather small race, wings 62–68 mm., ranging from Zululand north to Nyasaland, Mt. Kungwe on the east side of Lake Tanganyika, central Tanganyika Territory, and perhaps to Mt. Kenya. *P. p. brevipennis* Grote, with wings only 60–65 mm., continues northward along the East Coast from Mafia Island to Southern Somaliland. *P. p. mentalis*, with wings 67–73 mm., ranges from Angola and Northern Rhodesia across the southeastern Congo to the western side of Lake Tanganyika, then on to Mt. Elgon and the highlands of Kenya Colony west of the Great Rift.

Within our limits the race *mentalis* is known from Luluabourg in the Kasai, the Katanga and Marungu, the highland northwest of Lake Tanganyika, and southern Urundi. Rockefeller and Murphy secured three specimens at Lake Suzi in southern Marungu and an immature male at Kita Kita on the Kama River, Manyema. So far as I know, *P. peltata* and *P. cyanea* never live in exactly the same place, and where their ranges all but touch, *peltata* is apt to occupy a somewhat higher level than *cyanea*. This is certainly the case in the region of Uvira and again near Mt. Elgon. Yet both species extend down to sea level, on opposite sides of the continent.

In behavior this red-wattled flycatcher is similar to *P. cyanea;* it is seen amid leafy trees and thickets, especially near watercourses, in pairs and family groups. Its harsher call notes or rattles are not very different; but no clear whistles are given, only a loud reiterated "jing," which Benson has compared with the blow of a hammer on an anvil.

Breeding begins in Northern Rhodesia about September and may be over by January. The nest of the South African race is a small cup covered with cobweb, usually situated in a fork amid the thick branches of a tree, 8 to 20 feet up. The eggs are two, pale greenish, heavily spotted with brown and with blue-gray shell markings.

[*Platysteira peltata peltata* Sundevall]

Platystira peltata SUNDEVALL, 1850, Öfvers. K. Svenska Vetensk. Akad. Förhandl., vol. 7, p. 105 (type locality: Umlalazi R., Zululand).

Platysteira peltata peltata MOREAU, 1943, Ibis, p. 398 (Kungwe-Mahare, 6900 ft.; Kasanga).

Platysteira peltata peltata? WHITE, 1946, Ibis, p. 85 (Luapula R. near Kasenga).

Although this nominate race, with grayer back and shorter

wings than *mentalis*, has been reported from Kasanga on Lake Tanganyika and Mt. Kungwe by Moreau, it is not known to reach Congo territory. Marungu specimens are certainly *mentalis*, but White thought he detected some approach to *peltata* in an example from the Luapula River. De Riemaecker collected the species at Futwe in the southeastern Katanga, and material from that neighborhood deserves further study.

KEY TO THE SPECIES OF *Erythrocercus* IN AND NEAR THE CONGO

Fore crown chestnut, narrowly streaked with buff; rectrices wholly rufous; abdomen buffy white.....*E. mccallii*

Fore crown gray or greenish; most of the rectrices with a broad black subterminal bar; abdomen yellow.....*E. livingstonei*

Erythrocercus mccallii mccallii (Cassin)

Pycnosphrys mccallii CASSIN, 1855, Proc. Acad. Nat. Sci. Philadelphia, vol. 7, p. 326 (type locality: Moonda R., Gaboon).

Erythrocercus maccallii SHARPE AND BOUVIER, 1877, Bull. Soc. Zool. France, vol. 2, p. 479 (Ivindo).

Erythrocercus maccalli SHARPE, 1879, Catalogue of the birds in the British Museum, vol. 4, p. 298 ("Grande, Congo"). REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 494. SCHOUTEDEN, 1920, Rev. Zool. Africaine, vol. 7, p. 191 (Temvo in Mayombe).

Erythrocercus maccalli maccalli BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 414.

Erythrocercus mccallii mccallii SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 428. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 284 ("Grando in Lower Congo").

DISTRIBUTION OF THE SPECIES: Western Liberia to the Cameroon and Lower Congo, thence eastward to the Ituri forest and the Budongo Forest in Uganda. On the south it reaches Luebo in the Kasai and the vicinity of Kasongo near the Lualaba.

Three subspecies are recognized. *E. m. nigeriae* Bannerman, with whitish throat, occupies forested Upper Guinea and Southern Nigeria. *E. m. mccallii* has a light rufous wash on the throat and ranges from forested southern Cameroon to the Mayombe Forest. *E. m. congicus* of the Upper Congo and western Uganda has deeper rufous color on throat and fore neck, and deeper chestnut color on the fore crown.

There are very few Congo records of nominate *mccallii*. I doubt that there is any place in the Lower Congo called "Grande," and suspect that name is due to an error in copying Condé of Lucan and Petit. We may expect that more specimens will

yet be taken in the Mayombe Forest, and the general behavior is certainly the same as that of the next race.

Erythrocercus mccallii congicus Ogilvie-Grant

Erythrocercus congicus OGILVIE-GRANT, 1907, Bull. Brit. Ornith. Club, vol. 19, p. 41 (type locality: Irumu, eastern Ituri District, Belgian Congo); 1910, Trans. Zool. Soc. London, vol. 19, p. 403, pl. 14, fig. 1. REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 305.

Erythrocercus maccalli congicus SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 255 (Moera; Beni–Mawambi; Ukaika). BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 414.

Erythrocercus maccalli ssp. SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 340 (Luebo).

Erythrocercus maccallii congicus GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 215 (Beni; Kartushi; Kampi-na-Mambuti). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 114 (Bondo Mabe; Kotili).

Erythrocercus mccallii congicus SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 428. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 935.

SPECIMENS: Banalia, immature male, September 26. Avakubi, male, April 16. Bafwabaka, male, July 24. Medje, three males, July 2, August 1, 13; immature male, immature female, August 21.

ADULT MALE: Iris red or light brownish red; maxilla dark grayish brown, mandible lighter, grayish brown to grayish pink; feet light brownish.

Immature birds have the iris light brown.

DISTRIBUTION: From the Budongo Forest in Uganda and the Semliki Valley westward at least to the Lower Uelle District on the northern edge of the equatorial forest, and to Luebo and Kasongo on its southern margin. The scarcity of records from the more central part of the Upper Congo forest is surprising, but I believe that *congicus* will be found ranging at least to the Ubangi River. J. M. Vrydagh tells me he has collected two examples near Bambesa, and Rudolf Grauer obtained others 280 and 340 kilometers west of Baraka on the road to Kasongo.

On the northern edge of the Ituri forest this little fantail has not been noted north of Medje and Bondo Mabe, the latter locality being near Arebi. It is sometimes seen in second growth, roaming in couples or parties of five or six at a height of 3 to 6 yards. Bowing, turning, and spreading their rufous tails continually,

they reminded me of *Elminia*, and others have compared their progress with that of long-tailed tits. Once I heard a male singing, a pleasant little warble.

Between Irumu and Beni in 1926 I found them more common than near Medje. A trio might join with a mixed party traveling through the undergrowth in primary forest, or even with the bird parties frequenting the higher boughs. The light shining through the tail as it is flitted is very apt to draw one's attention. Small insects are the only food.

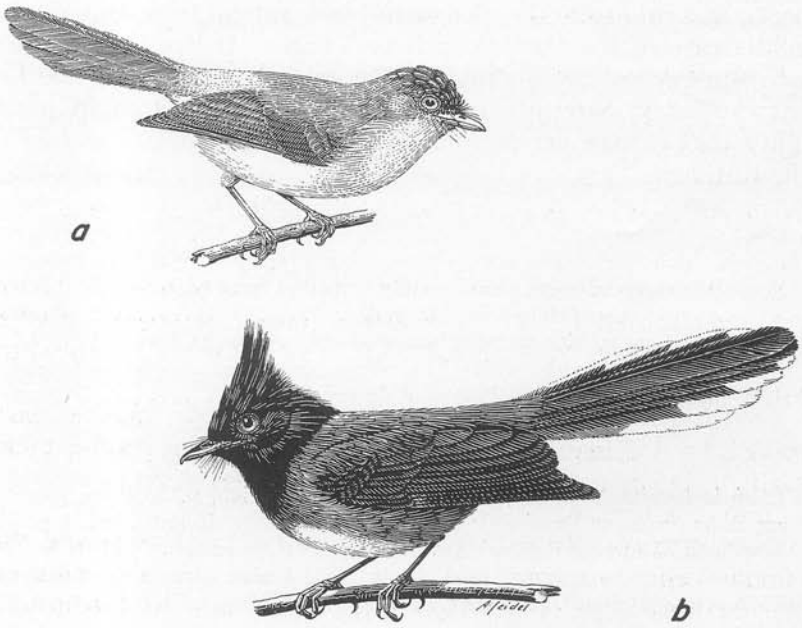

FIG. 27. Two fan-tailed flycatchers. A. *Erythrocercus mccallii*. B. *Trochocercus albonotatus*.

We took birds in breeding condition in the Ituri during April, July, and August, all rainy months, but never found a nest. That of nominate *mccallii* was described by Bates[1] as looking almost like a nest of a *Cisticola*, suspended from two small twigs and some of their leaves, to which it was fastened with cobwebs, but without any warbler-like sewing. Composed of dry leaves with a little plant down as lining, it was rather deep, with the

[1] 1911, Ibis, p. 529.

entrance to one side. That nest contained two young; the eggs have not yet been seen. Nests of *Erythrocercus livingstonei* are built in much the same manner.[1]

[*Erythrocercus livingstonei livingstonei* Gray]

Erythrocercus livingstonei G. R. GRAY, 1870, *in* Finsch and Hartlaub, Die Vögel Ost-Afrikas, p. 303 (type locality: Zambesi). PITMAN, 1934, A report on a faunal survey of Northern Rhodesia, p. 243 (Abercorn; Kasama; Mpika; Serenje).

This small fantail flycatcher, with green back, yellow underparts, and rufous tail banded with black ranges from Inhambane in the eastern coastlands north to Vanga. It has been divided into three races, the nominate form extending inland to the Loangwa Valley, Serenje, and Abercorn. There is a slight possibility that it may yet be found to reach the southeast corner of the Katanga.

KEY TO THE SPECIES OF *Elminia*

Outermost pair of rectrices wholly pure white, or gray only at very base, and the three adjacent pairs broadly tipped at least with pure white; blue of upperparts tinged with lavender..... *E. albicauda*

Outer rectrices gray, with a strong blue wash on outer webs, narrowly tipped at most with grayish white; blue of upperparts not tinged with lavender, more like the Squill Blue of Ridgway..... *E. longicauda*

Elminia longicauda teresita Antinori

Elminia teresita ANTINORI, 1864, Catalogo descrittivo, p. 50 (type locality: Djur, Bahr-el-Ghazal Province); 1868, Boll. Soc. Geogr. Italiana, vol. 1, p. 116 (Niam-Niam land near Bafuka). PETERMANN, 1868, Petermann's Mitt., p. 416. SCHWEINFURTH AND RATZEL, 1888, Emin Pascha, eine Sammlung von Reisebriefen, p. 365 (Djanda). O.-GRANT, 1914, Bull. Brit. Ornith. Club, vol. 33, p. 135 (L. Albert).

Elminia longicauda REICHENOW, 1887, Jour. Ornith., p. 300 (Manyanga). HARTERT, 1900, Novitates Zool., vol. 7, p. 37 (Diapanda in Ituri). REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 496 (Karevia); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 305 (north of Beni). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Kisantu). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 406 (Mubuku Valley, 5500–6000 ft.; Mokia). SCHOUTEDEN, 1914, Rev. Zool. Africaine, vol. 3, p. 266 (Kilo); 1918, idem, vol. 5, p. 259 (Lisasa; Boga; Kinabe). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 260 (Kasindi–Beni; Moera; Beni; Ukaika). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 130 (Mangbetu country). MENEGAUX, 1923, Voyage de M. Guy Babault, Oiseaux, p. 99 (Ituri).

[1] Benson, 1944, Ibis, p. 462; 1947, idem, p. 283.

Elminia schwebischi OUSTALET, 1892, Nouv. Arch. Mus. Paris, ser. 3, vol. 4, p. 216 (type locality: Franceville, near upper Ogowé R.); 1893, Naturaliste, ser. 2, vol. 7, pp. 126, 127 (French Congo; Ubangi).

Elminia teresitae EMIN, 1922, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 3, p. 377 (Mswa on L. Albert); 1927, idem, vol. 4, p. 102 (Nsabé on L. Albert).

Erannornis SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 340 (Kabambaie).

Erannornis longicauda teresita SCHOUTEDEN, 1924, Rev. Zool. Africaine, vol. 12, p. 419 (Eala); 1926, idem, vol. 13, p. 200 (Temvo; Makaia Ntete; Ganda Sundi); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 114 (Buta; Poko; Dika; Mauda; Faradje; Rungu; Medje); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 120 (west shore of L. Edward). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 222 (Kartushi; Irumu). SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 79. SCLATER, 1927, Bull. Brit. Ornith. Club, vol. 47, p. 120; 1930, Systema avium Aethiopicarum, pt. 2, p. 429. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 288. JACKSON, 1938, The birds of Kenya Colony and. . . Uganda, vol. 2, p. 936.

Erranornis longicauda teresita PETERS AND LOVERIDGE, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 259.

Erannornis longicaudata teresita BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 67 (upper Kemo R.).

SPECIMENS: Avakubi, male, February 8. Medje, two males, April 1, August 16; five females, March 14, 15, April 1, June 7, August 15; immature female, September 11. Faradje, three males, March 8, 30, April 24; two females, March 30, July 16. Garamba, two females, May 4, June 28.

ADULTS OF BOTH SEXES: Iris dark brown, bill and feet black.

DISTRIBUTION OF THE SPECIES: From the Gambia to the Bahr-el-Ghazal, Uganda, Nandi district, Bukoba, Lake Edward, the Kasai, and northwestern Angola. *E. l. longicauda* (Swainson) of Upper Guinea extends eastward across Northern Nigeria to the Logone district of French Equatorial Africa. It is slightly deeper blue throughout and less white on the middle of the underparts than *E. l. teresita*, which ranges from Mt. Cameroon and Ngaundere to Uganda and the Nandi district. Though rather rare in many parts of the equatorial forest of Lower Guinea, this race reappears in the savannas to the south, from the Loango Coast and Lower Congo eastward to the Kasai District. Then in the vicinity of Ndala Tando and Canhoca, northern Angola, there is a third race, *E. l. loandae* Sclater and Mackworth-Praed, still bluer than the nominate form.

At Ganda Sundi in the Mayombe I saw four individuals during a few days' stay, but specimens from the Lower Congo are scarce, and the race living there is believed to be *teresita*. Sclater examined the type of *schwebischi* and found it did not differ. Schouteden may possibly have seen this species at Kabambaie in the Kasai, but Father Windmolders writes me that he has collected *E. albicauda* at Mérode.

These blue fantails do occur in some of the clearings in the central Ituri forest. I was shown a specimen from Bafwasende and saw them several times at Avakubi but only in trees close to the station. From Medje northward the species became more common and was to be seen regularly at Niangara, Dungu, and Faradje. The same is true for the eastern edge of the forest, south to Lake Edward. On the southwest slope of Ruwenzori I found *teresita* up to 5500 feet, while on the eastern side Woosnam found it ascending to 6000. In the highland to the west of Lake Edward and southward in the Kivu it is replaced by the closely allied *Elminia albicauda*.

In behavior the blue fantail is original and engaging. Hopping and flitting from bough to bough, either in pairs or accompanied by a brood, it darts actively after insects and seems to be in perpetual motion. The tail is continually being spread, wings held half open, and with body horizontal the birds turn first to one side, then to the other. These antics need not be mistaken for courtship; they are performed not only by adults but even by young in soft juvenal plumage. The call notes are very low, and now and then a brief warbling song may be heard.

Few of our specimens were in breeding condition. We did find a pair at Faradje, on March 30, of which the female was ready to lay, and saw a very young bird there on July 5. Another in soft juvenal dress was taken at Medje on September 11. This agrees well with Bates's observations that in the Cameroon they breed from March to August, within the rainy half of the year.

The nest, as described by Bates, Van Someren, and Jackson, is a small, shallow cup saddled on a bough or in a fork, 6 to 15 feet up, built of plant stems and fibers coiled around and bound together with gossamer, and decorated with flat bits of lichen. Two eggs are laid, 16–17 mm. by 12–12.5, of whitish ground color but with a zone of gray markings around the larger end and sparsely speckled with brown.

[*Elminia longicauda loandae* Sclater and Mackworth-Praed]

Elminia longicauda loandae SCLATER AND MACKWORTH-PRAED, 1918, Ibis, p. 712 (type locality: Ndala Tando, northern Angola).

This deep blue race is known only from the vicinity of Canhoca, Golungo Alto, Ndala Tando, and Quicolungo in Angola. If it reaches the Belgian Congo anywhere, it is likely to do so in the neighborhood of the Kwango River. At Pungo Andongo in Angola *E. albicauda* is already found, and there seems to be no intergradation.

Elminia albicauda Bocage

Elminia albicauda BOCAGE, 1877, Jor. Sci. Nat. Lisboa, vol. 6, p. 159 (type locality: Caconda, Benguella, Angola). NEAVE, 1910, Ibis, p. 131 (Kambove, 4500 ft.). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 306 (Kwidjwi I.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 260 (northwest of L. Tanganyika, 2000 m.; Kisenyi–Rutshuru).

Elminia albicauda kivuensis GROTE, 1922, Jour. Ornith., p. 485 (type locality: Kwidjwi I. in L. Kivu).

Erannornis albicauda albicauda GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 222 (Kibati; Burunga). BRELSFORD, 1947, Ibis, p. 74 (Luwingu in Northern Rhodesia). A. W. VINCENT, 1947, Ibis, p. 183 (Elisabethville).

Erannornis albicauda kivuensis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 430. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 316 (Lulenga; Nya-Muzinga); 1933, idem, vol. 22, p. 376 (Mutura); 1935, idem, vol. 27, p. 402; 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 120 (Kibati; Mugunga; Burunga in Mokoto; Rutshuru). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 937. VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 31 (Rugari).

Erranornis albicauda albicauda LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 81, p. 78 (Biano Plateau).

Elminia longicauda albicauda HENDRICKX, 1944, Ostrich, vol. 15, pp. 207, 211 (southwest of L. Kivu).

DISTRIBUTION: From Pungo Andongo in northern Angola and the western highland of Benguella eastward to the Tete Province of Mozambique, the Matengo Plateau and Oldeani in Tanganyika Territory, the Katanga, the highlands near Lake Kivu and to the west of Lake Edward. Within our limits it is a highland bird, though descending to fairly low levels in Angola and in the Zambesi Valley. A specimen has been taken by Father Windmolders at Merode in the eastern Kasai.

On comparing series of skins from Angola and from the Kivu

region I find far too much variation in the extent of white on the outer rectrices to permit recognition of the race *kivuensis*. Nor is there any intergradation between *albicauda* and *E. longicauda teresita* in the region of Lake Edward.

The altitudinal range of *albicauda* in the Congo is mainly from about 4000 to 6500 feet, but it scarcely enters any dense mountain forest. In the Katanga Neave found it common in savanna woods and near stream banks. Rockefeller and Murphy collected specimens at Sambwe, Ketendwe, and Lubenga on the Marungu highland. In the Kivu this species extends northward to the highland west of Lake Edward, where Grauer and I have both collected it around 5000 and 6000 feet. While I took *albicauda* at Luofu and Mohanga, I am positive that I identified *teresita* with the field glass between Kabiabo and Karebumba, scarcely 60 miles farther north.

In behavior this blue fantail is very similar to the deeper blue *teresita*, frequenting trees in scrub country and the edges of woods. As it curtsies and spreads its tail the white outer rectrices are very conspicuous. Vincent[1] has described the call note as a sharp "tip-tip," alternating with whistled chirrups of "teereet." Occasionally, too, there is a short burst of pretty warbling. Breeding is evidently carried on in the first half of the rains, from October to December in the Katanga.

Nests, according to Belcher,[2] are little, round, firm-set cups covered with lichen externally and lined with feathers. They are fixed to thin twigs of lateral branches, 10 to 15 feet up, in trees in damp valleys. The two eggs are buffy or white, with fine freckling of brown or grayish green and gray, forming a heavy band toward one end. The dimensions are 16.5–17.2 by 11.9–12 mm.

KEY TO THE SPECIES OF *Trochocercus* IN THE CONGO

1. Three or four outer rectrices conspicuously tipped with white. . *T. albonotatus*
   No white on rectrices; they are entirely dark gray or blackish. 2
2. Head and fore neck entirely steel-green or steel-blue; cheeks at most are grayish. 3
   Only the crest black, or dark gray glossed with blue or green; throat always grayish. 4
3. Breast and abdomen light gray; crest feathers not exceeding 15 mm. . . . . *T. nitens*

[1] 1935, Ibis, p. 394.

[2] 1930, The birds of Nyasaland, p. 203.

Breast and abdomen white, flanks grayish, crest feathers at least 21 mm. long ..... *T. cyanomelas*

4. Crown and crest deep black, without metallic luster, crest feathers not more than 13 mm. long; tail less than 65 mm. long 5

Crown and crest dark gray to blackish, with blue-green gloss, longest crest feathers exceeding 18 mm.; tail longer than 65 mm. 6

5. Middle of abdomen white, contrasting with dark gray flanks.. *T. albiventris*

Middle of abdomen gray, scarcely different from flanks..... *T. nigromitratus*

6. Greater wing-coverts narrowly tipped with whitish; throat and fore neck dark gray, spotted with whitish; longest crest feathers exceed 19 mm..... ..... *T. cyanomelas*

Greater wing-coverts gray without light tips; throat and fore neck almost uniform gray; longest crest feathers less than 15 mm..... *T. nitens*

Trochocercus nigromitratus (Reichenow)

Terpsiphone nigromitrata REICHENOW, 1874, Jour. Ornith., p. 110 (type locality: Cameroon R.).

Trochocercus kibaliensis ALEXANDER, 1907, Bull. Brit. Ornith. Club, vol. 19, p. 88 (type locality: Kibali R., Upper Uelle District).

Trochocercus nigromitratus REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 306 (northwest of Beni). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 256 (Moera; Beni; Mawambi; Ukaika); 1924, idem, vol. 38, p. 78. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 259; 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 60 (upper Lindi R.).

Trochocercus nigromitratus intensus GYLDENSTOLPE, 1922, Bull. Brit. Ornith. Club, vol. 43, p. 35 (type locality: Kartushi, Semliki Valley); 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 216; 1926, Arkiv Zool., vol. 19A, no. 1, p. 66. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 431.

Trochocercus nigromitratus kibaliensis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 432. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 114 (Mauda; Rungu; Nava R.; Bondo Mabe).

Trochocercus nigromitratus nigromitratus STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 569 (Saidi).

Trochocercus nigromitratus toroensis JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 941 ("Upper Uelle District").

SPECIMENS: Avakubi, two males, May 30, June 6; female, December 21; juvenile male, May 27; immature female, February 24. Ngayu, two males, July 25, December 13. Medje, two males, May 20, 23.

ADULTS OF BOTH SEXES: Iris dark brown, bill black, feet dark bluish.

DISTRIBUTION: From the Benin Province in Southern Nigeria to the Ogowé River in the Gaboon, and eastward across southern Cameroon to the Upper Congo, forests in Uganda, and Kakamega in western Kenya Colony. I have never been able to see any

real distinction in color between specimens from the Cameroon, northeastern Congo, and Uganda, and therefore do not recognize the races *kibaliensis* and *intensus*. It may be true, however, that the longest crest feathers measure 10 to 12 mm. in birds from the northeastern Congo, and only 9 to 10 mm. in those of the Cameroon.

In the Upper Congo this black-capped fantail flycatcher is restricted to lowland forests, and it has not been reported from south of the Equator. Nor does it seem to occur in the Lower Congo. It is a bird of the lower undergrowth, especially in damp, well-shaded parts of the forest, where it flits amid the bushes close to the ground. It shows a decided distrust of man and seems to give vent to its feelings with a short, harsh "pick," or "chick," repeated frequently. Seldom are more than two together, but occasionally they join with mixed parties of other insectivorous birds.

The nest described by Bates[1] from the Cameroon was made of moss and cobwebs, placed in a fork of an undershrub, and contained two eggs. These resembled the eggs of *Terpsiphone*, and measured about 18 by 12 mm.

Another nest found by Pitman in early April, 1946, in the Mabira Forest of Uganda was placed 12 feet up in a fork of a sapling in secondary growth. A solid cup of moss, it had pieces of gray-green lichen bound to its outer surface with cobweb, and was lined with fine rootlets and black fungus fibers. The two eggs were whitish, with a conspicuous ring of dark brown spots and a few slate brown markings; dimensions were 17.9 by 12.7 and 18.1 by 12.6 mm.

In the Ituri we secured a young bird not long out of the nest on May 27 and two adults with some enlargement of gonads in May and July. I conclude that nesting takes place during the early part of the rains. The juvenal plumage is of loose texture, dull slate gray, but it lacks white on the abdomen, so there should be no confusion with *T. albiventris*.

Trochocercus albiventris toroensis Jackson

Trochocercus toroensis JACKSON, 1906, Bull. Brit. Ornith. Club, vol. 19, p. 20 (type locality: Kibirau, Toro, Uganda).

Trochocercus albiventris toroensis VAN SOMEREN, 1922, Novitates Zool., vol. 29,

[1] 1930, Handbook of the birds of West Africa, p. 341.

p. 104 (L. Edward; "Semliki Valley"; "North Tanganyika"). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 432 (Toro; west of L. Edward).

Trochocercus nigromitratus toroensis JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 2, p. 941 (in part. Kibirau; "Kigezi").

DISTRIBUTION OF THE SPECIES: Highlands of Fernando Po, Mt. Cameroon, and at 6000 feet near Bamenda and Kumbo in the Cameroon; reappearing again on the Lendu Plateau west of Lake Albert, in Toro near the eastern base of Ruwenzori, and on the highland west of Lake Edward. It does not occur in the lowland Semliki Forest, nor, so far as known, near Lake Tanganyika. On the higher slopes of Ruwenzori and the Kivu Volcanoes it is replaced by *T. albonotatus*.

Specimens from the eastern Congo and Toro differ from *T. a. albiventris* of West Africa in being less blackish on the fore neck and more bluish gray on the back. I find *T. a. toroensis* a valid race, of which we have a pair collected by Jackson at Kibirau, in the neighborhood of Fort Portal, on September 30, 1905. I met with the same race at Djugu, near 5500 feet, in the eastern Ituri District, in 1926. On two different occasions there I found them darting about low down in the forest undergrowth, in much the same way as the lowland *nigromitratus* does.

In 1908 Rudolf Grauer collected no fewer than eight examples at "90 kilometers west of Lake Edward," at an elevation around 1600 meters. These are in the Rothschild Collection and give additional proof that *toroensis* is not simply an eastern race of the lowland *nigromitratus*, as Jackson and Sclater (1938) seem to infer. The supposed occurrence at "Kigezi" seems questionable, as Van Someren (1932) reported only *T. nigromitratus kibaliensis* from "Kegezi."

The nest is doubtless similar to that of *nigromitratus*. One was found at Kibirau, Toro, according to Jackson, on September 30. It contained two eggs, dirty white with a zone of gray and a few faint spots of brown, measuring 17 by 12 mm.

Trochocercus albonotatus albonotatus Sharpe

Trochocercus albonotatus SHARPE, 1891, Ibis, p. 121 (type locality: Mt. Elgon). REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 499 (Ruwenzori); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 306 (Rugege Forest; Mt. Niragongo, 3000 m.; west Ruwenzori, 1800–2500 m.; northwest of L. Tanganyika). JACKSON, 1906, Ibis, p. 536. O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 403 (Mubuku Valley, 5000–8500 ft.). SASSI, 1916, Ann. Naturhist.

Mus. Wien, vol. 30, p. 256 (northwest of L. Tanganyika, 2000 m.); 1924, idem, vol. 38, p. 78. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 259.

Trochocercus albonotatus ? subsp. nov. VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 103 (eastern Congo).

Trochocercus albonotatus subcaeruleus GROTE, 1923, Ornith. Monatsber., p. 19 (type locality: Mlalo, Usambara; also from northwest of L. Tanganyika).

Trochocercus albonotatus albonotatus GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 216 (Burunga). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 430. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 316 (Lulenga; Nya-Muzinga); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 120 (Kibga, 1900 m.). GRANVIK, 1934, Rev. Zool. Bot. Africaines, vol. 25, p. 76. JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 939.

Trochocercus albonotatus near *subcoeruleus* VAN SOMEREN, 1932, Novitates Zool., vol. 37, p. 298 (Kivu–L. Edward region).

DISTRIBUTION OF THE SPECIES: From the highlands of Kenya Colony, Mt. Elgon, and Ruwenzori southward through Tanganyika Territory and the eastern Congo to Nyasaland and the Melsetter District in Southern Rhodesia.

Trochocercus albonotatus albonotatus ranges from Mt. Kenya and Turkana to Ruwenzori and southward at least to the mountains near the north end of Lake Tanganyika. It has been claimed that eastern Congo specimens differ slightly, but I prefer to keep them with the nominate form. *T. a. subcaeruleus* Grote, described from Usambara, is a little more bluish gray on back and sides of breast, but the difference is slight. Specimens from Mt. Rungwe, north of Lake Nyasa, appear to be *subcaeruleus*, so I should expect that race to occupy the whole Nyasa area. *T. a. swynnertoni* Neumann of the Melsetter District has the throat and cheeks gray instead of black, and the white areas on the outer tail-feathers much smaller.

Though not yet found on the Lendu Plateau, *T. albonotatus* is rather numerous on Ruwenzori, the highland west of Lake Edward, the Kivu Volcanoes, and other mountains south to Rugege and the vicinity of Baraka. It lives mainly at elevations between 6000 and 9000 feet, stopping abruptly on Ruwenzori at the lower edge of the tree heath zone. I collected one and saw a number of others along the old foot-road between Lubero and Luofu.

This is a much more conspicuous bird than *T. albiventris*, not only because of its white-tipped outer rectrices, but also because it usually feeds amid the boughs of trees at 15 to 30 feet above the

ground, and is not shy. Two or three often go together, giving a display of unceasing movement as they twist and turn, spread the wings and tail, and dart into the air after small insects. Their twittering was compared by Archer with that of the goldcrest in England.

We took two males in breeding condition on west Ruwenzori on November 30 and December 3, but I do not regard that as proof of any short breeding season. The nest of the nominate race remains to be discovered, but in Nyasaland Belcher[1] found several built by a closely allied form, in shrubs in thick woods. These were small shallow cups, outwardly of dark green moss with a lining of fine strips of a grayish white lichen. Two eggs were the rule, buffy cream color, with a band of confluent spots of brown and blue. One measured 17 by 12 mm.

Trochocercus cyanomelas vivax Neave

Trochocercus vivax NEAVE, 1909, Ann. Mag. Nat. Hist., ser. 8, vol. 4, p. 129 (type locality: Bunkeya, Katanga); 1910, Ibis, p. 130, pl. 1 (Dikulwe R., 4000 ft.; Bunkeya R., 3000 ft.). SCHOUTEDEN, 1929, Bull. Cercle Zool. Congolais, vol. 5, p. 103 (Elisabethville); 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 287. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 431. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 941 (Kibirau Forest in Toro; Bugaya I.; Mubende). MOREAU, 1943, Ibis, p. 390 (Katanga; Kungwe-Mahare). WHITE, 1946, Ibis, p. 85 (Mwinilunga District).

Trochocercus cyanomelas vivax FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 293.

DISTRIBUTION OF THE SPECIES: Cape Province north through eastern Africa to Southern Somaliland, Mt. Gargues, Lugalambo and Toro in Uganda, and the Upper Katanga.

Trochocercus cyanomelas cyanomelas (Vieillot), living from the Transvaal southward, has a rather short crest, and the female is more brownish than in the other races. Its large patch of white on the wing is present also in the male of *T. c. bivittatus* Reichenow, which has a much longer crest, but the female of *bivittatus* is a grayish bird with wing-coverts merely tipped with whitish. The range of this latter race extends from Southern Rhodesia and Mozambique north to Kenya Colony and Southern Somaliland, unless perhaps it can be further subdivided because of size differences. *T. c. vivax* is another long-crested race, a little more heavily pigmented, so that even the male has only small pale

[1] 1930, The birds of Nyasaland, p. 205.

gray tips on middle and greater wing-coverts. It is found from the Upper Katanga and neighboring districts of Northern Rhodesia to the eastern side of Lake Tanganyika and the Kyagwe Province of Uganda.

While found at 3000 to 4000 feet in the Katanga, *vivax* is scarcely to be counted as a montane bird, since it seems to skirt the Kivu highland area on the east in reaching Uganda. It has been taken at Mubende and the Mpanga Forest in western Uganda, near 5000 feet, but there are no records within Congo territory in that region. Specimens from Uganda and the Bukoba District in the Rothschild Collection are dated in January, February, April, September, and December; so they would not seem to be merely migrants.

In the Upper Katanga Neave found that it occurred sparingly in forest along streams and river banks. Very active and restless, if once alarmed it disappeared into the densest thickets.

The nest of *vivax* is unknown, but that of *bivittatus* in Southern Rhodesia was described as a small cup of green moss, bound together with spider web and decorated on the outside with silvery lichen. Placed only 2 or 3 feet up, in a fork of a shrub, it contained two eggs, dirty white, blotched with greenish olive and gray.

Trochocercus nitens nitens Cassin

Trochocercus nitens CASSIN, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 50 (type locality: Camma R., Gaboon). EMIN, 1894, Jour. Ornith., p. 170 (old Irumu). REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 500; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 306. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 256 (Beni; Mawambi; Ukaika; Mawambi–Irumu).

Trochocercus nitens nitens BANNERMAN, 1922, Rev. Zool. Africaine, vol. 9, p. 424 (northern Belgian Congo); 1936, The birds of tropical West Africa, vol. 4, p. 289, pl. 9. SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 340 (Basongo); 1925, idem, vol. 13, p. 16 (Kunungu); 1926, idem, vol. 13, p. 200 (Temvo); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 114 (Kotili; Poko). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 431. JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 940.

SPECIMENS: Avakubi, male, November 23; female, March 6; immature male, October 19; immature female, January 6. Gamangui, male, February 10.

ADULTS OF BOTH SEXES: Iris dark brown, rim of eyelids black; maxilla black, a little bluish at base, mandible light bluish with black tip; feet blue.

DISTRIBUTION OF THE SPECIES: Sierra Leone to Uganda; southward to northern Angola and in the Congo to the Sankuru River. *T. n. reichenowi* Sharpe of Upper Guinea ranges eastward to Togoland, and differs from *T. n. nitens* in the darker gray of its underparts. The nominate race extends from the vicinity of Lagos in Southern Nigeria to the southern Cameroon, Gaboon, and lowland forests of the Belgian Congo, thence eastward to the Mabira district in Uganda and southward to Ndala Tando in Angola.

A bird of the undergrowth in heavy forest, this flycatcher has been collected at Angu on the Uelle River by Schubotz, and in recent years I have taken it at Lukolela and at Angumu in the eastern Congo forest near the Equator. It may be expected to reach the vicinity of Kasongo but does not ascend the mountains on the east. It is rather closely related to *T. cyanomelas vivax*, though darker in color and with shorter crest. Both these species have been found near Lugalambo in Uganda.

Seen only occasionally, even in suitable forest, *nitens* is not sociable yet sometimes joins in a mixed bird party. It resembles a *Terpsiphone* in some ways, but its pose while perching is less upright, and its habit of drooping the wings, bowing, and expanding the tail justifies inclusion in the genus *Trochocercus*. One male was heard to give scolding notes that reminded me of the call of *Terpsiphone viridis*. I never heard a song. The diet is exclusively of insects; among them we noted a leaf-hopper.

My dissections indicated that nesting might go on even during the brief dry period of the year and no doubt also at other seasons. A nest found by the Van Somerens[1] in Bwamba in April was a small cup of bark fiber and cobwebs in a fork of an *Albizzia* sapling, 8 feet up. The two eggs were cream colored, with sparse spotting of red-brown to maroon. They measured 20 by 13 mm.

KEY TO THE SPECIES OF *Terpsiphone* IN THE CONGO

1. Crest well developed, its longest feathers usually more than 13 mm. long; adult males with two greatly lengthened median tail-feathers..... .....*T. viridis*
   Crest short or wanting, feathers of hind crown seldom exceeding 11 mm. in length.....2
2. Whole head of adult male usually glossy black, sharply marked off from body

[1] 1949, Birds of Bwamba, Uganda Journal, Supplement, p. 58.

by color; females often have grayer throat, but still there is a rather sharp division of color. One race almost entirely bluish gray, becoming more blackish on crown. Median rectrices, within Congo territory, seldom exceed the others by more than 35 mm..... *T. rufiventer*

Head either glossy black or gray, but not sharply marked off from gray color of chest. Back always chestnut or rufous; median rectrices considerably prolonged in the west, but not in the northeastern parts of its range ..... *T. rufocinerea*

These are the three species that occupy the African continent, and in a large area of the Congo forest they occur together, *rufiventer* and *rufocinerea* dwelling in primary lowland forest, whereas *viridis* frequents second growth and clearings with many trees. In the Upper Congo forest there has been no indication of hybridism among these paradise flycatchers. From the Cameroon only a single case is known of interbreeding between *T. rufocinerea batesi* and *T. rufiventer neumanni*. But in three other widely separated areas there has evidently been considerable hybridization. These are regions where the area of forest has been diminishing, so its extremities are broken up into separate blocks of woodland. The habitat of the forest-dwelling species was thus seriously reduced, and *T. viridis* of the second growth and savannas came into closer contact with them.

The result has been that a considerable population of hybrids between *T. v. viridis* and *T. r. nigriceps*, long known as *T. rufiventer*, now inhabits the Gambia River area and Portuguese Guinea. In color pattern the hybrids bear considerable resemblance to *nigriceps*, and therefore *rufiventer* and *nigriceps* may be considered conspecific, although we may also expect some intermediates between *rufiventer* and *viridis*. At the opposite end of the equatorial forest belt, around the northern shores of Lake Victoria, a similar process of forest reduction has resulted in extensive hybridism by *T. rufiventer somereni* with *T. viridis ruwenzoriae* and *ferreti*. The principal result has been a sizeable population of rufous-breasted hybrids best called *T. rufiventer emini*, as well as aberrant examples with gray or even white breasts, not numerous enough to merit a trinomial name.

Less evident, because the parent species are more alike in color, is the interbreeding of *T. viridis plumbeiceps* with *T. r. rufocinerea* in northwestern Angola. Here the hybrids, called *T. rufocinerea bannermani*, seem to be restricted to the more heavily wooded spots, while the representatives of *T. viridis* occupy the savannas.

It may well be that the effects of this crossing are noticeable also among the paradise flycatchers of the Lower Congo.

Terpsiphone rufiventer mayombe (Chapin)

Tchitrea smithii mayombe CHAPIN, 1932, Amer. Mus. Novitates, no. 570, p. 12 (type locality: Ganda Sundi in Mayombe District; also from Lukolela and Coquilhatville). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, pp. 305 (footnote), 306.

? *Terpsiphone nigriceps* OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, pp. 126, 127.

Terpsiphone ignea SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 340 (in part. Mayombe; Equator District).

Terpsiphone ignea ? SCHOUTEDEN, 1924, Rev. Zool. Africaine, vol. 12, p. 420 (Eala).

Terpsiphone schubotzi SCHOUTEDEN, 1925, Rev. Zool. Africaine, vol. 13, p. 16 (Kunungu).

Terpsiphone rufiventer mayombe CHAPIN, 1948, Evolution, vol. 2, pp. 114, 115, fig. 3.

DISTRIBUTION OF THE SPECIES: Lowland forests of both Upper and Lower Guinea, from the Gambia and Portuguese Guinea to the Congo and Uganda, also to northern Angola and the islands of Fernando Po and Annobon.

The number of valid races is about 12 and the variation in color is extreme, from almost wholly bluish gray to almost entirely rufous, with black head. Most of the representatives have no pronounced crest or greatly prolonged rectrices, but at both western and eastern extremities of the range there is a lengthening of crest and median rectrices that must be due to hybridism with *Terpsiphone viridis*.

Terpsiphone rufiventer rufiventer (Swainson) of the Gambia and Portuguese Guinea has a crest and in the male long median rectrices and some white on the wing. In both sexes the body is deep rufous, with the black throat sharply delimited. *T. r. nigriceps* (Hartlaub), more orange rufous, tail-feathers less often prolonged, and without noticeable crest, has no white on the wing. It ranges from Portuguese Guinea to Togoland.

Terpsiphone rufiventer fagani (Bannerman) of western Southern Nigeria is browner on its upperparts. *T. r. tricolor* (Fraser) of Fernando Po is rufous on the breast, but bluish gray on back, wings, and tail; it differs in its slightly larger size from *T. r. neumanni* Stresemann of the Niger mouth, forested southern Cameroon, and Gaboon.

The gray back of *neumanni* is replaced by rufous in *T. r. smithii* (Fraser) of Annobon Island and *T. r. mayombe* of the Lower and Middle Congo, but the latter two retain some bluish gray on the tail. *T. r. schubotzi* (Reichenow) of eastern Cameroon and the middle Ubangi is likewise rufous above and below, but its head is gray, even in the adult male. *T. r. ignea* (Reichenow), though described from Angola, is more characteristic of the eastern Congo forest, a very rufous form, with reddish brown tail and black head. In the northeastern corner of the Ituri forest *T. r.*

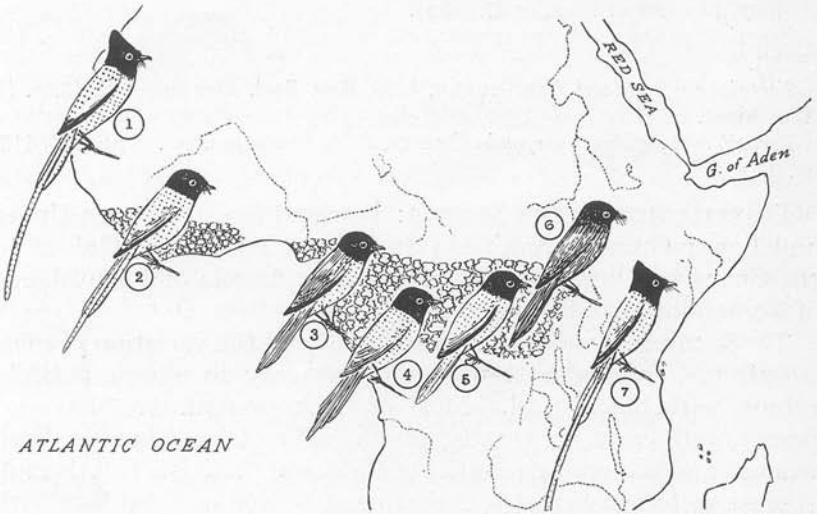

FIG. 28. Some of the 12 races of *Terpsiphone rufiventer*, to show general distribution and variation in color. Dotting indicates rufous coloration, streaking gray. Lengthening of crest and median rectrices on extreme east and west suggests hybridism with *T. viridis*. 1, *rufiventer;* 2, *nigriceps;* 3, *neumanni;* 4, *mayombe;* 5, *ignea;* 6, *bedfordi;* 7, *emini.*

bedfordi, almost wholly blue-gray, replaces *ignea*, but in the forest patches of Uganda *T. r. somereni* Chapin[1] is very like *ignea*, though redder on rectrices and inner secondaries. *T. r. emini* is somewhat duller in color and usually has the central rectrices greatly lengthened and crest far better developed. The western and northern shores of Lake Victoria are occupied by the race *emini*.

There can be no doubt that all these forms are conspecific.

[1] 1948, Evolution, vol. 2, p. 114 (Budongo Forest).

Occasionally along their boundaries they appear to interbreed; sometimes abnormally colored individuals in one area suggest the characters of another race in quite a different region. The similarity of the widely separated *nigriceps* and *somereni* is surprising, and the dissimilarity of *ignea* and *bedfordi* even more so. That Annobon Island should have a race so like the birds of the Lower and Middle Congo is hard to explain, and I regret that I have not been able to see more specimens of *T. r. smithii*. I believe *mayombe* to be deeper rufous, especially on the back, but the differences are slight.

For many years we knew that specimens from the Mayombe Forest were like *T. r. ignea*, but more bluish on remiges and tail quills. Then I myself collected specimens from Ganda Sundi in the Mayombe to Lukolela and Eala on the middle Congo River. In 1942 Malbrant secured a male of *T. r. mayombe* as far north as Dolisie in the French Congo, yet *neumanni* is said to extend southward to the mouth of the Shiloango River. In any case the range of *mayombe* is known to extend from the Mayombe Forest to the Ruki River. It is a bird exclusively of heavy forest, and joins in mixed bird parties exactly like *ignea*, giving the same "zrĕ-zrĕ" calls. Old nests found in the undergrowth of primary forest at Lukolela and Eala were exactly like those of *ignea*.

Terpsiphone rufiventer schubotzi (Reichenow)

Tchitrea schubotzi REICHENOW, 1911, Ornith. Monatsber., p. 82 (type locality: Bangui, on Ubangi R., French Equatorial Africa). SCHUBOTZ, 1912, Ber. Senckenbergischen Naturf. Gesellsch., vol. 43, p. 335.

Terpsiphone schubotzi SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 340 (Basongo).

Terpsiphone rufiventris schubotzi STRESEMANN, 1924, Jour. Ornith., p. 90.

Tchitrea smithii schubotzi CHAPIN, 1932, Amer. Mus. Novitates, no. 570, p. 13. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 306. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 593 (Nola; Berberati).

Tchitrea smithii smithii BOUET, 1942, Ois. Rev. Française Ornith., new ser., vol. 12, p. 139 (Yukaduma, Cameroon).

Terpsiphone rufiventer schubotzi CHAPIN, 1948, Evolution, vol. 2, p. 114.

DISTRIBUTION: From Yukaduma in eastern Cameroon, Berberati, and the Ubangi River supposedly to Basongo at the junction of the Sankuru with the Kasai River. This race is very similar to *mayombe*, but the head even of adult males is gray instead of black. It must certainly occur on the Belgian side of the Ubangi River, though I am surprised that a specimen I

took at Eala, farther south, was the black-headed *mayombe*. In any case *schubotzi* is known to occupy a fairly large area in the northern part of the forest belt between *neumanni* and *ignea*.

[*Terpsiphone rufiventer neumanni* Stresemann]

Terpsiphone tricolor neumanni STRESEMANN, 1924, Jour. Ornith., p. 259 (type locality: Attogondama, northwestern Gaboon).

Terpsiphone tricolor BOCAGE, 1881, Ornithologie d'Angola, vol. 2, p. 547 (Loango Coast). STRESEMANN, 1924, Jour. Ornith., p. 90.

Tchitrea tricolor REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 504 (Chinchoxo).

Tchitrea smithii neumanni CHAPIN, 1932, Amer. Mus. Novitates, no. 570, p. 13.

Tchitrea tricolor neumanni BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 307, pl. 11 (Landana).

The gray-backed race of the forests of the Niger Delta, southern Cameroon, and Gaboon was collected by Falkenstein at Chinchoxo near the mouth of the Shiloango and might therefore be expected near the northwest border of the Mayombe district. Thus far I have seen only rufous-backed specimens from the Lower Congo. Nowhere else would *neumanni* be likely to reach our territory.

Terpsiphone rufiventer bedfordi (Ogilvie-Grant)

Trochocercus bedfordi OGILVIE-GRANT, 1907, Bull. Brit. Ornith. Club, vol. 19, p. 40 (type locality: near Mawambi, 3000 ft., Ituri forest, eastern Congo); 1910, Trans. Zool. Soc. London, vol. 19, p. 403, pl. 18, fig. 1. SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 257 (Mawambi–Irumu). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 260 (Kilo). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 217 (Kampi-na-Mambuti).

Tchitrea camburni NEUMANN, 1908, Bull. Brit. Ornith. Club, vol. 21, p. 42 (type locality: Ituri forest). HARTERT, 1920, Novitates Zool., vol. 27, p. 499.

Terpsiphone camburni GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 221 (Kampi-na-Mambuti).

Tchitrea (*Terpsiphone*) *bedfordi* SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 78.

Terpsiphone ignea Mutant *bedfordi* STRESEMANN, 1924, Jour. Ornith., pp. 256–260.

Terpsiphone ignea Mutant *camburni* STRESEMANN, 1924, Jour. Ornith., pp. 257, 260.

Tchitrea bedfordi SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 436. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 115 (Bondo Mabe).

Tchitrea smithi bedfordi SCHOUTEDEN, 1939, Bull. Cercle Zool. Congolais, vol. 16, p. 34 (Mongbwalu).

Terpsiphone rufiventer bedfordi CHAPIN, 1948, Evolution, vol. 2, p. 114, figs. 3, 5.

DISTRIBUTION: Northeast corner of the Ituri forest, from near Mawambi and a point about 60 kilometers south of Irumu northward to Kilo and the forest south of Arebi.

Differing so markedly from the other races by its plain bluish gray coloration, *bedfordi* was at first regarded as a very distinct species, and later on by Stresemann (1924) as a "mutant" of *ignea*. Now we know that it is just as truly a geographic race of *rufiventer* as are *neumanni* and *tricolor*, which are gray only on the back.

In 1914 I looked in vain for *bedfordi* between Avakubi and the Epulu River, although I knew it had been described from near Mawambi. The fact that Ogilvie-Grant (1910) reported both *ignea* and *bedfordi* from Mawambi offers no difficulty, for Woosnam collected the types of *bedfordi* at 3000 feet on October 17, and his specimen of *ignea* at 2500 feet on October 31. Thus he found *ignea* considerably farther to the west as he traveled from Irumu to Mawambi and Avakubi.

After collecting two males of *bedfordi* in September, 1926, in woods just southwest of Irumu, I started on foot toward the new post of Beni, a distance of 120 kilometers on the map, but then said to be 160 by road. At kilometers 25, 48, and 52 (by road) I secured perfectly normal specimens of *bedfordi*, and thus far I saw no bird showing any rufous. Then at kilometer 60 I came upon two birds which seemed very dark red-brown, and was able to shoot one. It proved to be a male, quite plainly a hybrid. Head and throat are grayish black with blue luster; back, wing-coverts, and tail are dark red-brown; breast is dark gray mixed with a little rufous; and under tail-coverts are deep rufous.

The same day, at kilometer 66 I shot an adult male of *ignea*, with normally rufous plumage, very like the eight other specimens, male and female, which I secured between there and Beni. The transition between *bedfordi* and *ignea* thus proved to be unexpectedly abrupt, in an area uniformly forested, with no visible barrier of any sort. At present it would be a very simple matter to verify my observations along the excellent motor road between Irumu and Beni and to study the meeting of the two races in greater detail.

In all its behavior *T. r. bedfordi* was found exactly like *ignea*. Within its range there seemed to be one or two in almost every mixed bird party I encountered, and the "zrĕ-zrĕ" call note was

precisely the same. The name *camburni*, I am sure, was bestowed on an immature example of *bedfordi* and does not deserve any further consideration. The bird from Kirk Falls in the Berlin Museum which Reichenow identified as *camburni* is merely a *Terpsiphone viridis* of abnormally grayish coloration. In southwestern Ankole, too, Van Someren collected a male mutant of *T. viridis ruwenzoriae* that is entirely gray with glossy black head. Normal rufous-backed birds were secured at the same place.

Terpsiphone rufiventer ignea (Reichenow)

Tchitrea ignea REICHENOW, 1901, Jour. Ornith., p. 285 (type locality: Northern Angola); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 307 (Avakubi). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 258 (Moera; Ukaika; Mawambi–Irumu). LÖNNBERG, 1917, Arkiv Zool., vol. 10, no. 24, p. 23. SCHOUTEDEN, 1939, Bull. Cercle Zool. Congolais, vol. 16, p. 51.

Tersiphone nigriceps EMIN, 1894, *in* Flower, Proc. Zool. Soc. London, pp. 602, 606 (Ituri near Urumbi; Kinnene).

Tchitrea emini REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 512 (Bundeko); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 307 (in part. Forest near Beni; Kirk Falls; Lenda R.). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 260 (Zambo; Marissawa; Kokola).

Terpsiphone ignea DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, pp. 13, 32, pl. 6, fig. 2 (Banalia). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 406 (Beni; Mawambi). SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 340 (in part. Ngombe in Kasai). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 220 (Kartushi; Lesse). STRESEMANN, 1924, Jour. Ornith., pp. 256–260.

Tchitrea smithii ignea SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 435. CHAPIN, 1932, Amer. Mus. Novitates, no. 570, p. 13. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 569 (Saidi). VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 72.

Tchitrea smithi ignea SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 115 (Medje; Poko; Kotili; Panga; Rungu; Nava R.).

Terpsiphone smithi ignea SCHOUTEDEN, 1940, Bull. Cercle Zool. Congolais, vol. 16, p. 99 (Equator District).

Tchitrea nigriceps emini VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 72 (Biangolo R.; Bwanandeke; Nyabukoko near Lutunguru).

Terpsiphone rufiventer ignea CHAPIN, 1948, Evolution, vol. 2, pp. 112, 114, figs. 1, 3, 5.

SPECIMENS: Avakubi, two males, February 10, September 29; female, January 15; two immature females, January 11, October 8. Ngayu, two males, December 13, 18; two females, December 15, 25. Medje, female, March 8. Bafwabaka, female, December 31.

ADULT MALE: Iris dark brown, rim of eyelids blue, though but little expanded; bill blue tipped with black; feet grayish blue.

IMMATURE FEMALE: Iris and bill blackish, feet light blue.

DISTRIBUTION: Apparently from the Kasai District and some neighboring part of northern Angola northward to the Uelle River, eastward to the edge of the forest from Beni south to the Manyema District. I have compared a male from Avakubi with Reichenow's type and do not doubt their identity.

The occasional use of the name *emini* for birds from the Semliki

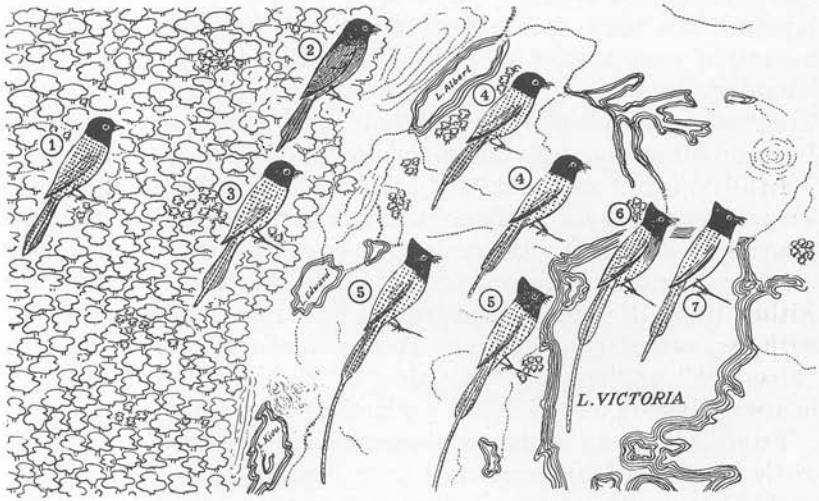

FIG. 29. The races of *Terpsiphone rufiventer* in the eastern Congo and Uganda, and two of the evident hybrid forms known only from Uganda. Dotting indicates rufous coloration. 1, *ignea;* 2, *bedfordi;* 3, *ignea* × *somereni;* 4, *somereni;* 5, *emini;* 6, "*poliothorax*" hybrid; 7, "*albiventer*" hybrid. Various races of *Terpsiphone viridis* range over virtually the whole area.

Valley is not surprising. Uganda specimens of *emini* and *somereni* are often a little duller rufous than *ignea,* so that the young of *ignea* might easily be misidentified. More important is the fact that the rectrices of *ignea* are more brownish than those of *somereni.* The tails of males which I myself collected in the vicinity of Beni and the Semliki Valley are noticeably brighter rufous than those of *ignea* from Avakubi, Ngayu, and Angumu, and their throats are usually grayish black. Semliki birds show no other close approach to those of the Bugoma and Budongo forests in

Uganda, which I have named *somereni*. Near Entebbe and Bukoba the rufous body coloration becomes browner, the tail-feathers of adult males of *emini* may be greatly lengthened, and the crest becomes more evident. It seems best therefore to retain the Semliki specimens under *T. r. ignea*, while admitting that there is a broad zone of intergradation from Beni to the Mabira Forest in Uganda.

There are no published records of *ignea* from the southeastern corner of the Upper Congo forest, but Rudolf Grauer collected a specimen in the region just west of Baraka and another near Kindu. We may thus expect *ignea* to reach the base of the mountain ranges west of Lake Edward and Lake Kivu. The boundary between *ignea* and *bedfordi* is a line running from near Gombari to the vicinity of Mawambi, and then east to the Beni–Irumu road at about 80 kilometers north of Beni.

In all the forest area from Medje to Avakubi and Angumu we found *Terpsiphone r. ignea* fairly common, never showing itself in open clearings but haunting the undergrowth of primary forest. There it is usually noticed as a member of a mixed bird party, and keeps within 10 or 12 yards of the ground as it moves along nervously with its varied companions. It has a characteristic call-note, "zree-zree" or "zrĕ-zrĕ," like that of *T. viridis* but louder and hoarser, I thought. If it has a whistled song, I never heard it.

From our young birds and dissections it appeared that nesting in the northern Ituri continued from September to February and probably throughout the whole year. In the Semliki Forest I took males ready to breed on November 7 and February 9. On February 12 I watched a pair at their completed nest, a small cup of green moss, lined with plant fibers and bound round with silky strands, placed in a thin fork about 6 feet from the ground. Although the female sat in the nest, no eggs had yet been laid. It seems safe to predict that the eggs will be two per set, whitish or pinkish white, speckled with red-brown.

[*Terpsiphone rufiventer emini* Reichenow]

Terpsiphone emini REICHENOW, 1893, Ornith. Monatsber., p. 31 (type locality: Bukoba, west shore of L. Victoria). O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 405 (Mpanga Forest, 5000 ft.).

? *Tchitrea emini* REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 307 (in part. Kwidjwi I.). VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 105; 1932, idem, vol. 37, p. 299.

Terpsiphone rufiventris emini STRESEMANN, 1924, Jour. Ornith., p. 90 ("Aruwimi R."; Uganda; west shore of L. Victoria).

Tchitrea nigriceps emini JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 2, p. 945 (Toro; "Semliki Valley").

Terpsiphone rufiventer emini CHAPIN, 1948, Evolution, vol. 2, pp. 114, 119, figs. 3, 5, (lower Kagera Valley).

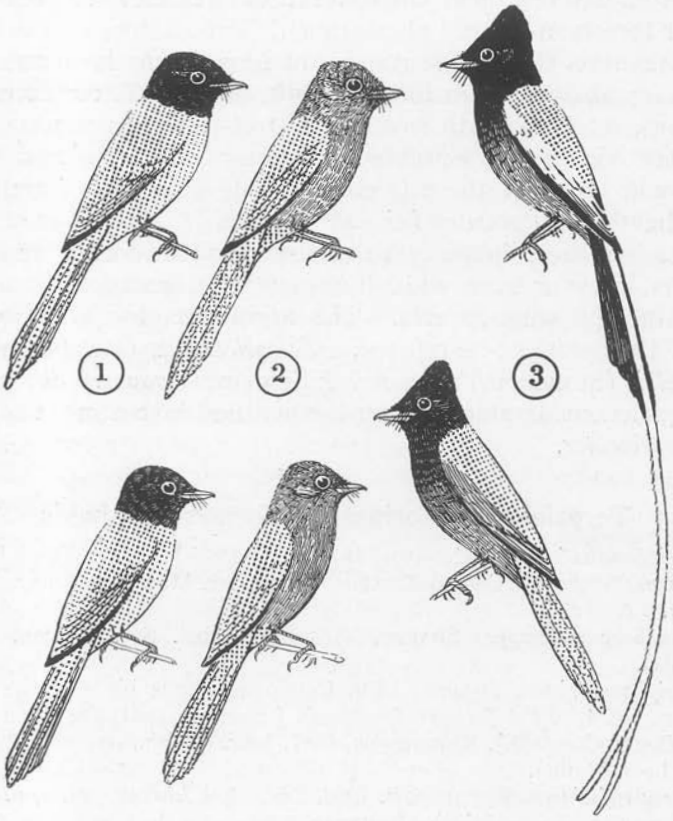

FIG. 30. The three species of *Terpsiphone* living together in the forested areas of the northeastern Congo, between Stanleyville and Avakubi. 1, *T. rufiventer ignea;* 2, *T. rufocinerea batesi;* 3, *T. viridis speciosa.* Upper row, adult males; lower, females. Dotted parts are rufous, streaked areas gray.

The most typical examples of this race, with well-marked crest, lengthened middle tail-feathers, and rather brownish rufous body color, come from Bukoba and Entebbe. Many specimens from heavy forests of the Mabira area, as well as Budongo and Bugoma,

are *T. r. somereni*. The explanation is that *emini* originated by the interbreeding of *somereni* with *T. viridis ruwenzoriae*.

One might also hope to find *emini* at some wooded spot in the upper Kagera Valley on the border of Ruanda, though I have seen no such specimen, nor any from Idjwi Island. Notes on Grauer's labels indicate that near the lower Kagera Valley *emini* is found outside forests in banana plantations. Yet all through the Congo and Cameroon the representatives of *T. rufiventer* keep strictly to the heavy shade in rain forests, while those of *T. viridis* inhabit clearings, second-growth woods, and tree-grown savannas.

In the vicinity of Entebbe, Kakamega, and Kaimosi in the Kavirondo District there is considerable evidence of continued hybridization between *emini* and *T. viridis*. A number of specimens have been taken with well-developed crests, long tail-feathers, gray or even whitish breasts, and occasionally a little white on the wing-coverts. The arguments by Van Someren (1922, 1932) cannot be refuted. *T. poliothorax* (Reichenow) and *albiventris* (Stoneham) are not valid species or races. Since *emini* occupies a considerable area, we are justified in treating it as a race of *T. rufiventer*.

Terpsiphone rufocinerea rufocinerea Cabanis

Terpsiphone rufocinerea CABANIS, 1875, Jour. Ornith., p. 236 (type locality: Chinchoxo, Portuguese Congo). CHAPIN, 1921, Amer. Mus. Novitates, no. 7, p. 7 (Boma).

Terpsiphone melampyra SHARPE, 1873, Proc. zool. Soc. London, p. 717 (Cabinda).

Terpsiphone cristata SHARPE, 1879, Catalogue of the birds in the British Museum, vol. 4, p. 354 (in part. Landana). JOHNSTON, 1884, The River Congo, p. 364 (lower Congo R.). REICHENOW, 1887, Jour. Ornith., pp. 300, 305 (Manyanga; Leopoldville).

Tchitrea rufocinerea REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 507 (in part. Manyanga; Leopoldville). LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 12 (Mukimbungu).

Terpsiphone viridis DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (in part. Lower Congo; Kisantu).

Terpsiphone nigriceps MENEGAUX, 1918, Rev. Française Ornith., vol. 5, p. 259 (Zambi).

Terpsiphones rufocinerea rufocinerea SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, p. 340 (Kamaiembi).

Terpsiphone rufocinerea rufocinerea SCHOUTEDEN, 1924, Rev. Zool. Bot. Africaines, vol. 12, p. 272 (Leopoldville; Kisantu; Kidada). CHAPIN, 1948, Ann. Carnegie Mus., vol. 31, p. 2; 1948, Evolution, vol. 2, pp. 114, 118, fig. 4.

Terpsiphone rufocinerae rufocineva SCHOUTEDEN, 1926, Rev. Zool. Bot. Africaines, vol. 13, p. 200 (Kifuku on Banana Bay).

Terpsiphone sp. SCHOUTEDEN, 1926, Rev. Zool. Bot. Africaines, vol. 13, p. 200 (Tshela; Temvo?; Butu Polo?; Makaia Ntete?).

Tchitrea melampyra rufocinerea SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 434 (Lower Congo).

Tchitrea melampyra melampyra BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 300 (lower Congo R.; Boma).

SPECIMENS: Boma, two males, January 8, 25; two immature males, December 31, January 17; immature female, January 17.

ADULT MALE: Iris dark brown; bill bright blue, blackish at tip and the black running back along edges of mandibles, interior of mouth greenish yellow; rim of eyelids and feet blue.

IMMATURE MALE: Iris dark brown; bill blackish brown; feet light blue.

DISTRIBUTION OF THE SPECIES: From the region of Kumba and the base of Mt. Cameroon through lowland forests eastward to the Ituri District and south nearly to Novo Redondo on the coast of Angola. The name *melampyra* Verreaux has often been used for this species, but Stresemann has examined the type of *melampyra* and found it to be a representative of the species *viridis* without any very distinctive markings.

Terpsiphone rufocinerea rufocinerea has the crown feathers only 8 to 10 mm. long, so they do not form any noticeable crest. The median rectrices of adult males are elongated, but no white usually appears on wings, back, or tail. The head is glossy black, under tail-coverts rufous. This nominate race is found from the Lower Congo and Stanley Pool north to the Rio Muni, and there begins to intergrade with the following race. Yet males from as far north as the British Cameroons may be rather blackish on the crown and may have median rectrices somewhat lengthened.

Terpsiphone rufocinerea batesi, lighter and gray on the head, brighter rufous on the back, and with median rectrices seldom extending more than 25 mm. beyond the others, is a bird of heavy forests from the southern Cameroon eastward to Ukaika in the Ituri and southward supposedly to Luebo in the Kasai District.

In northwestern Angola another race, *T. r. bannermani* Chapin,[1] is found from Ndala Tando to near Novo Redondo. It has the head grayer than the nominate form, crown feathers a little longer

[1] 1948, Ann. Carnegie Mus., vol. 31, p. 3 (Ngara, northwestern Angola).

(about 15 mm.), and the median rectrices of adult males prolonged. It is practically intermediate in color between *rufocinerea*

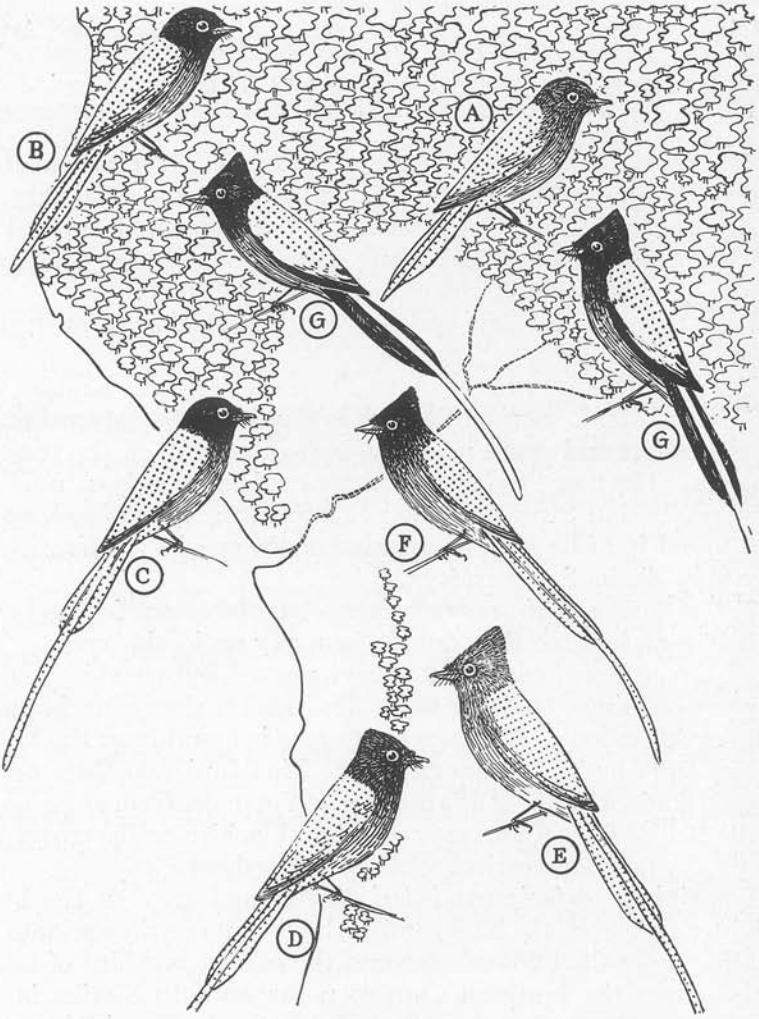

FIG. 31. Diagram to explain apparent hybridism between *Terpsiphone rufocinerea* (A to D) and *T. viridis* (E to G). A. *T. r. batesi* of the Upper Congo. B, C. *T. r. rufocinerea* of coastal area from Cameroon to Congo. D. *T. r. bannermani* of northwestern Angola. E. *T. v. plumbeiceps*, breeding over most of Angola. F. *T. v. "melampyra"* of the Lower Congo. G. *T. v. speciosa*, of Cameroon, Gaboon, and Upper Congo. Dotting indicates rufous coloration, streaking gray.

and *T. viridis plumbeiceps*. The latter bird occupies this part of Angola, too, generally in more open vegetation. The gap between the *viridis* group and *rufocinerea* is thus bridged by hybridism in northwestern Angola. Yet in the Ituri *T. rufocinerea batesi* and *T. viridis speciosa* live side by side without interbreeding, and they are restricted to different types of vegetation.

The nominate race of *rufocinerea* was common about Boma, frequenting rather open groves of trees, such as the rubber plantations at Kalamu. Its behavior was like that of *T. viridis*, rather than of the forest-haunting *T. r. batesi* in the Ituri, and the husky call notes were similar. But the song of *rufocinerea*, instead of being whistled, was a slow repetition of syllables sounding like "zee, zee, zee. . ."

At Ganda Sundi, a large clearing in the Mayombe Forest, I noticed *rufocinerea* a few times near the houses and in the cocoa plantations but not in primary forest. *T. viridis* I did not see there. At Tshela Schouteden also collected *rufocinerea*, but at Temvo he obtained a male with a little white on wing-coverts and secondaries, though its tail is mostly rufous and the median rectrices are little prolonged, which I should prefer to call *T. viridis*. I regret that I have not examined the other specimens from the Mayombe which puzzled him, for it is my belief that in this area there is often more difficulty with paradise flycatchers than in most other regions. Certain specimens from Ngombe Lutete and Brazzaville suggest that *T. r. rufocinerea* may have interbred even there with *T. viridis*.

In the Lower Congo *rufocinerea* certainly nests during the rains, for I took a male with gonads enlarged at Boma in early January. Two of the immature birds in December–January were not more than six or eight weeks old. The young female was unusually pale beneath, whitish on breast, flanks, and abdomen, with pale salmon under tail-coverts. Another young bird collected by Bohndorff at Ngombe Lutete suggests that breeding may continue at least until June.

Terpsiphone rufocinerea batesi Chapin

Terpsiphone batesi CHAPIN, 1921, Amer. Mus. Novitates, no. 7, p. 6 (type locality: Medje, northern Ituri District, Belgian Congo; also from Bafwasende; Avakubi; Bafwabaka).

Tchitrea rufocinerea REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 507 (in part. Aruwimi R.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 258 (Mawambi; Ukaika; Mawambi-Irumu).

Terpsiphone rufocinerea batesi SCHOUTEDEN, 1923, Rev. Zool. Bot. Africaines, vol. 11, p. 340 (Luebo); 1924, idem, vol. 12, p. 420 (Eala). CHAPIN, 1948, Ann. Carnegie Mus., vol. 31, p. 2; 1948, Evolution, vol. 2, pp. 112, 114, figs. 1, 4.

Tchitrea (Terpsiphone) batesi SASSI, 1924, Ann. Naturhist. Mus. Wien, vol. 38, p. 79.

Terpsiphone rufocinerea STRESEMANN, 1924, Jour. Ornith., p. 91 (upper Ituri).

Tchitrea melampyra batesi SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 434. BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 302. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 114 (Nava R.).

SPECIMENS: Bafwasende, male, September 23. Avakubi, three males, January 15, 21, June 7. Medje, male, March 31; female, May 8. Bafwabaka, male, December 28; two females, December 28, January 3.

ADULT MALE: Iris dark brown, rim of eyelids blue; bill blue with black tip; feet grayish blue. Flesh colors of female only a trifle duller.

DISTRIBUTION: Heavy forests from the base of Mt. Cameroon and the coast to the southward, east to the Upper Congo, reaching Luebo on the south and Angumu and the Ituri forest in the northeast. I have seen no specimen from the Semliki Valley, nor did I notice this paradise flycatcher between Irumu and Beni. Specimens from the Ituri have median rectrices not more than 15 mm. longer than the others. They average distinctly lighter gray on the breast than those of the southern Cameroon, and I believe that complete intergradation with the nominate race takes place toward the Gaboon. At Luebo in the Kasai Schouteden collected an adult male which seems even more vivid orange rufous on back, wings, tail, and under tail-coverts than my specimens of *batesi* from the Ituri. Its under wing-coverts, too, are orange rufous. His male example from Eala is more like Ituri birds.

About Avakubi and Medje this gray-breasted paradise flycatcher is a common bird, accompanying mixed bands of other small birds in the primary forest, out of which it is never seen. Its call note is like that of *viridis*, but *batesi* seemed to have no whistled song, though in the Cameroon Bates credited it with one like that of *viridis*, in more subdued tone.

The season of reproduction must last throughout the year, for all but one of our specimens from the Ituri were found to be in condition to breed. The same was true of a male secured at Angumu in July, 1937. The nest is a small cup, externally of

green moss, placed in a fork of a bush or small tree in the forest, 4 or 5 feet above the ground. Two young form a brood, we found, and their scanty natal down is dark gray. Parents of both sexes were caught on nests. Eggs found by G. L. Bates[1] measured approximately 19 by 14 mm. and were creamy white spotted with light reddish, and about the larger end with chocolate brown and lilac gray.

Terpsiphone viridis plumbeiceps Reichenow

Terpsiphone plumbeiceps REICHENOW, 1898, *in* Werther, Die Mittleren Hochländer des nördlichen Deutsch-Ost-Afrika, p. 275 (type locality: Malanje, northern Angola; also from Pungo Andongo and Kwango R.). SALVADORI, 1907, Boll. Mus. Zool. Anat. Comp. Torino, vol. 22, no. 570, p. 4 (Lukonzolwa). CHAPIN, 1921, Amer. Mus. Novitates, no. 7, p. 7 (Bengamisa; Vankerckhovenville). SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, pp. 341, 399 (Basongo; Luebo; Kamaiembi; Kabambaie; Ngombe in Kasai; Kwamouth); 1924, idem, vol. 12, p. 272 (Kidada); 1925, idem, vol. 13, p. 16 (Kunungu). STRESEMANN, 1926, Ornith. Monatsber., p. 87.

Terpsiphone sp. SCHALOW, 1886, Jour. Ornith., p. 413 (Lufuku R.); 1887, idem, p. 238 (west of L. Tanganyika).

Terpsiphone melanogastra DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, no. 3, p. 148 (L. Tanganyika). MATSCHIE, 1887, Jour. Ornith., p. 153 (Mpala; Masembe; Lufuku; Lukumbi; "Lualaba").

Tchitrea plumbeiceps REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 510 (Manyanga; Yambuya ?); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 307. LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 12 (Mukimbungu). NEAVE, 1910, Ibis, p. 79, 130 (Kambove; Dikulwe R., 4000 ft.; Bunkeya R.; Lufupa R., 4000 ft.). MOURITZ, 1914, Ibis, p. 37 (Moushosi R.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 258 (Beni). SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 287. ROBERTS, 1940, The birds of South Africa, p. 289. WHITE, 1944, Ibis, p. 147 (Luapula R.).

Terpsiphone perspicillata var. *plumbiceps* DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (Lower Congo).

Terpsiphone perspicillata plumbeiceps GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 220 (Mukimbungu). DE RIEMAECKER, 1927, Rev. Zool. Africaine, vol. 14, p. 280 (Elisabethville).

Terpsiphone viridis plumbeiceps STRESEMANN, 1924, Jour. Ornith., p. 91. HOESCH, 1938, Jour. Ornith., pp. 328, 329, pls. 14, 15. CHAPIN, 1948, Evolution, vol. 2, pp. 117, 118, fig. 4.

Tchitrea perspicillata plumbeiceps SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 434. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 114 (Niarembe; Mahagi Port; Poko; Panga). VERHEYEN, 1947, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 23, no. 10, p. 3 (Musosa).

Tchitrea plumbeiceps plumbeiceps WHITE, 1946, Ibis, p. 86 (Mwinilunga District).

[1] 1907, Ibis, p. 456; 1909, idem, p. 33; 1911, idem, p. 534.

Terpsiphone viridis subrufa SALOMONSEN, 1949, Dansk Ornith. Foren. Tidsskr., vol. 43, p. 84 (type locality: Kapulo, between Pweto and Moliro, southeast Belgian Congo).

SPECIMENS: Bengamisa, male, September 27. Nzoro, male, April 7.

ADULT MALE: Iris dark brown, rim of eyelids blue; tip of bill black, but remainder blue, as well as corners of mouth; whole interior of mouth greenish yellow; feet rather light blue.

DISTRIBUTION OF THE SPECIES: Throughout most of Africa from Cape Province almost to the southern edge of the Sahara, to Eritrea, southwest Arabia, and the Hadhramaut Coast. About 10 races deserve recognition. Adult males of all forms grow two long median rectrices, and their plumage is apt to be most deeply pigmented in the moist equatorial regions, some individuals becoming largely blackish. White-backed males are found in some of the same equatorial countries and are also common in the Sudanese belt and from southern Abyssinia to the coast of northern East Africa. Other males with rufous backs commonly occur with them. The crest is always well developed.

Thus from the Kasai District and the region of Kilimanjaro northward, males show varying amounts of white on the wings, tail, and back. Some appear to retain the rufous back and tail even in regions where others become white, so that they are best regarded as color phases. The exact extent of white, too, varies geographically. In listing the races it seems best to begin in the south, where the coloration is most stable.

Terpsiphone viridis perspicillata (Swainson)[1] is rufous on back, wings, and tail, with glossy black head, gray breast, and whitish under tail-coverts. It ranges from Cape Province to Mozambique, and is replaced by the grayer-headed *T. v. plumbeiceps* from the Transvaal and Southwest Africa to the Katanga and northern Angola. But the race *plumbeiceps* is exceptional in its migratory behavior, and in the off season it wanders northward to the Cameroon and northern Congo. It has also been reported from eastern Africa north to the mouth of the Tana River, but those records seem very questionable.

Terpsiphone viridis violacea, described from Nyasaland, must be intermediate in color between the two foregoing, and its range is

[1] The correct name for this subspecies is perhaps *T. v. granti* (Roberts), 1948, Bull. Brit. Ornith. Club, vol. 68, p. 129.

not yet well understood. *T. v. ungujaensis* Grant and Mackworth-Praed,[1] of eastern Tanganyika Territory is very like *perspicillata*, but smaller. Another race of eastern Africa usually without white on wings, back, or tail is *T. v. ruwenzoriae*, with rather rufous under tail-coverts. It extends from the country west of Kilimanjaro to Lake Edward and the northern end of Lake Tanganyika.

Terpsiphone viridis suahelica Reichenow, of Kilimanjaro and highlands in Kenya Colony, usually has some white on the wings of adult males, but the back and tail remain rufous. *T. v. ferreti* of Northeast Africa often has males with white backs and tails, at least in southern Abyssinia, the Sudan, Uganda, and parts of Kenya Colony. To the westward across the Sudan, even to the vicinity of Bamako on the Upper Niger, white-backed males with white tails are common. To the west of Lake Chad they might be regarded as a color phase of *T. v. viridis* (Müller), which was described from Senegal. But in western Senegal all males are deep rufous on the back, white only on the wings, with head and chest very blue-black and glossy, under tail-coverts rufous. Such birds occur in the coastal regions southeastward to Sierra Leone and perhaps to Southern Nigeria. White-backed males seem to make their appearance only along the northern edge of the Upper Guinea forest and toward the Niger Delta. They are usually blacker on the breast than the corresponding phase of *ferreti*. *T. v. restricta* Salomonsen, occupying the Sesse Islands in Lake Victoria, is rather similar to nominate *viridis* and seems not to become white on the back.

There remains the vast forest area of Lower Guinea where for the present it seems best to unite all the rather variable populations as *T. v. speciosa*. An earlier name is *melampyra* Verreaux, but the type may not be an adult male, and it has no white in its plumage. In some regions, like the Ituri forest, males of *speciosa* are mostly chestnut backed, with a white area on the wing and the long middle tail feathers white. In other areas white-backed males are more common, but all their outer rectrices remain blackish. Still other individuals are more or less blackish on the back, and a few have long median rectrices that are mainly black.

To return to *Terpsiphone v. plumbeiceps*, a rufous and gray race with no color phases, I must point out that while it nests in Congo

[1] 1947, Bull. Brit. Ornith. Club, vol. 68, p. 42 (Zanzibar Island).

territory only in the southernmost parts, in and near the Katanga and possibly the southern Kwango District, it is highly migratory in the off season. Thus specimens have been taken as far north as Bitye in the Cameroon, Bambili and Nzoro in the northeastern Congo. Most of these records are for months between April and October. In Southwest Africa, on the other hand, this flycatcher reappears annually around the first of November and leaves again in the latter part of April after nesting. Even in Northern Rhodesia the occurrence is seasonal, but in the Katanga it has been reported throughout the year.

Whether *plumbeiceps*, or possibly *violacea*, is the race breeding in Marungu I cannot be certain. Therefore I leave the published records from the region between Lake Moero and Lake Tanganyika under *T. v. plumbeiceps* for the present. For the same reason, I cannot say whether migrants reported from Mahagi Port and from East Africa are really *plumbeiceps* or *violacea*. The latter race seems to be equally migratory.

It has too often been said that *plumbeiceps* could not be conspecific with *viridis* and *perspicillata* because their ranges overlapped. My own experience left no doubt that this overlapping is due merely to migration. After collecting a large series of *T. v. speciosa* in the northeastern Congo, I finally obtained one adult male of *plumbeiceps*, plainly non-breeding, in a gallery forest near Nzoro in 1912. Then in 1914 I shot a second male in a clearing in the forest near Bengamisa. Even at Luluabourg in the Kasai, where Father Callewaert secured several examples of *plumbeiceps*, there seems to be no evidence of their nesting.

During the breeding season, which commences in late September and lasts at least until February, the behavior is like that of the various other races of the Congo. Neave called *plumbeiceps* ubiquitous in woodland country of the Katanga. The nest of this form is a cup placed in a horizontal fork of a tree, usually within 20 feet of the ground. The dry plant materials of which it is constructed may include lichen, and they are bound round with silk or cobweb. The interior is lined with finer fibers, and sets of eggs are of three, occasionally two. Finely spotted with red-brown and violet-gray on a cream-colored ground, with a wreath near the blunt end, they measure 18–19.4 by 13.4–14.2 mm.

Terpsiphone viridis violacea (Grant and Mackworth-Praed)

Tchitrea plumbeiceps violacea GRANT AND MACKWORTH-PRAED, 1940, Bull.

Brit. Ornith. Club, vol. 60, p. 93 (type locality: Fort Hill, northern Nyasaland); 1940, idem, p. 103 (southeastern Belgian Congo; "Uelle River"). A. W. VINCENT, 1947, Ibis, p. 185 (Elisabethville).

Terpsiphone viridis violacea CHAPIN, 1948, Evolution, vol. 2, p. 117 (southeastern Congo?; L. Albert?).

DISTRIBUTION: Supposedly from Nyasaland to the vicinity of Lake Tanganyika and possibly Morogoro, this form has been said to nest also on Mafia Island. At best *violacea* differs from *plumbeiceps* only by having the crown slightly darker and glossier, as one might expect from the location of its breeding area. Its occurrence in Northern Rhodesia is doubtful, and the supposed records from Kenya Colony and the northeastern Congo must be attributed to migrants.

To the race *violacea* Alfred Vincent referred the birds he found nesting around Elisabethville from October to mid-December, but the identification may be questioned, since White and Winterbottom[1] have found no specimen from Northern Rhodesia agreeing with *violacea*.

Possibly this is the breeding race of Marungu, where Rockefeller and Murphy collected specimens at Moba and Lake Suzi in February and March. A breeding male from Moba does seem to have the crown more blackish, more glossed with green, than *plumbeiceps* from Angola. At Kasenyi on Lake Albert, on August 28, 1926, I collected a very similar adult male, in non-breeding condition. This I have always regarded as an off-season visitor, and I have seen other specimens resembling it from near Usuvi, June 18, and from the northwest shore of Lake Tanganyika, May 28, August 5 and 26. A number of records from the eastern Congo, here left under *plumbeiceps*, may refer to *violacea*. But the migrants I collected at Nzoro and Bengamisa in the northeastern Congo are certainly *plumbeiceps*.

Terpsiphone viridis ruwenzoriae (Grant and Mackworth-Praed)

Tchitrea perspicillata ruwenzoriae GRANT AND MACKWORTH-PRAED, 1940, Bull. Brit. Ornith. Club, vol. 60, pp. 93, 103 (type locality: Mokia, southwest Uganda; also from Ankole).

? *Terpsiphone viridis* DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (in part. Tanganyika).

Terpsiphone suahelica O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 404, pl. 19, fig. 13, egg (Mokia; Beni).

[1] 1949, A check list of the birds of Northern Rhodesia, p. 87.

Tchitrea viridis REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 306 (Semliki Plain; north slope of Mt. Sabinyo; Beni ?). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 257 (Urundi; northwest of L. Tanganyika; Baraka; Ruzizi Valley; Kisenyi; Beni).

Tchitrea perspicillata suahelica REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 307 (in part. Tshingogo country). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 260 (Baraka; Mboka; Molekera; old Mission St. Gustave; Mutiba; Mawagongo; Talia and Semliki rivers).

Tchitrea perspicillata mahelica SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 258 (Urundi; Baraka; Kasindi).

Terpsiphone perspicillata suahelica GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 220 (Sake; Lulenga).

Terpsiphone viridis, perspicillata type STRESEMANN, 1924, Jour. Ornith., p. 93 (region of L. Kivu and L. Edward).

Tchitrea viridis suahelica SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 316; 1933, idem, vol. 22, p. 376 (Rugegera); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 121 (Kibati; Ruhengeri; Rwindi); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 339 (Kibingo; Kirinda; Astrida); 1943, idem, vol. 37, p. 271 (Gabiro). VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 31 (Munigi; Kamatembe).

Tchitrea melanopyra rufocinerea HENDRICKX, 1944, Ostrich, vol. 15, p. 208 (southwest of L. Kivu).

Terpsiphone viridis ruwenzoriae CHAPIN, 1948, Evolution, vol. 2, pp. 117, 119.

Terpsiphone viridis kivuensis SALOMONSEN, 1949, Dansk Ornith. Foren. Tidsskr., vol. 43, p. 86 (type locality: Kibati, Kivu Distr., Belgian Congo).

DISTRIBUTION: From the upper Semliki Valley and lowlands near Lake Edward, Lake Kivu, and the northwest shore of Lake Tanganyika to Ankole, the south shore of Lake Victoria, and the region west of Kilimanjaro. If the separation from *suahelica* is justified, then this race is characterized by the lack of any white on upper wing surface, the rufous under tail-coverts, and glossy blackish head.

It is the breeding representative of the species in the eastern Congo from the neighborhood of Baraka through the more open areas of the Kivu District to the southern base of Ruwenzori. But just to the west, at the edge of the great Congo forest, and in the forested Semliki, it is replaced by *T. v. speciosa*.

Terpsiphone viridis ruwenzoriae is really a lowland bird, yet it is found in the Kivu outside the mountain forests up to 7300 feet, the altitude at which I collected two specimens to the west of Lake Bunyoni. It also lives at Lulenga, around 6000 feet, and Grauer collected it on Wau and Idjwi islands in Lake Kivu, as well as at Usumbura. On the eastern side of the Rutshuru Valley, to my

surprise, I saw *ruwenzoriae* on three occasions in heavy forest near 4000 and 4500 feet. One was with a mixed bird party, behaving much like *T. rufiventer ignea*. To the northwest of Lake Edward, if one sees a crested *Terpsiphone* in woods, it is much more likely to be *speciosa*, and on Ruwenzori and the highlands west of Lake Edward none was noticed above 5000 feet. I took males of *ruwenzoriae* with gonads enlarged in April, May, and June, and it is likely that breeding continues in the Kivu region throughout the year.

Terpsiphone viridis speciosa (Cassin)

Muscipeta speciosa CASSIN, 1859, Proc. Acad. Nat. Sci. Philadelphia, vol. 11, p. 48 (type locality: Camma R., Gaboon).

Terpsiphone cristata SHARPE, 1884, Jour. Linnean Soc. London, zool., vol. 17, p. 425 (Semio); 1890, *in* Jameson, The story of the rear column, pp. 407, 409, 418. SHELLEY, 1888, Proc. Zool. Soc. London, p. 27 (Tingasi); 1890, Ibis, p. 158 (Yambuya). OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 126. SALVADORI, 1911, Ann. Mus. Civ. Genova, ser. 3, vol. 5, p. 448 (Uelle).

Terpsiphone, an *cristata* EMIN, 1894, *in* Flower, Proc. Zool. Soc. London, p. 602 (Ipoto).

Tchitrea melanura REICHENOW, 1901, Jour. Ornith., p. 285 (type locality: Battaibo on Duki R., Ituri District); 1903, Die Vögel Afrikas, vol. 2, p. 503; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 306. SALVADORI, 1912, Boll. Mus. Zool. Anat. Comp. Torino, vol. 27, no. 654, pp. 1–2. SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 260 (junction of Talia and Semliki rivers; Mutiba; Masidongo).

Tchitrea viridis REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 504 (Semio; Tingasi). SCLATER AND M.-PRAED, 1918, Ibis, p. 710 (Mt. Baginzi). SCHOUTEDEN, 1918, Rev. Zool. Africaine, vol. 5, p. 260 (Beni; Masidongo; Zambo; Zumbia; Baraka; Moera; Loashi; Marissawa). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 132 (in part. Tobbo; Dungu; Mangbetu country; Tunguru ?).

Terpsiphone viridis DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 32 (in part. Uelle).

Terpsiphone speciosa DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, pp. 11, 32, pl. 7, fig. 1 (Banalia).

Terpsiphone melanura DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, pp. 12, 32, pl. 7, fig. 2 (Province Orientale; Uelle).

Tchitrea camburni REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 307 (Kirk Falls).

Terpsiphone suahelica SALVADORI, 1915, Ann. Mus. Civ. Genova, ser. 3, vol. 6, p. 279 (Kasai).

Tchitrea speciosa SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 257 (Beni; Moera; Mawambi; Ukaika).

Terpsiphone melanogastra EMIN, 1921, *in* Schubotz, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 3, p. 244 (Dongu).

Terpsiphone viridis speciosa SCHOUTEDEN, 1923, Rev. Zool. Africaine, vol. 11, pp. 341, 399 (Dumbi; Belenge; Tshikapa; Luebo; Kamaiembi; Makumbi; Kwamouth); 1924, idem, vol. 12, p. 420 (Eala); 1925, idem, vol. 13, p. 16 (Bolobo region); 1926, idem, vol. 13, p. 200 (Temvo; Tshela). FRIEDMANN, 1930, The African Republic of Liberia and the Belgian Congo, vol. 2, p. 756 (Bumba); 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 244. CHAPIN, 1948, Evolution, vol. 2, pp. 112, 113, 117, figs. 1, 2, 4.

Terpsiphone viridis viridis STRESEMANN, 1924, Jour. Ornith., p. 91 (in part. North of Congo R.).

Terpsiphone viridis viridis, aberr. *atrata* STRESEMANN, 1924, Jour. Ornith., pp. 92, 93 (Kirk Falls).

Terpsiphone viridis melampyra GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 218 (Kartushi; Kampi-na-Mambuti; Irumu).

? *Terpsiphone rufocinerea* BERLIOZ, 1925, Bull. Mus. Hist. Nat. Paris, vol. 31, p. 351 (Luluabourg).

Tchitrea viridis speciosa SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 433. BOWEN, 1932, Ibis, p. 601 (Rangu in southern Bahr-el-Ghazal Province). SALOMONSEN, 1933, Bull. Brit. Ornith. Club, vol. 54, p. 49. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 114 (Mauda; Dramba; Abimva; Faradje; Dika; Niangara; Rungu; Buta; Panga; Bomili). STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 569 (Kasenyi ?; Saidi). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 2, p. 945. GIL LLETGET, 1943, Bol. Soc. Española Hist. Nat., vol. 41, p. 183 (Luluabourg). VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 72 (Bwana-ndeke; Kalonge; Mongwa near Lutunguru).

Tchitrea viridis viridis BOWEN, 1931, Catalogue of Sudan birds, vol. 2, p. 57 (Mt. Baginzi). BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 294 (in part. Congo forest). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 66 (Brazzaville ?; Ouadda; upper Kemo R.; Bangui).

SPECIMENS: Yanonge, adult male and subadult male, December 10. Stanleyville, three adult males, November 27, 29; female, November 27. Avakubi, 12 adult males, January 9, 26, May 7, August 7, 31, October 13, 16, 17, 29, November 11; five subadult males, January 29, February 6, October 18, November 9; immature male, October 18; juvenile male, May 14; two females, January 24, October 22. Gamangui, three adult males, February 12, 21; female, January 29. Medje, six adult males, January 17, 18, 26, March 6, 13, July 26; two females, March 26, May 18. Bafwabaka, male, January 3. Dungu, three males, January 23, 25, June 7. Faradje, four adult males, September 10, December 27, 30; two subadult males, September 12, 17; two immature males, August 17, September 3; four females, August 21, September 8, December 6, 21; three immature females, July 21, August 19, October 7. Garamba, male, July 16.

ADULTS OF BOTH SEXES: Iris dark brown, widened edge of eyelids blue; bill rather light cobalt blue, changing to black at tip, tongue and whole inside of mouth light yellowish green; feet blue. The blue parts not quite so bright in females, and rim of eyelids less widened.

DISTRIBUTION: Most of the forest area of Lower Guinea, from near Mt. Cameroon, the French Congo, and perhaps the Mayombe Forest, eastward to the Semliki Valley, also in outlying wooded

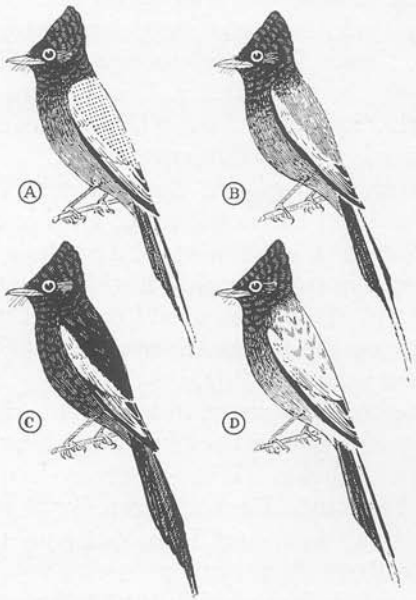

FIG. 32. Four principal color phases among males of *Terpsiphone viridis speciosa* in the forested Upper Congo. Rufous coloration is indicated by dotted pattern. A. Rufous-backed with white on wings. B. Gray-backed with white on wings. C. Black-backed. D. White-backed.

areas north to the southern Bahr-el-Ghazal Province, and south to Luluabourg and the Manyema forest. This race scarcely reaches Uganda save in the Semliki Valley. Its proper name may be *melampyra*, but since Verreaux's type was a male with no white in its plumage it was long confused with *rufocinerea* and deserves further study.

Males of *speciosa* exhibit greater variations in plumage than do those of any other race. In the Upper Congo, for example, the

commonest type is that with rufous back, white patches on the wings, and two white middle tail feathers, the outer rectrices being blackish. But in many places the back becomes mixed with gray or black, or almost wholly black, and in such examples the median rectrices usually are partly black. In other cases the back becomes partly or entirely white, but the outer rectrices usually remain blackish. My own large series from the Ituri and Uelle shows many of these variants, including one male which is black almost everywhere save for white areas on the wings, a few white feather tips on the back, and some irregular white streaking on the black median rectrices. Males of *speciosa* with long rufous rectrices are very rare in the Belgian Congo; such birds usually represent some other subspecies, even if found within the range of *speciosa*. This race is not at all migratory.

Along the eastern edge of the Congo forest I have collected *speciosa* near Moera and the new post of Beni and have seen one adult male at 3700 feet on the southwest base of Ruwenzori. Grauer collected specimens referable to this race west of Baraka, while Rockefeller and Murphy secured four adult males with white backs at Kita-Kita on the Kama River and others of darker color at Itula and Kitutu near the Elila.

In the Kasai Father Callewaert obtained a series of *speciosa* at Luluabourg, many with rufous backs and two long white rectrices, others with white backs. While Schouteden has reported *speciosa* from the Mayombe Forest, I scarcely think it occurs elsewhere in the Lower Congo, and I am not sure that any white-tailed males occur about Stanley Pool.

One male collected at Brazzaville by Malbrant has the whole tail rufous, median quills 171 mm., no white on wings or tail. This specimen resembles the type of *melampyra*. When ascending the Congo River, one begins to see undoubted males of *speciosa* near Kwamouth and Lukolela. It is characteristic of the forested area, yet it avoids the heavy primary forest and lives in clearings and open second growth. Thus these attractive birds are often to be seen about villages, generally in pairs, and by nature wary. A fleeting glimpse of the long white tail feathers may be the first intimation of their presence, as they dart among the lower trees. A wheezy, scolding call, "zree-zree!" is uttered between the graceful swoops after insect prey, or as they chase each other from bough to bough. Groves of mango or rubber trees and planta-

tions of coffee in the clearings are favored spots, as are groups of leafy trees amid savanna. More than two males are seldom found together, for they seem too vain to be sociable. The pleasant whistled song, "twee-twee-twee, twee-twee-twee, twee-twee," with a sweet quavering quality, is frequently heard.

Strange then does it seem for males to share the duties of incubation with their mates. I have found them sitting with the long white train projecting far out from the edge of the nest, a small cup placed in a fork of some small branch, 8 to 15 feet up. The materials include soft strips of bark and grass; the exterior is decorated with some green moss or bits of lichen and is often bound round with cobwebs. The lining may include plant down.

The eggs are white, with small scattered spots of rufous forming a wreath about the larger end, and measure 17.3–19.6 mm. by 13.2–14.7 mm. Sets of two are common, but three are not unusual. At Avakubi a nest contained one egg of the flycatcher and another dull greenish egg spotted with rufous, laid perhaps by a cuckoo (*Chrysococcyx*). The latter measured 19.9 by 14 mm., so it may have been laid by *C. klaasi*. In a nest at Medje in a small bark-cloth fig tree the sole occupant was a very young *Chrysococcyx cupreus* about which the male *Terpsiphone* was extremely solicitous.

Nests were found in the Ituri District on May 7, 15, and July 26. But there is no short season of reproduction. Of 34 specimens of all ages obtained in the Ituri, 25 showed decided enlargement of the gonads. There were birds in breeding condition in all four quarters of the year, varying only in proportion to the numbers collected. Subadult males with tail feathers little lengthened agreed in this respect with fully plumaged males, and it seemed that the enlarged state of the testes was permanent. G. L. Bates[1] long ago found the same condition prevailing in the forest of southern Cameroon, in this and a few other birds. It seems equally true in the Ituri of *Terpsiphone rufocinerea batesi*.

In the savannas of the Upper Uelle, where a nest of *speciosa* was found near Dungu on June 7, conditions were very different. Of the 16 males dissected, only two seemed ready to breed. Six of the inactive birds, to be sure, were *ferreti*, but the local climate clearly affected *speciosa* as well, and I should scarcely expect it to nest there during the dry season.

[1] 1908, Ibis, pp. 558–570.

Terpsiphone viridis ferreti (Guérin)

Tchitrea ferreti GUÉRIN-MÉNEVILLE, 1843, Rev. Zool., vol. 6, p. 162 (type locality: Abyssinia). ANTINORI, 1868, Boll. Soc. Geogr. Italiana, vol. 1, p. 116 (Niam-Niam Land, near present Bafuka). PETERMANN, 1868, Petermann's Mitt., p. 416.

Terpsiphone perspicillata suahelica REICHENOW, 1898, *in* Werther, Die Mittleren Hochländer des Nördlichen Deutsch-Ost-Afrika, p. 275 (in part. Ndussuma).

Tchitrea perspicillata suahelica REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 509 (Nyangabo); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 307 (in part. Kirk Falls).

Terpsiphone duchaillui O.-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 404 (Mokia, southeast of Ruwenzori).

Tchitrea viridis SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, pp. 132, 133, 134 (in part. Mangbetu country; Mswa).

? *Terpsiphone viridis ferreti* GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 219 (Lesse).

Terpsiphone viridis CHAPIN, 1925, Nat. Hist., vol. 25, p. 462, fig. on p. 463 (Mangbetu country).

Terpsiphone melanogastra EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 102 (Nsabé on L. Albert).

Terpsiphone melanogaster EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 27 (Mswa on L. Albert).

Tchitrea viridis ferreti SALOMONSEN, 1933, Bull. Brit. Ornith. Club, vol. 54, p. 49 (Uganda and Ruwenzori). BLANCOU, 1933, Ois. Rev. Française Ornith., new ser., vol. 3, p. 328 (upper Ouaka in southern Ubangi-Shari). GRANT AND M.-PRAED, 1940, Bull. Brit. Ornith. Club, vol. 60, p. 101 ("Belgian Congo, north of 6° south latitude").

Tchitrea viridis viridis BANNERMAN, 1936, The birds of tropical West Africa, vol. 4, p. 294, pl. 10 (in part. Northern Belgian Congo).

Terpsiphone viridis viridis FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 244 (Bahr-el-Ghazal; west Nile district of Uganda).

? *Tchitrea viridis* SCHOUTEDEN, 1940, Rev. Zool. Bot. Africaines, vol. 34, p. 60, (Kawa Forest).

? *Tchitrea viridis speciosa* SCHOUTEDEN, 1941, Rev. Zool. Bot. Africaines, vol. 34, pp. 266, 365.

Terpsiphone viridis ferreti CHAPIN, 1948, Evolution, vol. 2, pp. 116, 119.

SPECIMENS: Nzoro, male, April 8. Faradje, five males, March 2, 3, 12, December 22.

Colors of soft parts the same as in *T. v. speciosa*.

DISTRIBUTION: Southern Arabia (if *harterti* cannot be upheld), Eritrea, British Somaliland, and most of Northeast Africa, thence west to the central Sudan, possibly even to the upper Niger, and south to Uganda, the Tana River, and the eastern coast near Tanga. There is considerable diversity over this vast area, and

specimens from the Abyssinian highland, where they are said to occur up to 9500 feet, are usually larger than those of the Sudan and of coastal East Africa.

In the highlands near Nairobi white-backed males seem wanting; the rufous birds do not even grow white tail feathers, so per-

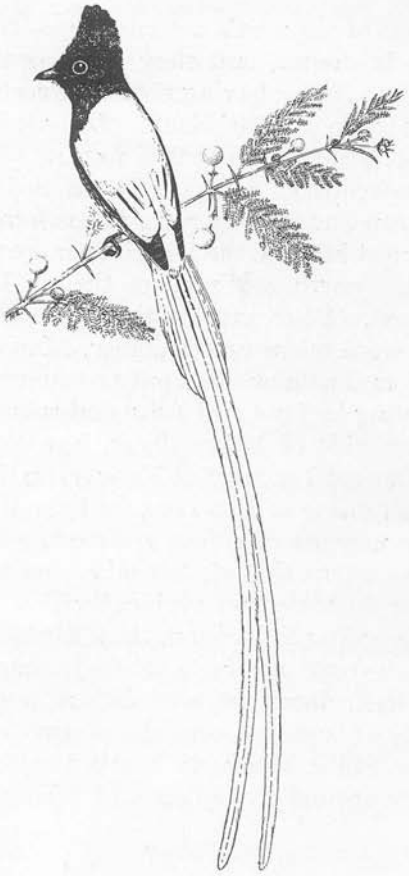

FIG. 33. White-backed male of *Terpsiphone viridis ferreti* from Faradje in the northeastern Congo.

haps they are best placed with *T. v. suahelica* which inhabits the slopes of Kilimanjaro. Sclater believed that nominate *viridis* ranged from Senegal all across the Sudan to the Blue Nile and the interior of Kenya Colony. But the deep rufous males of Senegal

cannot be matched by any birds from the eastern Sudan, and males in the white-backed phase from the northern Gold Coast and Nigeria are apt to be more blackish on the breast than those of northern Uganda and Kenya Colony. Nevertheless Hartert and Bates applied the name *ferreti* to birds of the Sudanese belt west to the Niger.

In the savannas of the northeastern Congo white-backed males are certainly to be found, and they differ from *speciosa* in the corresponding plumage by having the outer rectrices all white, or only narrowly streaked with black. Long-tailed males of the rufous phase also occur there, with a narrow white stripe on the wing and all the rectrices rufous. These birds are exactly like those of the eastern Sudan, here regarded as *ferreti*. I doubt that these birds ever nest in the Uelle District; more probably they are migrants from the north, and none of the six I collected was in condition to breed. Four were of the white-backed phase, two rufous; and all were taken in December, March, and April. In Darfur Lynes[1] found similar birds only as summer visitors, arriving in April, nesting in June and July, emigrating about October.

On the western side of Lake Albert, however, *ferreti* may be resident. A male that I secured at Kasenyi on September 3, 1926, was of the rufous phase of this race, had small gonads, and was growing a whole new set of rufous rectrices. *T. v. ferreti* occurs regularly on the eastern side of that lake, and records of *speciosa* from the western shore deserve verification.

In Uganda, according to Jackson, these birds have two breeding seasons, in March–June and in October–January. The nest is a small cup in a fork, decorated with lichen, and like that of the other races. A set usually consists of two eggs, occasionally three; they are white, sparingly marked with brick-red, more thickly in a zone around the larger end. Dimensions are about 20.5 by 13 mm.

FAMILY **HIRUNDINIDAE.** SWALLOWS

KEY TO THE GENERA OF SWALLOWS AS REPRESENTED IN THE CONGO

1. Bill distinctly stout and in life bright red, tipped with yellow; wing at least 118 mm. long; tail not forked, shafts of median rectrices project slightly at tips..... *Pseudochelidon* (p. 729)

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[1] 1925, Ibis, pp. 124, 125.

Bill smaller and more flattened, always brown or blackish; median rectrices never with projecting shafts 2

2. Coloration mainly blackish, sometimes with gray or white under wing-coverts, and one species with white crown and throat; bill and feet unusually small; barbs of outer web of outermost primary stiff and truncate, or in males bearing recurved hooks at their tips ..... *Psalidoprocne* (p. 775)

Coloration diverse, but outer barbs of outermost primaries never so stiff or bearing recurved hooks 3

3. Feet entirely covered with small feathers; breast and rump white ..... *Delichon* (p. 774)

Feet wholly naked, or with only a tuft of feathers on back of lower metatarsus 4

4. Back gray-brown to dark brown, without metallic gloss, tail never deeply forked 5

Back blackish, with some sheen, usually metallic blue or green 7

5. Throat and breast thickly streaked with dusky brown on a whitish ground, tail square or even slightly rounded ..... *Phedina* (p. 742)

Throat and breast not conspicuously streaked, though in some cases there is a brown or blackish brown chest band 6

6. Throat white, gray, or brown; no white markings on rectrices. *Riparia* (p. 733)

Throat light rufous; no dark chest band; some of the rectrices have rounded white spots on inner webs ..... *Ptyonoprogne* (p. 743)

7. Tail not deeply forked, outermost quills only 2 to 13 mm. longer than median; rump usually not colored like back, but brown or rufous; bill slightly deepened and culmen slightly ridged ..... *Petrochelidon* (p. 771)

Tail much more noticeably forked, or else its outermost quills have distinctly pointed tips; rump may be glossy black like back, or else rufous or gray 8

8. Rump brownish gray, quite different from the more or less glossy blackish back; crown grayish; tail always deeply forked. . *Pseudhirundo* (p. 739)

Rump black with metallic gloss, or rufous 9

9. Rump colored like back ..... *Hirundo* (p. 745)

Rump color rufous, quite distinct from back ..... *Cecropis* (p. 759)

SUBFAMILY **PSEUDOCHELIDONINAE**

Pseudochelidon eurystomina Hartlaub

Pseudochelidon eurystomina HARTLAUB, 1861, Jour. Ornith., pp. 12, 103 (type locality: Gaboon); 1861, Ibis, p. 322, pl. 11. DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, pp. 13, 30, pl. 8 ("Province Orientale"; "Ituri"). SCHOUTEDEN, 1922, Rev. Zool. Bot. Africaines, vol. 10, p. 323, fig. on p. 326 (Ikengo); 1924, idem, vol. 12, p. 421 (Irebu–Ikengo); 1924, Bull. Cercle Zool. Congolais, vol. 1, pp. 30, 33 (Basoko); 1930, idem, vol. 6, p. 115 (Equator District); 1932, idem, vol. 8, p. 54; 1932, idem, vol. 9, p. 45, 1 fig.; 1934, idem, vol. 10, p. 63. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 596 (near Coquilhatville). CHAPIN, 1931, Nat. Hist., vol. 31, p. 609 (Congo R. near Lukolela). LOWE, 1938, Ibis, pp. 429–437, fig. 5, pl. 8. BANNERMAN, 1939, The

birds of tropical West Africa, vol. 5, p. 300, fig. 60. FRECHKOP, 1941, Animaux protégés au Congo Belge, p. 250, fig. 141.

Pseudochelidon CHAPIN, 1931, Nat. Hist., vol. 31, p. 487, figs. on p. 612.

DISTRIBUTION: From Lake Onangué and the southern Gaboon coast eastward to the middle Congo River between Lukolela and Coquilhatville, the lower Ubangi River up to Betou, and the upper Congo River near Bumba and Basoko. The specimens reported by Dubois (1905) were collected by Weyns and de la Kethulle, respectively, and no precise locality was assigned to them in the Congo Museum register. It may be assumed that they really came from the Congo River near Bumba and Umangi.

The African river martin has somewhat the appearance of a large black swallow with a red beak, but its tail is rather short and very slightly rounded, with small pointed tips on the middle rectrices. The head and chest have a weak purplish sheen, while the back is a little more grayish with a weak greenish gloss. This bird was long referred to the family Artamidae, but in 1938 Percy R. Lowe transferred it to the Hirundinidae. In my opinion it is distinctly unlike any of the true swallows, yet I doubt very much that it is closely allied to *Artamus*, and so for the present it seems wisest to leave it among the swallows, but in a separate subfamily. Its bill is orange-scarlet, becoming yellow at the tip. The iris is scarlet, the rim of the eyelids dull pinkish, and the feet are brownish pink, with pale buff claws.

Long considered a very rare bird, the river martin was found by Schouteden in 1921 to be abundant along the middle Congo River, a little above Irebu, where it was nesting in colonies in early March, during one of the two periods of low water. I had seen a single bird flying near Coquilhatville in December, 1914, but we now know that on this part of the Congo River the birds are usually absent as long as the water is high, and they appear in flocks around the middle of January and early in February. In the early months of 1931 I found half a dozen breeding colonies on the islands upstream from Lukolela and almost to Coquilhatville. Others may well be expected between Lukolela and Bolobo. Nests with eggs were first repored to me on February 3.

From the lower Ubangi River, between Dongo and Liranga, river martins are reported in great numbers during February and March. I have tried to ascertain whether they return in the

other period of low water in July and August. Twice I have traveled up the Congo River during July, when many sand bars were exposed, without having noted *Pseudochelidon*. Yet my friend André Lecocq, long resident at Lukolela, believed that a few did reappear in July or August. All my efforts to verify that supposition over a period of 20 years have failed. It seems clear that *Pseudochelidon* is absent between May and November, and that it does not move to the Kasai River.

Remarks by Johnston[1] on tunnels in sand banks between Isangila and Manyanga, in the Cataract section of the Congo River, supposedly made by pratincoles for nesting, may indicate that *Pseudochelidon* will be found there too.

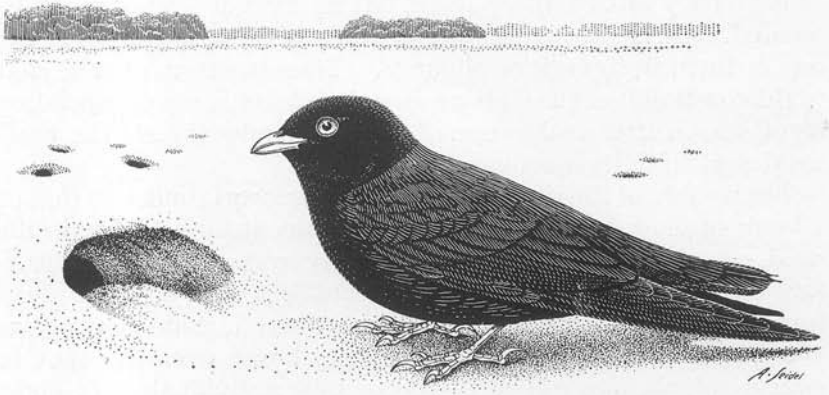

FIG. 34. The African river martin, *Pseudochelidon eurystomina*, near a new nest tunnel in sand.

It is evident that after breeding along the middle Congo River the birds must leave the region. Yet where they betook themselves was long a mystery. Almost the only other locality from which the species was recorded was Lake Onangué in the Gaboon, in nearly the same latitude. It might be suspected that they would move southward to the rivers of the Kasai drainage. Thus far, reliable records of the bird in the Kasai District are completely lacking. I realized that there was still a great deal to be learned about its migration.

For many years I could obtain no recent record of *Pseudochelidon* from the Gaboon. Then in October, 1951, P. C.

[1] 1908, George Grenfell and the Congo, vol. 1, pp. 278, 279.

Rougeot learned that there was a considerable colony, apparently nesting, near the lower Nyanga River, about 35 miles north of Mayumba. These birds were all flooded out and disappeared within the next few weeks. According to reliable natives, the species returns to the coast every year toward June and occupies a number of populous colonies from the lower Nyanga southeastward to the mouth of the Kwilu-Niari, for a distance of 150 miles. If eggs were really laid, as the natives believed, it would be unlikely that these individuals had migrated from the middle Congo River to the southern Gaboon Coast.

In 1952 Rougeot was again informed of the return of the river martins to the vicinity of the lower Nyanga River at the end of May. They settled there again, but no eggs or young could be secured. On October 8 about two dozen birds were captured, not one of them in immature plumage. Thus it seems proved that in the coastlands of the Gaboon *Pseudochelidon* is merely spending its off season after a migration of about 500 miles toward the west-southwest from its breeding grounds.

The nesting of the river martin is in some ways similar to that of a bank swallow, but it does not require any steep declivity in the sand. Instead it tunnels down obliquely from the rather flat surface for a yard or more, and there builds a nest of a few dead leaves and twigs. The nesting colonies may include as many as 400 pairs, and at times the occupants hover over the spot in swarms which may consist of 800 to 1000 individuals. In flight the birds look very much like swallows, beating their wings energetically, except for brief spells of sailing. These swarms often move with the precision of European starlings, and when feeding the birds scatter in parties in all directions. On the sand near their burrows they walk or shuffle about like swallows. A flock at rest makes a chattering sound comparable to the noise of nesting weaver birds, but without the long wheezes. As they rise again they call more loudly, like "cheer, cheer, cheer...," with a slight rasping quality, and birds flying by may also call "chip-ip-ip!" Never have I seen one perch on a bush or a tree, nor do they ever alight on bare ground away from the river. A small swallow, *Pseudhirundo griseopyga*, often nests in smaller numbers and in much the same way on these same bars. So too does *Riparia congica*, but the latter bird tunnels in rather horizontally from some more vertical break in the sand.

The normal set of eggs of *Pseudochelidon* appears to be three. They are white, and measure 21.9–26 by 16.4–18.2 mm. Fresh eggs have been found as late as March 29, and very little time would then remain for rearing the young before the water rose again in April. Nestlings collected by Schouteden had scant whitish natal down on crown, humeral tracts, and lower back.

Native fishing parties often camped overnight on the sand bars and were accustomed to capture quantities of old birds and young in the nests after dark. These were often carried back to the villages and used as food. It was in that way that I collected a fairly large series for the American Museum.

The food of *Pseudochelidon* is all secured on the wing, and stomach examinations showed that it consisted in large measure of winged ants, while small butterflies and a few Hemiptera, Homoptera, beetles, and flies were also devoured.

SUBFAMILY **HIRUNDININAE**

KEY TO THE SPECIES OF *Riparia* IN THE CONGO

1. Wing more than 115 mm. long, a very well-marked dark brown chest band, and a whitish stripe above the lores ..... *R. cincta*
   Wing usually less than 112 mm.; no white mark above lores, with or without dark chest band 2
2. A tuft of small feathers on back of metatarsus, just above base of hind toe; brown chest band present, remainder of underparts white .. *R. riparia*
   Lower metatarsus bare of feathers 3
3. Throat white, but chest crossed by an ill-defined band of gray-brown; lower breast and abdomen white ..... *R. congica*
   Throat gray or brownish, little if at all lighter than chest, so that there is no chest band; abdomen may be grayish or white ..... *R. paludicola*

Riparia paludicola paludicola (Vieillot)

Hirundo paludicola VIEILLOT, 1817, Nouveau dictionnaire d'histoire naturelle, vol. 14, p. 511 (type locality: South Africa).

Riparia paludicola paludicola PITMAN, 1934, A report on a faunal survey of Northern Rhodesia, p. 258 (Abercorn; Lulimala R.; Broken Hill). BRELSFORD, 1947, Ibis, p. 75 (southern sand-bank islands in L. Bangweolo).

DISTRIBUTION OF THE SPECIES: Madagascar, South Africa, Angola, eastern Africa and the Sudan to North Africa; thence eastward to India, Burma, and southern China. Eight races are currently recognized, varying in size and in depth of coloration. *Riparia p. paludicola* ranges from the Cape Province north to the Cuanza River, Lake Bangweolo, Abercorn, and Njombe in Tan-

ganyika Territory. It is large and fairly light in color; the wings reach 110 mm. *Riparia p. ducis* is considerably darker, the crown sometimes nearly black, and the wings 97–109 mm. *Riparia p. minor* ranges across the Sudan from the White Nile to the upper Niger; it is a paler representative, with wings only 91–97 mm.

The nominate race, *paludicola*, is the common sand martin or bank swallow of South Africa, frequenting rivers and nesting in colonies in tunnels in sandy banks. Breeding is perhaps more frequent in the cooler months than in the summer, and the eggs are three or four, pure white, 15.8–17.5 by 12–12.5 mm. This small brownish swallow is widely distributed even in Northern Rhodesia, and since Brelsford reports it to be common on the southern islands of Lake Bangweolo, it is certain to occur within our limits on the upper Luapula River.

Riparia paludicola ducis Reichenow

Riparia ducis REICHENOW, 1908, Ornith. Monatsber., p. 81 (type locality: West Ruanda).

Riparia paludicola ducis REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 296 (northwestern Ruanda). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 229 (Kabare). LYNES, 1934, Jour. Ornith., Sonderheft, p. 140 (Lugege in Ruanda). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 53. SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 121 (Nyarusambo, 2000 m.).

Riparia minor ducis REICHENOW, 1920, Jour. Ornith., p. 88.

DISTRIBUTION: From the highlands near the Athi River, Mt. Kenya, and Mt. Elgon to the shores of Lake Victoria, the highlands of Ruanda and the Kivu District, and the south shore of Lake Edward.

This dark equatorial race is characteristic of the highlands, but rather local, depending perhaps on suitable locations for its nests. I have seen it flying over the cold moorland of Mt. Kenya at 10,000 feet, and likewise at Lukumi meadow on Mt. Karisimbi at 12,000 feet. It is more characteristic of levels from 5000 to 7500 feet but may also be seen in numbers about Kabare, at the south end of Lake Edward.

The flight and general behavior are much like those of *Riparia riparia*, and the nests which I have seen were in relatively small groups of tunnels, along roadside banks not far from some stream. Breeding takes place in the Kenya Colony highlands between March and July. At Lake Bunyoni, in April, a party of

40 was seen perching on tall grasses, and breeding there may not yet have commenced. At Kikere meadow, 7200 feet, near the base of Mt. Mikeno, a party of eight were flying about in company with *Psalidoprocne holomelaena* on June 20, and I believe they were nesting near by. The food found in the several stomachs I examined consisted of small beetles and hard bits of other similar insects.

[*Riparia paludicola minor* (Cabanis)]

Cotyle minor CABANIS, 1850, Museum Heineanum, pt. 1, p. 49 (type locality: Dongola, Anglo-Egyptian Sudan).

Riparia paludicola sudanensis SCLATER AND MACKWORTH-PRAED, 1918, Ibis, p. 714 (Raffali in Bahr-el-Ghazal Province).

DISTRIBUTION: From Dongola and the White Nile westward to Segu on the upper Niger River. This is a lowland bird, most apt to be found near watercourses, and it is known to have nested near Lokodja, Nigeria, in late January and early February. The eggs are white, two or three to the set, and measure 15.6–17.4 by 11.6–12.2 mm.

This Sudanese race is not known to live along the Bahr-el-Jebel or to reach the northern border of the Congo, but it has been collected at Raffali in the Bahr-el-Ghazal Province, so it may possibly reach our northern limits.

Riparia congica (Reichenow)

Cotile congica REICHENOW, 1887, Jour. Ornith., p. 300 (type locality: Manyanga on lower Congo). SHARPE AND WYATT, 1894, A monograph of the Hirundinidae, vol. 1, p. 71 (Congo R.).

Cotyle riparia JOHNSTON, 1884, The River Congo, p. 364 (Cataract region).

Riparia congica REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 394 (Ngombe). LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 10 (Mukimbungu). SCHOUTEDEN, 1924, Rev. Zool. Bot. Africaines, vol. 12, p. 420 (Irebu–Ikengo); 1926, idem, vol. 13, p. 201 (Banc d'Anvers near Boma). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 583 (Kinshasa). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 95 (Leopoldville). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 276.

Clivicola riparia var. *congica* DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 33 (Lower Congo).

SPECIMENS: Coquilhatville, three females, December 15.

ADULTS: Iris dark brown, bill black, feet dusky brown.

DISTRIBUTION: Lower and middle Congo River, from below Boma up to Coquilhatville. While abundant along those stretches

of the Congo, it is not yet known to extend up any of the larger tributaries.

This sand martin appears not to represent the *paludicola* group, and despite its small size, with wings 91–98 mm., *R. congica* shows more resemblance to *R. riparia*, though lacking any tuft of feathers on the foot. Its gray-brown chest band is less clearly marked than that of *riparia*. The bird reported as *congica* by Sassi (1916) from between Mawambi and Irumu was really *riparia*.

Riparia congica is not migratory and is found along the river in numbers whether the water is high or low. It may be seen feeding some miles from the river, but is not often found perching on trees. When the river level falls the birds gather in flocks on the sandy islets, and there I have found many nesting colonies in the vicinity of Lukolela in February and March. Rows of tunnels are built in any low declivity, often within a few yards of the water's edge, and the makers squat on the sand near by. In the immediate vicinity there may be nests also of *Pseudhirundo griseopyga*, which is more apt to dig down from a fairly level surface.

Riparia riparia riparia (Linnaeus)

Hirundo riparia LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 192 (Europe; restricted type locality: Sweden).

Riparia riparia REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 296 (L. Edward). LANG AND CHAPIN, 1917, Bull. Amer. Mus. Nat. Hist., vol. 37, p. 552 (Ituri R.). SCHOUTEDEN, 1918, Rev. Zool. Bot. Africaines, vol. 5, p. 254 (Beni). BEQUAERT, 1922, Bull. Amer. Mus. Nat. Hist., vol. 44, p. 309.

Cotile riparia MOURITZ, 1914, Ibis, p. 37 (Musoshi R.).

Riparia congica SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 241 (Mawambi–Irumu).

Riparia riparia riparia GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 229 (Kabare). GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 52. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 125 (Kotili); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 121 (Katanda). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, pp. 95, 116 (Leopoldville; upper Lufira R.). JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 3, p. 1153 (Mfumbiro). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 274, fig. 48.

Riparia riparia riparia SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 310 (Ngoma).

SPECIMENS: Avakubi, female, January 28. Medje, female, January 20. Faradje, two males, April 21, December 13; six females, March 23, April 21, February 23, 24, 26, October 7.

ADULTS OF BOTH SEXES: Iris dark brown; bill black; feet very dark brown.

DISTRIBUTION OF THE SPECIES: Breeds over the whole of Europe, Siberia, Japan, and a large part of North America; also in North Africa, Iran, Palestine, Egypt, and south along the White Nile to Renk. The subspecies usually recognized number six, of which the small *R. r. shelleyi* is resident in Egypt and along the Nile.

The nominate form, *R. r. riparia*, nests in Europe and Asia, as well as North America, and migrates southward through Africa to northern Mozambique and the Transvaal. It has even been reported from Madagascar. During the northern winter the European sand martin is more common in the eastern half of the Congo than in the western, although it has also been reported in West Africa from the Gold Coast, French Sudan, and Gambia. The earliest arrival I noted in the Congo was at Kasenyi, Lake Albert, September 3, but I have also seen this swallow at Avakubi on September 5 and at Faradje on September 6. It moves northward again in April, but several specimens were taken on the Rutshuru River by J. C. Phillips as late as May 3.

Little needs be said as to behavior. Sand martins occur annually in numbers along the rivers at Faradje and Avakubi, as well as about Lake Albert and Lake Edward. Feeding in flocks, they often associate with other swallows, even with *Pseudhirundo* at Faradje, and with *Riparia paludicola* near Lake Edward. At Avakubi they were often seen flying to roost in the reeds with *Hirundo rustica*. Their food frequently consists of winged ants.

Riparia cincta cincta (Boddaert)

Hirundo cincta BODDAERT, 1783, Table des planches enluminéez, p. 45 (type locality: Cape of Good Hope).

Clivicola cincta NEAVE, 1910, Ibis, p. 124 (Kansanshi, Northern Rhodesia, 4600 ft.).

Cotile cincta MOURITZ, 1914, Ibis, p. 37 (Musoshi R.).

Riparia cincta SCHOUTEDEN, 1925, Rev. Zool. Bot. Africaines, vol. 13, p. 16 (Kunungu). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 113 (Banda; Leopoldville).

Riparia cincta cincta SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 125 (Buta). BERLIOZ, 1941, Bull. Mus. Hist. Nat., Paris, ser. 2, vol. 13, p. 402 (Brazzaville).

DISTRIBUTION OF THE SPECIES: Cape Province northward through eastern Africa to Abyssinia, also in the west to the French

Congo and Gaboon, while scattered individuals have been found from June to October on Princes Island, in northern Cameroon, Nigeria, and the Gold Coast Colony.

Riparia cincta erlangeri Reichenow of Abyssinia is distinguished by its large size, wings 135–146 mm. In East Africa *R. c. suahelica* has wings about 120–134 mm. Nominate *cincta* in southern Africa is not quite so dark above, and its wings measure 126–133 mm. I have seen specimens from the southeastern Katanga, taken in October and December, with wings 126 and 129 mm. long. This race is certainly migratory in the southern parts of its range and has been supposed to reach the grasslands north of the West African forest in its off season, from June to October.[1] There can be no doubt that a similar form is resident in the grasslands of the Kasai and French Congo. Four adults from this latter area have wings only 118–120 mm. Thus far they have been kept with the nominate race.

In the Uelle District I never saw the banded sand martin, so the individual secured by Hutsebaut at Buta may have been a migrant from the south. But near Stanley Pool and in the Kasai the species is present throughout the year and certainly breeds. Less sociable than the smaller species of *Riparia* and less attached to the vicinity of water, this large sand martin flies far and wide over the grasslands. Its call is fairly loud and chattering.

The breeding season in southern Africa begins in November and continues until February. In the French Congo and Kasai it seems to begin toward August and continues into November. One or two pairs tunnel in a bank, or even in the roof of a burrow of *Orycteropus*, not necessarily near water. The eggs number two to four, are pure white, and measure 19.2–22.3 by 14.8–16 mm. Near Bakwanga and Gandajika Father Windmolders found nests, usually in groups, in the dry season and on until November. Some young had left the nest by mid-September.

Riparia cincta suahelica Van Someren

Riparia cincta suahelica VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 90 (type locality: Escarpment, Kenya Colony). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 583 (Toro, Uganda). SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 122. JACKSON, 1938, The birds of Kenya Colony and . . . Uganda, vol. 3, p. 1155 (Wadelai).

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[1] See Bannerman, 1939, The birds of tropical West Africa, vol. 5, p. 278.

Cotile cincta OGILVIE-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 408 (Mokia, western Uganda).

Riparia cincta REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 296 (Tshingogo region). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 241 (Ruzizi Valley; Rutshuru Plain; Kasindi). SCHOUTEDEN, 1918, Rev. Zool. Bot. Africaines, vol. 5, p. 254 (Kalegela).

Riparia cincta cincta BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 277, fig. 50 (in part. Wadelai).

DISTRIBUTION: From the vicinity of Lake Albert and Lake Edward, south at least to the Marungu highland and eastward across the basin of Lake Victoria and Kenya Colony to Nairobi. There is plenty of evidence that *suahelica* is resident in that whole area.

On the Lendu Plateau, to the west of Lake Albert, I saw this swallow in August, and in January it was noted between Kasindi and Katwe. In the lower Rutshuru Plain, during May, a dozen or more were seen. Two males, ready to breed, were secured by Rockefeller and Murphy at Ketendwe, 6050 feet, in Marungu, late in February. I doubt that *R. c. cincta* migrates through the eastern Congo.

This race frequents not only the grassy plains in the lowlands, but also highland savannas, though avoiding the forested mountains. In Uganda Jackson found it nesting from March to June, not in large colonies, but one or two pairs making use of a pit or bank. They might even occupy a deserted tunnel of *Ceryle rudis*. A nest is built of grass stems and feathers, and the pure white eggs number two to five. Average dimensions are about 23 by 16 mm.

Pseudhirundo griseopyga griseopyga (Sundevall)

Hirundo griseopyga SUNDEVALL, 1850, Öfvers. K. Svenska Vetensk. Akad. Förhandl., vol. 7, p. 107 (type locality: near Port Natal, South Africa). REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 403 (Mayumba). NEAVE, 1907, Mem. Proc. Manchester Lit. Phil. Soc., vol. 51, no. 10, p. 51 (Kafue R.; near Kapopo).

Hirundo griseopyga melbina SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 577.

Hirundo griseopyga griseopyga SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 124 (Kotili). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 113 (upper Lufira R.; Nasondoye; Kimpanga). BRELSFORD, 1947, Ibis, p. 75 (Ncheta and Matongo islands in L. Bangweolo).

Pseudhirundo griseopyga melbina BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 269.

Pseudhirundo griseopyga griseopyga VERHEYEN, 1941, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 17, no. 23, p. 12 (Musosa).

SPECIMENS: Coquilhatville, male, December 16. Faradje, three males, March 11, 23, August 21; two females, February 28, July 9.

ADULTS OF BOTH SEXES: Iris dark brown; bill blackish; feet dull brown.

DISTRIBUTION OF THE SPECIES: From the upper Niger River and the coast of Liberia eastward to Abyssinia and south to Capelongo in Angola, Ngamiland, and Natal. In both Upper and Lower Guinea, however, it is not to be seen in the most heavily forested areas.

In this swallow sexual difference is relatively slight, even in the form of the tail, and subdivision into races is very difficult. *Pseudhirundo g. griseopyga* in southern Africa has wings 91–102 mm., the longest rectrices 68–85 mm. It appears to range northward to Angola, East Africa, and Abyssinia. Twelve specimens from the Gaboon and middle Congo River have wings 94–100 mm., tails 81–93 mm.; and in some cases the rump is deeper gray-brown. The differences are scarcely adequate for recognition of *P. g. melbina* (Verreaux), described from the Gaboon.

As for *P. g. gertrudis* (Grote), described from the Benue River near Garua, I doubt that it can be proved a short-winged race. Riggenbach's specimens were all collected in July, the off season in that latitude. Our specimens from the Uelle have wings 89–97 mm., tails 72–83 mm.; and three adults from the lower Niger River, with wings 94–97 mm., are best set off by their rather dark rumps and long tails, the latter measuring 90–97 mm. If *gertrudis* is to be recognized, from the Niger drainage area and the Gold Coast, the rump and tail are its best characters, and Gaboon birds are intermediate. *Pseudhirundo g. liberiae* Bannerman, from Nana Kru, Liberia, is slightly smaller, wings 92–93 mm., tails 74–84 mm., and has a browner rump.

In the Belgian Congo only nominate *griseopyga* seems to occur; it is distributed throughout all the grasslands below 6500 feet, and even nests along the Congo River near Lukolela and Coquilhatville. When not nesting it is apt to be seen only at intervals, giving the impression of a migrant, though it probably is not. Long referred to the genus *Hirundo*, the gray-rumped swallow is much more closely allied to *Cheramoeca leucosterna* of Australia, and resembles the sand martins in some of its behavior.

One reason for its not having been collected more often in the

Congo is that it rarely perches on trees, but is seen flitting about low over fields of grass or marshes, frequently in company with sand martins. In addition to the published localities, I have seen *Pseudhirundo* at Irumu, in the upper Rutshuru Plain, at Lake Bunyoni, 6600 feet, and along the west shore of Lake Kivu. Half a dozen were flying about at Katana on July 7, and a female collected was in worn breeding plumage. Rockefeller and Murphy obtained specimens in Marungu at Mukuli, 5200 feet, and Sambwe, 6100 feet.

Both to the north and to the south of the equatorial belt this swallow nests mainly in the dry season, in holes in the ground made either by small mammals or by the birds themselves. J. C. Phillips[1] found a colony near Fazogli on the Blue Nile in January, and Ronald Shuel[2] described others in sand banks in the Niger River from late November to February 10.

To the southward, Petit[3] discovered nests at Mayumba on the Loango Coast in August; Neave (1907) snared a female at her nest along the Kafue River in October; while Sheppard[4] and Austin Roberts[5] noted nests in September and July in southern Africa.

It was close to the Equator, at Lukolela, that I became best acquainted with *Pseudhirundo*, which was numerous and resident the year round. Its voice is a weak, nasal "whă" or "pă" which I could hear only within 20 yards. When the level of the river fell at the end of January, these swallows gathered in numbers on many of the sand bars and soon had groups of tunnels about a yard long, dug obliquely down from the rather level surface. The builders were often seen to emerge as we approached, and their breeding activities continued until early April. I am convinced that they nest there also during the low water of July–August, for along the Ogowé River in much the same latitude Ansorge collected a series of nestlings on August 27, 1907, and we have a well-grown nestling also from the Sankuru River taken in August, 1948.

In drier regions burrows already provided by rodents are commonly used, and we found these swallows plainly breeding in the Kidong Valley and at Naivasha, in Kenya Colony, in June and

[1] 1913, Bull. Mus. Comp. Zool., vol. 58, p. 16.
[2] 1935, Ibis, p. 652.
[3] 1883, Bull. Soc. Zool. France, vol. 8, p. 79.
[4] 1910, Jour. South African Ornith. Union, vol. 5, p. 35.
[5] 1935, Ann. Transvaal Mus., vol. 16, p. 149.

July, rather dry months there. Dry grasses are carried in to build the nest. The eggs are white and measure 15.5–17.9 by 11.6–12.1 mm. Two or three, occasionally four, make up a set.

Phedina brazzae Oustalet

Phedina brazzae OUSTALET, 1886, Naturaliste, ser. 2, vol. 3, p. 300 (type locality: Nganchu on Congo R., just below Kwamouth). SHARPE AND WYATT, 1893, A monograph of the Hirundinidae, pl. 29. REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 425. SCHOUTEDEN, 1924, Bull. Cercle Zool. Congolais, vol. 1, p. 34 (Luluabourg). SCLATER, 1924, Bull. Brit. Ornith. Club, vol. 44, p. 91; 1930, Systema avium Aethiopicarum, pt. 2, p. 582. LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 96 (Lutshatsha R. near Luluabourg; Kilembe R.; Lubue R., 40 miles south of Idiofa; Kabambaie; Lubishi R. near Kimpanga).

DISTRIBUTION: From the middle Congo River near the mouth of the Kasai eastward across the Kasai District to the Lubishi River, an eastern affluent of the Lubilash. Until 1922 Brazza's swallow was known only from the type in the Paris Museum. Then Father Callewaert rediscovered it near Luluabourg, where he eventually collected about 20 examples. *Phedina brazzae* is somewhat like *P. borbonica* of the Mascarene Islands and Madagascar, but smaller, browner above, and with the bill relatively smaller. The tail of *brazzae* is not even slightly forked. The wings measure 95–103 mm., the tail 44–49 mm.

Very little was known of the behavior of this small streak-breasted swallow, except that it was rather sociable and fed very much as the small sand martins do. It has usually been seen in the neighborhood of rivers. All Father Callewaert's specimens were taken between the months of July and September inclusive, in four different years. One young bird taken on September 29 is still in juvenal dress, with only diffuse striping beneath and rufous brown edgings on back feathering and wing-coverts. It is not safe to assume that the birds are only seasonal visitors at Luluabourg, for the nesting period was shown by Lynes to include September, and it may be that all the specimens were collected near some breeding ground.

In Madagascar *Phedina borbonica* was reported by A. L. Rand to build a saucer-shaped nest of twigs and plant stems on a ledge of some cliff, while J. Delacour believed it also nested on buildings like a barn swallow. In May, 1951, on some rocks along the Nunu River, north of Katombe, Father P. Van Assche noticed some *P. brazzae* sitting near old mud nests, which natives thought

they had built. But in August of the same year he succeeded in locating their real nests, tunnels like those of *Riparia*, in four different places along sandy banks of rivers.

In mid-July of that same year Father Georges Windmolders, near Gandajika, had also noticed a few pairs of this swallow visiting half a dozen tunnels, rather widely scattered, in the sandy bank along a drainage ditch. One bird was seen to pick up nesting material. On July 23 he dug out a nest, as its owners flew around overhead, and found it composed of fine grass with two white feathers and a tuft of cotton, holding three fresh eggs. These were entirely white and measured 18.4 by 12, 18.5 by 12.7, and 18.7 by 12.8 mm. Perhaps the set was not quite complete.

Father Van Assche tells me that the nest tunnels are about 50 cm. long and sometimes closely grouped. Nesting continues until October; then the rains put an end to it. Father Windmolders saw flocks of these swallows in November along the lower Bushimai River near Bakwanga. In their off season they mingle commonly with *Cecropis abyssinica* while feeding.

Ptyonoprogne fuligula rufigula (Fischer and Reichenow)

Cotyle rufigula FISCHER AND REICHENOW, 1884, Jour. Ornith., p. 53 (type locality: L. Naivasha, Kenya Colony).

Cotile rufigula ALEXANDER, 1907, From the Niger to the Nile, vol. 2, p. 308 (Kodja hill near Mt. Gaima). OGILVIE-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 408 (Mubuku Valley, 8000 ft.; Luimi Valley).

Riparia rufigula REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 296. CHAPIN, 1921, Amer. Mus. Novitates, no. 17, p. 14 (Aba; Garamba; Gangura's; Nzoro; Dungu).

Ptyonoprogne anderssoni MOURITZ, 1914, Ibis, p. 29 (Mandoko, southeastern Katanga).

Riparia rufigula rufigula BANNERMAN AND BATES, 1924, Ibis, p. 228.

Ptyonoprogne rufigula rufigula SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 585. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 54. SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 122. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 284, fig. 53.

Ptyonoprocne rufigula rufigula SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 310 (Ngoma).

Ptyonoprocne rufigula SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 125 (Dramba).

Ptyonoprogne fuligula rufigula GRANT AND MACKWORTH-PRAED, 1942, Bull. Brit. Ornith. Club, vol. 62, p. 50.

SPECIMENS: Mt. Gaima near Nzoro, two females, August 4.

Aba, four males, July 12, 13, 17, December 12; immature male, December 14; two females, July 13, December 12.

ADULTS OF BOTH SEXES: Iris dark brown; bill black; feet brownish.

DISTRIBUTION OF THE SPECIES: From Cape Province north to Pungo Andongo in Angola, the Katanga and eastern Africa, Abyssinia, and westward again to the north of the equatorial forest as far as the Gold Coast Colony and French Sudan. It is possible indeed that *P. obsoleta* (Cabanis) is also to be added to this group, extending the range to Asben, Palestine, and westernmost India.

Of *Ptyonoprogne fuligula* (Lichtenstein) there are half a dozen races, the nominate form extending from Cape Province to Zululand and the Transvaal. *P. f. rufigula* occupies a vast area extending from Mozambique, Usambara, and Kenya Colony westward to Angola and to Ashanti, though avoiding the forest area in Lower Guinea. Specimens from the Benguella highland convince me that *rufigula* virtually intergrades there with *P. f. anderssoni* (Sharpe and Wyatt) of southwestern Africa.

The race *rufigula* is deeply pigmented, with wings 105–116 mm. long; a still darker form, *P. f. bansoensis* (Bannerman) is recognized from the highlands of the Cameroon. In the Belgian Congo this crag martin is rather locally distributed, from the Katanga through the eastern highlands and then westward across the Upper Uelle. It is found only in the vicinity of bare hills and steep cliffs, even at fairly low levels if they provide suitable nesting sites.

The crag martins seen by Mouritz near some quartzite hills close to Mandoko in the Katanga undoubtedly belonged to this race. At Ngoma on Lake Kivu a few pairs were flying about the volcanic hill. On Ruwenzori they ascend to 8000 feet on the east side; I have seen them at 5000 feet near the southern extremity and at 7000 feet on the west. Another place where I found these martins is Mt. Avu near Nioka.

Near Aba crag martins were common about the hills, flying silently back and forth in front of the steepest precipices, where they alighted occasionally in some small niche or even on steeply sloping rocks. Two nests were seen on a cliff in July. One was found to be old and empty, the other was inaccessible. In December the birds were again seen in the same places, but their

sexual organs were quiescent, whereas in July they proved that breeding was going on.

At a hill just southwest of Mt. Gaima, in August, a few pairs were nesting in places more easily reached. One nest was attached to the side of a cliff where it was protected from above by an arched projection, and I could approach to within 3 yards below it. Externally a thin half cup composed of pellets of mud, it had a thick padded lining, mainly of feathers from fruit pigeons, but also a few from a goatsucker, glossy starlings, and the swallows themselves, as well as some strips of vegetable fiber. The two eggs, just about to hatch, were white, rather thickly spotted with rufous and clouded lilac-brown, the markings thickest in a wreath about the large end. The eggs secured by Jackson in Kenya Colony measured 19 by 12.5 mm.

Close beside this nest was an old one, and only a few feet away, in a similar position, the mud shell of another nest had been completed, one of its builders arriving with a feather as we watched.

KEY TO THE SPECIES OF *Hirundo* IN THE CONGO

1. Whole crown and forehead glossy blue like the back....2
   Forehead, and in one case whole crown, rufous....5
2. Underparts mainly glossy blue like the back....3
   Underparts mainly rufous, gray, or whitish....4
3. A white patch on fore neck; outermost tail feather never more than 50 mm. long....*H. nigrita*
   No white mark on fore neck; outermost tail feather with elongated tip and 67–163 mm. long....*H. atrocaerulea*
4. Underparts wholly light gray or whitish....*H. dimidiata*
   Underparts rufous, becoming black on under tail-coverts....*H. nigrorufa*
5. Whole crown brown or rufous when adult; outermost rectrices with wire-like tips, especially long in adult males, reaching 100 and 110 mm....*H. smithii*
   Only the forehead rufous; crown like back....6
6. Throat pure white, or white washed with brown....7
   Throat deep rufous when adult....8
7. Larger, wing always exceeding 120 mm.; white throat separated from breast by a black band....*H. albigularis*
   Smaller, wing less than 115 mm. long; dark breast band broadly interrupted in middle....*H. aethiopica*
8. Breast and flanks brownish gray, rectrices with large white areas and the outermost not exceeding 64 mm. in length....*H. angolensis*
   Breast and flanks white, cream-color, or rufous....9
9. White patches on rectrices cover most of the inner webs, beginning about 20 mm. from base; outermost rectrices not exceeding 72 mm....*H. lucida*

Only a white spot on inner web of each tail feather, at least 30 mm. from base; outermost rectrices of males may reach 110 and even 120 mm..... .....*H. rustica*

Hirundo dimidiata marwitzi Reichenow

Hirundo dimidiata var. *marwitzi* REICHENOW, 1903, Die Vögel Afrikas, vol. 3, p. 404 (type locality: Malangali, Usafua, Tanganyika Territory).

Hirundo dimidiata NEAVE, 1910, Ibis, p. 123 (Kambove, 4500 ft.). MOURITZ, 1914, Ibis, pp. 33, 37 (Kalonga; Katala's kraal–Sakania). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 576. A. W. VINCENT, 1946, Ibis, p. 318 (near Elisabethville). WHITE, 1946, Ibis, p. 97 (Mwinilunga); 1947, idem, pp. 359, 360 (Kasempa). SCHOUTEDEN, 1949, Rev. Zool. Bot. Africaines, vol. 42, p. 168 (Kimbundji.)

Hirundo dimidiata marwitzi BENSON, 1949, Ostrich, vol. 20, p. 137 (Katanga).

DISTRIBUTION OF THE SPECIES: From Cape Town north to Ambaca in Angola, the Upper Katanga, and Usafua north of Lake Nyasa. The nominate race extends from the Cape Province to Damaraland and Southern Rhodesia; *H. d. marwitzi* ranges from western Angola to Lake Nyasa, southwestern Tanganyika Territory and the Upper Katanga. The latter race is darker and grayer on the under surface and averages slightly smaller, with wings 94–107 mm., tail 50–63 mm. *Hirundo dimidiata* appears to be closely related to *H. megaensis* Benson of southern Abyssinia, despite its lack of any white on the rectrices, and thus also to *H. leucosoma* Swainson of West Africa.

In the Cape Province nominate *dimidiata* is migratory, arriving from the north in late September, nesting, and leaving again in April; but it may not winter north of Rhodesia. *Hirundo d. marwitzi* is sedentary, and nests toward September.

Within our limits the pearl-breasted swallow is restricted to the Upper Katanga and is neither numerous nor sociable. I collected an adult male at Kipushi on August 14, 1927, which was clearly on its breeding grounds. Alfred Vincent has since found two nests near Elisabethville toward the end of September, more than 20 feet down in dry wells sunk for copper prospection, where *Neafrapus böhmi* was likewise breeding. At Kasempa in Northern Rhodesia White found a cup nest with three white eggs in an old fowl house; these hatched on September 15. In South Africa eggs of the nominate race measure 17–19 mm. by 11–13.5 mm.

[*Hirundo nigrorufa* Bocage]

Hirundo nigrorufa BOCAGE, 1877, Jor. Sci. Nat. Lisboa, vol. 6, p. 158 (type locality: Caconda, Angola). LYNES AND SCLATER, 1934, Ibis, p. 47 (Kawambwa).

LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 95 (Saurimo and Vila Luzo in Angola).

Hirundo semirufa nigrorufa WHITE AND WINTERBOTTOM, 1949, A check list of the birds of Northern Rhodesia, p. 105 (Ndola in N. Rhodesia).

From the Benguella highland this attractive little swallow, with underparts deep rufous, extends across Angola to the Mwinilunga district of Northern Rhodesia, to Ndola, and to the region just south of Lake Moero. No specimen seems yet to have been taken in the Katanga, but C. M. N. White tells me that he saw a fair number on the Mundwiji Plain, a watershed plain 40 miles northeast of Mwinilunga and very close to the Katanga border, around May, 1946. Its occurrence somewhere within our limits is a certainty.

Hirundo albigularis Strickland

Hirundo albigularis STRICKLAND, 1849, Contributions to ornithology, p. 17, pl. 15 (type locality: South Africa). MOURITZ, 1914, Ibis, p. 33 (Kalonga, southeastern Katanga). WINTERBOTTOM, 1939, Revised check list of the birds of Northern Rhodesia, p. 60 (Mongu in Northern Rhodesia); 1942, Ibis, p. 374 (Barotseland). BRELSFORD, 1947, Ibis, p. 75 (main Chambeshi channel, below Ncheta I.).

Hirundo ambigua BOCAGE, 1877, Ornithologie d'Angola, pt. 1, p. 186 (type locality: Angola).

Hirundo albigularis microptera HARTERT, 1904, Bull. Brit. Ornith. Club, vol. 14, p. 73 (type locality: Ambaca, northern Angola).

DISTRIBUTION OF THE SPECIES: From the Cape Peninsula and Natal north to Nyasaland, Lake Bangweolo, and Duque de Bragança in northwest Angola. The nominate race in South Africa has wings 126–138 mm., tails 68–77 mm. It is a notable migrant, arriving in the Cape Province toward August 21, nesting in December and January, and leaving again at the end of March for the tropics, where it is believed to reach Northern Rhodesia.

Five adults from northwestern Angola in the Rothschild Collection have wings 121–124 mm., tails 58–63 mm.; it is clear that *H. a. ambigua* Bocage of Angola is a valid race, which also shows a tendency toward narrowing of the chest band in the mid-line. A still smaller member of this same group is *Hirundo aethiopica* Blanford of northeastern Africa and the Sudan.

For many years the record by Mouritz in early November from the Katanga seemed questionable; he might have been confused by *H. dimidiata*. But recently Brelsford has reported *albigularis* as common in the papyrus along the main Chambeshi channel

close to the upper Luapula River, in September. This would lend strong support to Mouritz, despite the late date of his observation, and it shows that *Hirundo albigularis* must reach the southeastern Katanga. Whether the birds near Bangweolo belong to the nominate race or to *ambigua* is an open question. The latter form may conceivably reach Congo territory along the upper Kwango River.

A nest of some race of *albigularis* was found by Benson[1] near the border of southwestern Nyasaland on November 15. The white-throated swallow in South Africa builds a cup-shaped nest of mud under a bridge, in some dwelling or shed, or even under a rocky ledge. The eggs are three to four, white with red-brown and dull bluish spots tending to form a zone. Their dimensions are 20.5–21.7 by 14.5–14.7 mm.

[*Hirundo aethiopica* Blanford]

Hirundo aethiopica BLANFORD, 1869, Ann. Mag. Nat. Hist., ser. 4, vol. 4, p. 329 (type locality: Barakit, Tigré, northern Abyssinia). JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 3, p. 1141 (Kajo-Kaji).

Ranging from British Somaliland and northern Abyssinia south to the East Coast near the Pangani River and west to the upper Niger and possibly the Gambia, the Ethiopian swallow is not known to occur within the northern border of the Congo. But it is rather common along the Bahr-el-Jebel, south to Kajo-Kaji, and thus might occasionally wander to the north end of Lake Albert.

Hirundo smithii smithii Leach

Hirundo smithii LEACH, 1818, *in* Tuckey, Narrative of an expedition to explore the River Zaire, app., p. 407 (type locality: Chisalla I., lower Congo R.). HARTLAUB, 1853, Jour. Ornith., p. 398. SHARPE AND WYATT, 1886, A monograph of the Hirundinidae, vol. 1, p. 327, pls. 59, 60. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 310.

Hirundo filifera SHARPE AND BOUVIER, 1877, Bull. Soc. Zool. France, vol. 2, p. 474 (Boma). DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, p. 148 (L. Tanganyika). EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 53 (Kajándsa on L. Albert).

Hirundo smithi REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 410; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 297 (Kisenyi). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 33 (Mpala). MOURITZ, 1914, Ibis, p. 37 (Katala's kraal–Sakania). SASSI, 1916, Ann. Naturhist. Mus., Wien, vol. 30, p. 242 (Uvira). SCHOUTEDEN, 1918, Rev. Zool. Bot. Africaines,

[1] 1942, Ibis, p. 318.

vol. 5, p. 254 (Sanghé-Ruzizi); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 124 (Kotili; Faradje). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 122 (west shore of L. Albert).

Hirundo smithii smithii SCHOUTEDEN, 1926, Rev. Zool. Bot. Africaines, vol. 13, p. 201 (Banana; Vista). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 577. FRIEDMANN AND LOVERIDGE, 1937, Bull. Mus. Comp. Zool., vol. 81, p. 203 ("Ruanda"; "Urundi"). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 249, pl. 6. VERHEYEN, 1947, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 23, no. 10, p. 3 (Musosa).

Hirundo smithi smithi SCHOUTEDEN, 1941, Rev. Zool. Bot. Africaines, vol. 34, p. 266 (Kasenyi).

SPECIMENS: Faradje, 12 males, February 6, 9, March 27, July 23, August 14, 20, 30, October 29, November 5, 17; nine females, February 6, 7, 9, July 22, 23, August 13, October 27, 29, November 27; two immature males, July 23, October 19; three juvenile males, February 6, 8, 9; two immature females, January 9, November 17; juvenile female, February 6.

ADULTS OF BOTH SEXES: Iris dark brown, bill and feet blackish.

DISTRIBUTION OF THE SPECIES: Tropical Africa, the Indian Peninsula, Afghanistan, Russian Turkestan, and Burma. The Indian race, *H. s. filifera* Stephens, has slightly longer wings and markedly longer tail tips than the African subspecies, *H. s. smithii*. The latter ranges from Natal to Angola and the Lower Congo, the Manyema District and East Africa, then northward to Abyssinia, and westward on the north of the forest belt to the Gold Coast Colony and the upper Niger.

The wire-tailed swallow inhabits most parts of the Congo except the forests and the open plateaus above 5000 feet. Although it does live about the shores of Lake Kivu, it appears to be lacking in the Kasai District. Our specimens from the Uelle were all collected at Faradje, but we noted this swallow at Nzoro, at Dungu, and at Niangara where it was common. On the lower Congo it is likewise numerous, but was never seen on the middle Congo near Lukolela, about Stanleyville, or in the forested Ituri.

Lake Albert, the upper Semliki Plain, and the lower Rutshuru Plain are all occupied, as are the shores of Lake Tanganyika and the lower Ruzizi Valley. We have a specimen collected by Grauer at Kasongo on the Lualaba, and I frequently saw *smithii* along that river from Kabalo to Bukama. The wire-tailed swallow is very partial to rivers and lakes in the lowlands, seldom seen more than a mile from a watercourse. Less fond of visiting the ground

than *H. nigrita*, it alights more often on a roof, a dry tree, or a rock out in the water. Calling but little, *H. smithii* is a swift and graceful flier, its long tail tips scarcely noticeable in the air.

This swallow is all the more familiar because it so often nests beneath eaves and verandahs. The nest is a bowl or half cup of mud, lined with grass, plant stems, or rootlets, with the addition of feathers. At Faradje we found four nests, with either two or three eggs each. The white ground color was tinged with pink by light passing through their contents, and there was a fine spotting of rufous, thickest in a wreath at the blunt end. Dimensions of four eggs were 16.8–17.4 by 12.6–12.9 mm. Only the female was seen to incubate, but her consort often perched close by. The natal down of the young is light gray; the juvenal plumage dull, with dusky brown crown.[1]

Nests were seen at Faradje in early February, early April, and late October; other breeding birds were taken in March and toward August. So nesting there must continue irregularly throughout the year. In other parts of the continent the species has been noted as nesting on ledges of rock along rivers. Still more unusual are the observations by Willoughby Lowe on a pair apparently nesting in the stern of a cable-pontoon crossing the Black Volta River at Bomboi, cited by Bannerman (1939), and by Mrs. F. M. Benson (1946) of a nest on a ferry across the Shiré River near Liwonde.

In early August, 1927, while ascending the Lualaba River by steamer from Kabalo to Bukama, I noted on several different days that a pair of *Hirundo smithii* would follow the boat and circle about it for hours, or even the better part of a day. The steward declared that these birds had even built a nest on the steamer, but the captain could not verify it. My friend and fellow passenger, Commissaire Eugène Henry, assured me he had actually seen a nest of *Cecropis abyssinica* on a river steamer plying the Congo, much farther to the west. At Bolengi in 1931 the native captain of the Mission steamer "Oregon" assured me that a pair of swallows had nested on that boat, but he could not identify the species.

In North America colonies of tree swallows have been reported on St. Lawrence ferryboats at Ogdensburg, New York,[2] nests of

[1] A very careful study of the nesting is that by R. E. Moreau, 1939, Proc. Zool. Soc. London, ser. A, vol. 109, pp. 109–125.

[2] Common, 1942, Auk, p. 437.

rough-winged swallows on a steamboat making trips of 24 miles along the Tennessee River, and of barn swallows on steamers on Lake George, New York.[1] F. L. Jaques noted a group of a dozen occupied nests of cliff swallows on a steamer plying on Tagish Lake in the Yukon Territory.[2]

Hirundo nigrita G. R. Gray

Hirundo nigrita G. R. GRAY, 1845, The genera of birds, pl. 20 (type locality: lower Niger R.). SHELLEY, 1890, Ibis, p. 163 (Yambuya). SHARPE, 1890, *in* Jameson, The story of the rear column, p. 413. OUSTALET, 1893, Naturaliste, ser. 2, vol. 7, p. 127. HARTERT, 1900, Novitates Zool., vol. 7, p. 36 (Bafwazabangi on Ituri R.). REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 421 ("Congo"). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 33 (Kisantu). SCHOUTEDEN, 1920, Rev. Zool. Bot. Africaines, vol. 7, p. 190 (Malela); 1923, idem, vol. 11, pp. 342, 399 (Basongo; Luebo; Kabambaie; Tshikapa; Tshisika; Kwamouth); 1924, idem, vol. 12, p. 272, 420 (Kisantu; Eala; Tondu); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 124 (Kotili; Buta). CHAPIN, 1921, Amer. Mus. Novitates, no. 17, p. 16 (Bengamisa; Banalia; Avakubi; Gamangui; Bafwabaka; Rungu; Nzoro). BANNERMAN, 1922, Rev. Zool. Bot. Africaines, vol. 9, p. 411; 1923, Ibis, p. 717; 1939, The birds of tropical West Africa, vol. 5, p. 247, pl. 6. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 577. LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 95 (Bushimaie R. at latitude 7° S.). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14 (for 1944), p. 67 (Bangui).

SPECIMENS: Bengamisa, female, September 30. Banalia, male, September 22. Avakubi, three males, January 3, August 9; two females, October 4, December 8; juvenile male, August 9. Gamangui, two females, February 11. Bafwabaka, two males, January 5, 8. Rungu, immature male, June 29; immature female, June 26. Nzoro, female, August 1.

ADULTS OF BOTH SEXES: Iris dark brown; bill black; feet very dark gray.

DISTRIBUTION: From Sierra Leone to Southern Nigeria and the whole Lower Guinea forest area, to the Upper Uelle District, the Semliki River, Kasai District to latitude 7° S., and the lower Congo River.

This blue-black swallow is seldom found far from watercourses and prefers rivers with forested banks. It may be seen in the mangrove belt of the lower Congo River, near Kinshasa on Stanley Pool, and is very common along the middle Congo near

[1] Bent, 1942, Bull. U. S. Natl. Mus., no. 179, pp. 427, 444, 445.

[2] F. P. Jaques, 1951, As far as the Yukon, p. 96.

Lukolela. The same is true for the Aruwimi and Ituri rivers and many others in the Upper Congo forest south to Kasongo and most of the Kasai District. To the northeast it frequents the Kibali River above Dungu, and I found one pair at Nzoro. In 1926 I noted a pair also on the Semliki River near Beni.

Though feeding mostly over the rivers, *Hirundo nigrita* is fond of resting on the ground in clearings and villages along the banks, sometimes alighting on houses. Parties of six or eight, composed largely of dull-colored young, are occasionally seen, and their calls are the usual twitterings of swallows. One female from Gamangui, ready to breed, had all the lower part of its right foot dead and dried out. The metatarsus had been bitten by a driver ant, the head of which still clung fast by its mandibles.

Close to the Equator the breeding season must extend throughout the year. We found nests at Avakubi in January and in August, birds in breeding condition in the Ituri District in February and December as well. The nest is usually built on some old part of a tree projecting from the water near a river bank. It may be a half cup affixed to the side of a stub or placed in some cavity protected from rain, and it is composed of pellets of mud with a lining of dry grass and a few feathers. One nest straddled a pole beneath a bridge. From Buta Brother Joseph Hutsebaut reported a nest on a beam of a verandah.

Three or four eggs are laid, pinkish white thickly spotted with brown, the spots forming a dark zone around the larger end. A set of three from Avakubi measured 17.3 by 13.4, 17.4 by 13, and 17.8 by 13 mm. Both parents care for eggs and young. When first hatched the latter show scattered tracts of light brownish gray natal down on crown, nape, humeral tracts, and lower back. The juvenal plumage is much duller black than the adult, especially on the lower surface, yet has the white patch on the throat.

Hirundo atrocaerulea Sundevall

Hirundo atrocaerulea SUNDEVALL, 1850, Öfvers. K. Svenska Vetensk. Akad. Förhandl., vol. 7, p. 107 (type locality: Lower Caffraria, South Africa). CHAPIN, 1932, Bull. Amer. Mus. Nat. Hist., vol. 65, pp. 260, 340, 343, 344, fig. 166, map (west of L. Albert; Marungu).

? *Hirundo aterrima* BÖHM, 1886, *in* Schalow, Jour. Ornith., pp. 419, 420 (Lukifui R.; Lukumbi R.).

? *Hirundo atra* BÖHM, 1886, *in* Schalow, Jour. Ornith., pp. 422, 424, 425 (Luvua R.; L. Itambe; Lugoma R.).

Hirundo christyi SHARPE, 1906, Bull. Brit. Ornith. Club, vol. 16, p. 86 (type locality: Mabira Forest, Uganda).

Hirundo atrocaerulea lynesi GRANT AND MACKWORTH-PRAED, 1942, Bull. Brit. Ornith. Club, vol. 62, p. 45 (type locality: Njombe, southern Tanganyika Territory).

DISTRIBUTION: From Natal northward through eastern Transvaal to Nyasaland, southwest Tanganyika Territory, and Marungu in the southeastern Congo. After breeding it migrates north to North Kavirondo, central Uganda, and the Lendu Plateau west of Lake Albert.

In my opinion the race *lynesi* is not separable. A comparison of 18 specimens taken at various seasons convinces me that the fresh plumage, assumed toward August, is steel-blue. By the time the birds are nesting, November to March, abrasion has caused the luster to appear more violaceous. Two specimens taken in May, after migrating north again to Kyagwe, Uganda, are in badly worn dress with a faint suggestion of dull bronze. Two males taken in Marungu in February fit exactly into this picture of seasonal change and are remarkable only for the great length of their outermost rectrices, 150 and 163 mm. But the type of *lynesi* had the tail only 126 mm. long.

The breeding range of this swallow certainly extends from Natal northward over various highlands to the Marungu, where Rockefeller and Murphy collected two males and a female at Sambwe and Ketendwe, around 6000 feet, in February, 1929. In that same region Böhm had noted a "*Hirundo atra*" or "*aterrima*" from late September to early November.

The northward migration takes place toward April, and the birds spending their off season in Uganda and west of Lake Albert undergo a complete molt toward July and August. Then they move southward again, and in Natal are seen only from October to March. Whether or not some remain the year round in Marungu and southern Tanganyika Territory remains to be determined.

In 1926, after seeing numbers of these swallows near Tororo, Uganda, and northeast of Kampala in July and August, we again found them common in the vicinity of Irumu, in the eastern Ituri, during August and September. They feed low over the fields of high grass and are seldom seen to perch. On August 14, 1937, I was again at Irumu, saw a dozen or more *H. atrocaerulea*, and collected one more specimen. Between October and May the species has never been noted in the northeastern Congo.

Nests have been found in southern Africa from November to March. They are of cup shape, most often placed 5 or 6 feet down in burrows of *Orycteropus*, the aardvark, but sometimes in a pit of some other kind, or even in a building. The eggs are normally three, white with spotting of brown and blue-gray, and measure 18.5–19.5 by 12.5–13.1 mm.

Hirundo angolensis Bocage

Hirundo angolensis BOCAGE, 1868, Jor. Sci. Nat. Lisboa, vol. 2, p. 47 (type locality: Huilla, Angola). DUBOIS, 1886, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 4, p. 148 (L. Tanganyika); 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 33. OGILVIE-GRANT, 1908, Ibis, p. 308 (east of Kasongo). REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 297 (L. Mohasi; L. Kivu). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 242 (Urundi; Ishangi). SCHOUTEDEN, 1923, Rev. Zool. Bot. Africaines, vol. 11, p. 399 (Kwamouth); 1924, idem, vol. 12, p. 272 (Kidada); 1932, idem, vol. 21, p. 310 (Kisenyi; Nya-Muzinga; Burunga).

? *Hirundo savignii* LEACH, 1818, *in* Tuckey, Narrative of an expedition to explore the River Zaire, p. 407 (Lower Congo).

? *Hirundo cahirica* HARTLAUB, 1857, System der Ornithologie Westafrica's, p. 26 (Congo).

Hirundo lucida angolensis GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 226 (Ngoma).

Hirundo angolensis angolensis SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 575. SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 122 (Nzulu; Tshamugussa, 2250 m.); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 339 (Kibingo); 1943, idem, vol. 37, p. 271 (Gabiro).

Hirundo angolensis arcticincta SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 124 (Arebi).

DISTRIBUTION: From the Lower Congo to southern Angola, and eastward across the savannas south of the forest belt to the northern end of Lake Nyasa, western Tanganyika Territory, Mt. Elgon, and Naivasha in Kenya Colony. In the northeastern Congo it has been reported from Arebi, and so may occur near Lake Albert. I have myself collected it at Luofu, southwest of Lake Edward, and have seen it in the Rutshuru Plain and at Lake Bunyoni. On the lower Congo River I have watched several at Noki and have seen one at Ganda Sundi in the Mayombe.

There can be no doubt of the close relationship between this swallow and *H. lucida;* perhaps they should be treated only as races. The birds of Uganda and Kenya Colony have often been separated as *H. a. arcticincta* Sharpe, but the difference in color is so slight, the change so gradual from there to northern Angola, that I

should not know where to draw any line. The depth of the tail fork is greater in East Africa, 16–23 mm., including adults of both sexes; and in northern Angola only 8–15 mm. Kasai specimens are very like those of Angola; others from Marungu to Lake Edward more like Uganda birds, the tail fork 14–19 mm. Wing length varies less; in the Congo it is 115–122 mm.

Beyond a doubt the Angola swallow is a close relative of *Hirundo rustica;* all its behavior is similar and is also exactly like that of *H. lucida.* Towns attract it, and the buildings provide nesting sites. We noticed that at Fort Portal in Uganda, at Luofu in the highland near Lake Edward, and at Kiabo on the Lualaba. The nest is similar to that of *rustica,* and in Uganda breeding is reported from February to July and from October to December. At Luofu nesting was under way at the end of March, and at Mukuli, 5400 feet, Marungu, Rockefeller and Murphy obtained a breeding male in early May. Nests are of mud, cup-shaped, not very bulky, and lined with grass and feathers. The eggs number either two or three, are white blotched with dark rufous, and measure about 19 by 14 mm.

Hirundo lucida subalaris Reichenow

Hirundo lucida subalaris REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 829 (*type locality: Stanley* Falls, Belgian Congo). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 42. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 241 (Bengamisa).

Hirundo lucida REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 408 (in part. Stanley Falls). NEUMANN, 1905, Jour. Ornith., p. 200.

Hirundo lucida lucida SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 575. BANNERMAN, 1932, Ibis, p. 218 (in part. Congo).

SPECIMENS: Stanleyville, two females, August 16, November 8. Bengamisa, four males, female, September 28.

ADULTS OF BOTH SEXES: Iris dark brown, bill and feet black.

DISTRIBUTION OF THE SPECIES: From the Gambia eastward to the interior of the Gold Coast, Timbuktu and Zinder, also about Stanley Pool and Stanley Falls on the Congo, and in central and southern Abyssinia. The race *subalaris,* restricted to the Congo, differs from the three other geographic forms in having a better-developed frontal patch of chestnut in both sexes, 6 to 7 mm. broad. In *H. l. rothschildi* Neumann of Abyssinia the feathering beneath the manus is very black, and the "axillaries" are almost white.

While not of general distribution along the Congo and never noticed at Lukolela, this swallow occurs in numbers in the vicinity of Stanleyville and also about Stanley Pool. We saw it at Leopoldville in July, 1909, and again on several occasions toward March, 1943. The two specimens sent us from Brazzaville by Malbrant are both immature and therefore do not show any broad frontal patch.

About Stanleyville, in clearings and along river banks, there is a large population of *subalaris*. They resemble *H. rustica* in behavior and voice but can be distinguished at once by the large white areas on the rectrices. We collected a breeding female there in August, 1909. Coming down the Aruwimi River to Banalia in 1914 we did not observe the species, but at Bengamisa on the lower Lindi River, September 28, fully 30 or 40 were flying about a house. In the afternoon they began alighting beneath the roof of the verandah.

The birds show great fondness for villages. At Stanleyville they rested on dead trees as well as on rocks and posts in the river. A large number gathered one rainy morning to catch flying termites near our house. In October and November there was no indication of nesting. In West Africa nominate *lucida* places its cup-shaped mud abode about buildings between March and May, and lays three or four eggs blotched with brownish red, measuring about 17.5 by 13 mm.

Hirundo rustica rustica Linnaeus

Hirundo rustica LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 191 (Europe; restricted type locality: Sweden). SCHALOW, 1886, Jour. Ornith., pp. 422, 431 (Luvua R.; Lulenge R.). REICHENOW, 1887, Jour. Ornith., p. 306 (Stanleyville); 1903, Die Vögel Afrikas, vol. 2, p. 406; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 297 (Beni; Kisenyi; Rutshuru Plain). EMIN, 1894, Jour. Ornith., pp. 163, 169 (Ndussuma; old Irumu). NEAVE, 1910, Ibis, p. 122 (Mazanguli, Lualaba Valley; Lubudi and Lufupa rivers). MOURITZ, 1914, Ibis, pp. 33, 37 (Kalonga; Katala's kraal–Sakania). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 241 (Urundi; Baraka; Beni; Beni–Mawambi; Ukaika). SCHOUTEDEN, 1918, Rev. Zool. Bot. Africaines, vol. 5, p. 254 (Mambamuku; Tsisirongo; foot of Mt. Karisimbi; Kibati; Luvungi; Mai-na-Kwenda); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 124 (Buta; Kotili).

? *Hirundo angolensis* REICHENOW, 1894, Jour. Ornith., p. 169 (old Irumu).

Chelidon rustica LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 10 (Mukibungu).

Hirundo rustica rustica SCHOUTEDEN, 1923, Rev. Zool. Bot. Africaines, vol. 11, p. 341 (Luebo; Basongo); 1924, idem, vol. 12, p. 420 (Eala; Bikoro); 1938, Ex-

ploration du Parc National Albert, Mission de Witte, fasc. 9, p. 122 (Mai-ya-Moto; Rutshuru; Katanda); 1943, Rev. Zool. Bot. Africaines, vol. 37, p. 271 (Gabiro). GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 49; 1937, idem, vol. 22, pp. 61, 62. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 236, fig. 41. VERHEYEN, 1939, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 15, no. 66, p. 5 (Bambesa); 1947, idem, vol. 23, no. 10, p. 2 (Musosa). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 67 (Brazzaville; les Ouaddas; Bangui).

Hirondo rustica rustica VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 75 (Semliki R.; Kanyabisika near Lutunguru).

SPECIMENS: Avakubi, male, October 30; two females, July 3, October 30; two immature males, October 30; immature female, September 4. Ngayu, male, December 17; two immature males, December 14. Gamangui, female, February 3. Medje, four males, January 13, 17, 19; three females, January 17, 19. Bafwabaka, male, January 2; female, January 5; two immature males, December 31, January 5. Faradje, male, October 16.

DISTRIBUTION OF THE SPECIES: All of Europe, Northwest Africa, Egypt, and Nubia, Asia north of the Himalayas, Japan, and North America, into parts of Mexico. That vast area is occupied during the breeding season by some six different races, of which three migrate far to the southward.

Hirundo r. rustica, after nesting from Morocco and Europe to western Siberia, moves southward to India and over the whole African continent to the Cape and to São Tomé. Its "winter" is spent from the southern Sudan southward. It frequents wooded regions and savannas alike and is seen in numbers in clearings of the equatorial forest. Only on the higher mountains is it usually wanting, though I have noted two or three on west Ruwenzori at 7000 feet.

In 1910 the European swallow reached Medje in mid-September, and several large flocks were seen by October 4. At Faradje the first arrival was noted in 1911 on September 6, in 1912 on September 10. At Avakubi in 1913 single birds were twice observed in August, the first on the tenth, and a third bird on September 3. In 1914, at Bengamisa, the first returned swallow was observed on September 29. At Kasenyi in 1926 I noted a swallow on August 25. At Lukolela on the middle Congo in 1930 no European swallow was seen until November 26, when a flock of 30 appeared. In Northern Rhodesia Winterbottom found the autumn arrival dates varying from September 2 to October 7, the mass of the birds coming in November.

The departure for the north is a rather gradual process. Some individuals are known to tarry in Natal and the Cape Province until late April, and in Southwest Africa until April 22, though by that time the majority have already left the Congo. Neave, moreover, took a specimen in the Katanga on April 24, and Pilette another in the Ruzizi Valley on May 9. In Northern Rhodesia Winterbottom found the dates for the last departures varying from April 15 to May 3. My own latest record for the Lower Congo is April 23.

A few individuals, usually found to have gonads quiescent, have been noted in June and July in southern and eastern Africa. On July 3 I collected such a female near Avakubi. Dybowski found a male at Brazzaville on August 10. We may be certain that none ever nests in equatorial Africa.

Since 1922 at least 17 ringed swallows of this species have been recovered in the Belgian Congo at points scattered all the way from the Lower Congo and Kasai to the Lower Uelle, the Lualaba River, and the Manyema. Most of them had been marked in Germany, but one in Wales, one in Holland, one in Poland, and one perhaps in Russia. Swallows ringed in Great Britain have been found to winter most often in extreme southeastern Africa.

It seems more practical to segregate the references to returns of ringed individuals and to list them in chronological order. In almost every case the scientific name given was *Hirundo rustica* or *H. r. rustica:*

WITHERBY, 1923, British birds, vol. 17, pp. 60, 80 (near Luozi). LINCOLN, 1925, Auk, p. 380. THOMSON, 1926, Problems of bird migration, pp. 157–159, map. LUCANUS, 1928, Rätsel des Vogelzüges, ed. 3, p. 83. WITHERBY AND LEACH, 1931, British birds, vol. 25, p. 127, map. DROST, 1931, Vogelzug, p. 136 (Sundi Lutete). SCHÜZ AND WEIGOLD, 1931, Atlas des Vogelzuges, pp. 103, 153, pl. 148. P. TOM DIEK AND OTTO, 1934, Vogelzug, p. 90 (Demandja in Manyema). DUPOND, 1935, Gerfaut, vol. 25, p. 122 (Essebi near Aru); 1936, Gerfaut, vol. 26, p. 251 (Inkongo near Lusambo); 1937, Gerfaut, vol. 27, pp. 99, 233 (Ganda near Kibombo; Kirundu; Bambesa). SCHÜZ, 1937, Ornith. Monatsber., p. 138, map (Bwania in Kasai). DUPOND, 1938, Gerfaut, vol. 28, p. 39 (Ponthierville). DROST AND SCHÜZ, 1938, Vogelzug, pp. 203, 204 (Bonjo near Lisala; Kimpangu in Cataracts district). SCHÜZ, 1939, Proc. 8th Internatl. Ornith. Congr., Oxford (1934), p. 553, map. JUNGE, 1940, Limosa, vol. 13, p. 136 (Bienga near Luozi). DUPOND, 1940, Gerfaut, vol. 30, pp. 86, 138 (Thysville; Bumba). BRICHET, 1940, Bull. Soc. Bot. Zool. Congolaises, vol. 3, no. 3, pp. 6, 8. DROST AND SCHÜZ, 1952, Vogelwarte, vol. 16, pp. 95–98, map.

Not infrequently, in their winter quarters in central Africa,

European swallows try to come and roost beneath the eaves or inside houses at night. In the clearings of the Ituri they are one of the most familiar birds during their off season and known, as are all other swallows to the Wangwana, as "Kawaiawaia." In the Uelle they find wider room for flight and are less attached to human settlements. To all swallows the Mangbetu give the name "Nambámbara," the Azande "Mbirambira." One sees European swallows with other birds, such as bee-eaters and rollers, catching insects near grass fires, and attacking swarms of winged termites whenever occasion offers. In the few stomachs I examined were small beetles, winged ants, and small grasshoppers, and the diet must include insects of many other kinds.

[*Hirundo rustica transitiva* (Hartert)]

Chelidon rustica transitiva HARTERT, 1910, Die Vögel der paläarktischen Fauna, vol. 1, p. 802 (type locality: Esdraelon, Palestine).

Hirundo rustica transitiva MEINERTZHAGEN, 1922, Ibis, p. 33 (Uganda). WHITE, 1943, Ostrich, vol. 14, p. 12 (Lusaka, Northern Rhodesia).

The swallows breeding in Palestine are more rufous beneath than the nominate race, thus approaching *H. r. savignii* of Egypt. Specimens resembling *transitiva* in color have been collected in Kenya Colony, Uganda, and the Kivu and Ituri districts of the Congo. White has reported one from Northern Rhodesia. But there is considerable variation among European birds, and I am scarcely convinced that such deep-colored individuals really come from the breeding population of Palestine, which would not be expected to migrate very far.

KEY TO THE SPECIES OF *Cecropis* IN THE CONGO

1. Crown rufous 2
   Crown glossy blue-black, like the back 3
2. Wing not exceeding 116 mm.; ear coverts rufous like crown; streaking of throat and breast coarse and black ..... *C. abyssinica*
   Wing more than 116 mm.; ear coverts mostly whitish streaked with brown, streaking of throat and breast narrow ..... *C. cucullata*
3. Under tail coverts mainly, or at least half, black; fine dark shaft streaks on chest ..... *C. daurica*
   Under tail coverts wholly rufous, or only tipped with black 4
4. Wing less than 135 mm. long; ear coverts and temporal region black ..... *C. semirufa*
   Wing more than 135 mm. long; ear coverts cream-color or light rufous, temporal region deeper rufous ..... *C. senegalensis*

Cecropis abyssinica unitatis (Sclater and Mackworth-Praed)

Hirundo puella unitatis SCLATER AND MACKWORTH-PRAED, 1918, Ibis, p. 718 (type locality: Pinetown, Natal). SCHOUTEDEN, 1923, Rev. Zool. Bot. Africaines, vol. 11, pp. 399, 342 (Kwamouth; Basongo; Luebo; Makumbi); 1925, idem, vol. 13, p. 16 (Bolobo). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 227 (Ngoma).

Cecropis striolata JOHNSTON, 1884, The River Congo, p. 365 (Vivi).

Hirundo pulchella SCHALOW, 1886, Jour. Ornith., p. 425 (Lugoma R.).

Hirundo puella SCHALOW, 1886, Jour. Ornith., pp. 417, 424, 425 (Lufuku R.; L. Itambe). MATSCHIE, 1887, Jour. Ornith., p. 152 (Luvule R.; Mpala). SHELLEY, 1890, Ibis, p. 163 (lower Congo R.). REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 413; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 297 (Kisenyi; Ishangi). DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 33. NEAVE, 1910, Ibis, p. 123 (Busanga; Bunkeya R.). MOURITZ, 1914, Ibis, p. 33 (Kalonga, southeastern Katanga). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 242 (Baraka; Moera). SCHOUTEDEN, 1918, Rev. Zool. Bot. Africaines, vol. 5, p. 255 (Beni; Zambo; Mission St. Joseph at Bobandana; Kabemba; Kalembé; Dogodo R.). CHAPIN, 1921, Amer. Mus. Novitates, no. 17, p. 14 (Aba; Garamba; Gangura's; Nzoro; Dungu). DE RIEMAECKER, 1927, Rev. Zool. Bot. Africaines, vol. 14, p. 281 (Elisabethville).

Hirundo abyssinica unitatis BOWEN, 1931, Proc. Acad. Nat. Sci. Philadelphia, vol. 83, p. 63, 291 (Bukama). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 124 (Dramba); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 123 (Mugunga; Nzulu; Kanyabayongo, 1760 m.). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 50. LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 113 (Lubishi Valley near Kimpanga). VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, pp. 36, 75 (Rutshuru).

SPECIMENS: Matadi, two females, December 28. Irebu, male, December 17. Nzoro, two males, April 7, 21; female, April 13. Aba, two males, July 13; two females, December 12, 16.

ADULTS OF BOTH SEXES: Iris very dark brown, bill and feet blackish.

DISTRIBUTION OF THE SPECIES: Most of the Ethiopian region, from eastern Cape Province to Senegal, Darfur, and northern Abyssinia, but absent from the driest regions of Southwest Africa and Somaliland and avoiding most parts of the Lower Guinea forest.

The Upper Guinea race, *Cecropis a. puella* (Temminck and Schlegel) is finely striped below, with wings only 95–106 mm.; Darfur has a rather similar form, *C. a. bannermani* (Grant and Mackworth-Praed). The Abyssinian *C. a. abyssinica* (Guérin), a little more heavily striped, probably extends into northern Kenya Colony. *Cecropis a. maxima* (Bannerman), of the Niger

Delta and Cameroon highlands, is very heavily striped beneath, and its wings measure 107–116 mm.

The remainder of the range, from the southern Sudan, the Congo, and Uganda southward, is occupied by *C. a. unitatis*, rather broadly striped beneath, with wings 101–115 mm. This subspecies extends across the whole Congo, but avoids the lowland forest except along some of the large rivers and is wanting on all the higher mountains, especially those that are forested. In some parts of the Kivu it is known to reach 5700 feet.

In the northeastern Congo this stripe-breasted swallow was seldom seen except in the vicinity of rocky hills with cliffs and overhanging ledges. Thus about the hills near Aba they were regularly to be found, flying anxiously back and forth, or feeding high in the air, but seldom perching. Others were noted near Mt. Gaima and near Gangura's village, at Mt. Ataramba just west of Dungu, and a few about some hills northwest of Pawa. At Medje only a single example was ever noticed.

From my experience it seemed much more widespread in the eastern Congo and Katanga; it ranges up the main stream of the Congo at least to Irebu, Coquilhatville, and Mobeka; and at Leopoldville, Matadi, Boma, and Ganda Sundi it nests commonly under the verandahs of modern buildings. I found no proof of any real migration within the limits of the Congo. Many old nests, of enclosed "cliff swallow" type, were found beneath overhanging rocks near Aba, but the specimens taken there in July and December were all non-breeding adults. Only in April did I obtain two adults in breeding condition, near Nzoro. In the Uelle the nesting season seemed short, coming at the end of the drought and beginning of rains; at Watsa Vrydagh noted nesting as late as June. Bambesa was visited only in the off season.

At Boma on the lower Congo I watched a pair at their nest on June 23, at the beginning of the dry season, and at Leopoldville breeding seems to go on well into the rains. In Southern Rhodesia Swynnerton[1] reported nesting from July to November, mainly dry months there. In the Kasai nesting begins also in July. But near the Equator in the Congo I should expect nests at almost any season. Their abodes are not grouped together, and the entrance is prolonged into a sort of tunnel, attached to

[1] 1908, Ibis, pp. 104, 105.

the ceiling or rock surface like the main body of the nest. Eggs number two to four, are either pure white or white lightly speckled with reddish brown, and measure 19–20 by 13.5–14 mm.

There is good evidence that these swallows are often driven from their nests, before they can use them, by *Apus caffer*, which glues more feathers on the inner walls. A nest thus inhabited by the swifts can often be recognized from the presence of feathers just inside the entrance.

Cecropis cucullata (Boddaert)

Hirundo cucullata BODDAERT, 1783, Table des planches enluminéez, p. 45 (type locality: Cape of Good Hope). MOURITZ, 1914, Ibis, pp. 30, 37 (Mt. Moposhi; Musoshi R.). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 113 (Tshikapa; Kayoyo; Sandoa). J. VINCENT, 1945, Ostrich, vol. 16, p. 74.

DISTRIBUTION: Breeding in South Africa from Cape Province to Southwest Africa and Southern Rhodesia, between September and May. Then it migrates northward, and is known to occur during its off season in southern Angola, the southern Kasai, the Katanga, and Mbeya in southwest Tanganyika Territory.

The dates when Mouritz saw the larger stripe-breasted swallow in the southeastern Katanga are not clearly stated, but Lynes and Vincent found flocks in the southern Congo in September and October, presumably on their way south. Father P. Van Assche writes me that he took three specimens at Katombe in the Kasai Province on August 31 and October 10. Hare[1] reported a few in Tanganyika Territory in July.

There has at times been some confusion between *C. cucullata* and the smaller *C. abyssinica*. Their behavior is rather similar, the former also nesting on rocky hills as well as about houses and sheds. The larger species certainly migrates to the southern Congo to spend the dry season and is not expected to nest. It builds a much bigger mud nest than *abyssinica*, of the same form, and its white eggs measure 19.5–23 by 14–15.2 mm.

Cecropis daurica emini (Reichenow)

Hirundo emini REICHENOW, 1892, Jour. Ornith., pp. 30, 215 (type locality: Bussisi on southern shore of L. Victoria); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 298 (L. Kivu). OGILVIE-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 409 (Mubuku Valley, 6000–8500 ft.). SASSI, 1916, Ann.

[1] 1946, Ostrich, vol. 17, pp. 127, 128.

Naturhist. Mus. Wien, vol. 30, p. 242 (Kasindi–Beni). SCHOUTEDEN, 1918, Rev. Zool. Bot. Africaines, vol. 5, p. 255 (Nya-Lukemba; Yamba-Yamba; Dogodo R.).

Hirundo melanocrissa emini GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 227 (Ngoma).

Hirundo rufula emini SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 578. SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 310 (Kisenyi; Burunga; Lulenga); 1933, idem, vol. 22, p. 375; 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 124 (Kanyabayongo, 1760 m.; Katanda). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 47 (Ruanda; "Urundi"). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 3, p. 1146.

DISTRIBUTION OF THE SPECIES: Opinions differ as to the number of races which should be grouped together. Some have preferred to keep *C. rufula* (Temminck) separated from *C. daurica* (Linnaeus), but even *C. striolata* (Temminck and Schlegel) is so closely allied that any lines are hard to draw. The range of *daurica*, including *rufula* and its allies, may be said to extend from Morocco and southeastern Europe to Japan and eastern Siberia, south to the whole Sudan, eastern Africa to Nyasaland, also southern Asia to Ceylon. Within that wide area some 14 subspecies are probably to be recognized. *Cecropis striolata*, ranging south to Java and Borneo, would add four more.

Here we can discuss only the races occurring near the Congo; these have little trace of streaking on the breast. The pale-breasted *C. daurica domicella* (Finsch and Hartlaub), with wings 110–117 mm., ranges across the Sudan from Senegal to the Bahr-el-Jebel, while *C. d. emini*, larger and of deeper color, occupies the highlands from southern Abyssinia to southern Nyasaland. Its wings measure 117–125 mm.

Emin's swallow prefers open country at levels around 4000 to 7000 feet but has been found somewhat lower near Lake Edward and somewhat higher on east Ruwenzori. It must once have nested only on rocks, but now has also become a very familiar bird about houses of civilized construction. In flight it looks much like *C. senegalensis*, but is not quite so large. The published localities do not give a complete picture of distribution in the eastern Congo.

In 1926 I saw a few about Mt. Avu on the Lendu Plateau, north of Nioka, and more about the houses at Nizi, near Kilo, where they were building nests on August 21. Near Kalongi on the west slope of Ruwenzori and near 4000 to 4500 feet on the

grassy southern extremity of that same range they are regular and frequent. The highlands west of Lake Edward are well occupied, as are those around Lake Kivu and some also near the northern end of Lake Tanganyika. But I have seen no specimen from Marungu or the Katanga.

In the post of Luofu a pair had almost completed their nest on March 17, plastered against the ceiling in an angle of the walls. In addition to the normal twitter of a swallow, they uttered a hoarse "chwip" and also a nasal note recalling that of *C. senegalensis* but not so long-drawn. Nests of Emin's swallow are like those of *C. semirufa* but bulkier, with a rather long tube at the entrance, and the eggs are pure white.

[*Cecropis daurica domicella* (Finsch and Hartlaub)]

Hirundo domicella FINSCH AND HARTLAUB, 1870, Die Vögel Ost-Afrikas, p. 143 (type locality: Casamance, West Africa). SCLATER AND MACKWORTH-PRAED, 1918, Ibis, p. 719 (Kajo-Kaji). EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, p. 53 (Kajándsa on west shore of L. Albert).

Of wide distribution all across the lowlands of the Sudan, east to the Lado district and the Baro River, this swallow might perhaps be expected at the north end of Lake Albert. The fact that Emin mentioned it as one of three kinds of swallows seen at Kayandsa is no proof, but there is an authentic record from Kajo-Kaji, less than 60 miles from the Congo border.

Cecropis senegalensis saturatior (Bannerman)

Hirundo senegalensis saturatior BANNERMAN, 1923, Bull. Brit. Ornith. Club, vol. 43, p. 85 (type locality: Accra, Gold Coast). GRANT AND MACKWORTH-PRAED, 1942, Bull. Brit. Ornith. Club, vol. 62, p. 49.

? *Hirundo melanocrissa* JOHNSTON, 1884, The River Congo, p. 364 ("Upper River").

Hirundo senegalensis HARTERT, 1900, Novitates Zool., vol. 7, p. 35 (Beni–Avakubi). REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 415; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 297 (Mawambi; Kisenyi). SALVADORI, 1911, Ann. Mus. Civ. Genova, ser. 3, vol. 5, p. 447 (Uelle). SCHOUTEDEN, 1914, Rev. Zool. Bot. Africaines, vol. 3, p. 266 (Kilo); 1918, idem, vol. 5, p. 255 (Beni; Zambo; Nya-Lukemba; Mutiba; Kabambare: Kinabe); 1926, idem, vol. 13, p. 201 (Makaia-Ntete). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 242 (Mawambi–Irumu). EMIN, 1919, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 2, p. 424 (Tobbo).

Hirundo senegalensis senegalensis BANNERMAN, 1923, Bull. Brit. Ornith. Club, vol. 43, p. 85. SCHOUTEDEN, 1924, Rev. Zool. Bot. Africaines, vol. 12, p. 420 (Eala); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 124 (Mauda;

Buta; Djalasinda; Niarembe; Faradje; Medje; Titule); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 124 (Mai-ya-Moto). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 228 (Kartushi; Abeli). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 579. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 48.

Hirundo senegalensis aschani JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 3, p. 1147 (Uganda).

Hirundo senegalensis subsp. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, pp. 255, 256 (southern Cameroon to Kenya).

SPECIMENS: Avakubi, female, October 18; immature male, immature female, October 25. Ngayu, male, December 21; two immature males, December 19, 25; two immature females, December 19, 24. Medje, four males, January 14, May 12, June 8; two females, March 29, July 7; immature female, July 7. Faradje, two males, April 9, November 8; three females, April 9, October 14; two immature females, November 8.

ADULTS OF BOTH SEXES: Iris dark brown; bill black; feet blackish brown.

DISTRIBUTION OF THE SPECIES: Senegal to Darfur and Abyssinia and south to Ovamboland and to Inhambane in Portuguese East Africa. *C. s. senegalensis* (Linnaeus), a little paler rufous below than the other races, ranges from Senegal to Kordofan, mainly in grasslands. *C. s. saturatior* is deeper rufous and likewise without any white spots on tail quills. It is distributed in more rainy areas from the southern Gold Coast Colony to Abyssinia, south to the Lower Congo, the southern border of the Upper Congo forest, Lake Kivu, Uganda, and the highlands of Kenya Colony. South of the line just indicated, white areas appear on some of the outer rectrices; these are the distinguishing mark of *C. s. monteiri*, which occupies much of the southern part of the range of the species. But while *monteiri* in Angola is dark beneath and very long-tailed, the rather similar birds living near the East Coast are often a little lighter beneath and distinctly shorter-tailed. The latter must be recognized as *C. s. hybrida* (Van Someren).

In the clearings of the Ituri forest *C. s. saturatior* is the common large swallow, as it is also in the savannas of the Uelle and the region of Irumu and Beni. As a rule it avoids the highlands above 5000 feet and seems to be much less common in the more central parts of the Upper Congo forest. While birds with white spots on the tail and others without are said to occur along the Loango Coast, in the Mayombe Forest I saw only *saturatior*.

About Avakubi and Medje there seemed to be a rather well-defined breeding season. From October to February flocks of up to 30 would circle about the clearings with strong, direct flight. When they did alight it was on a very high branch of some leafless tree. The call note was a nasal "nyă," instantly recognizable. Toward the end of March they began to pair and to gather mud at the edges of puddles left after rains. Then the pair would fly together to some knothole high up in a large tree, and one or both would enter. As late as July 7 I found three or four pairs still collecting mud, though there were already some young birds on the wing.

In the Uelle, too, breeding went on between April and July, and no nest was ever seen on a house or cliff. In addition to the nasal call note, which might be rather prolonged, the birds gave something that seemed like a song, a guttural "chuckle chuckle chuckle. . ." uttered very rapidly and introduced by the nasal note. Toward the end of the rains, when nesting was ended, these swallows gathered at dusk in compact flocks of 70 to 100 and went to roost amid the high grass and bushes, not in swamps. Their nasal voices proved their identity.

In the Congo hollows in trees are always the normal nest site, plastered with mud and lined no doubt with feathers. In East Africa, however, huge nests are not infrequently plastered on brick buildings. Pitman found that the eggs are usually three, sometimes four, pure white and averaging 21 by 14 mm.

Cecropis senegalensis monteiri (Hartlaub)

Hirundo monteiri HARTLAUB, 1862, Ibis, pp. 336, 340, pl. 11 (type locality: Massangano in northwestern Angola). SCHALOW, 1886, Jour. Ornith., p. 412. MATSCHIE, 1887, Jour. Ornith., p. 152 (Mpala). REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 416. OGILVIE-GRANT, 1908, Ibis, p. 309 (east of Kasongo). NEAVE, 1910, Ibis, p. 123 (Kambove; Bunkeya R.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 242 (northwest of L. Tanganyika, 2000 m.).

Hirundo senegalensis SCHALOW, 1886, Jour. Ornith., pp. 422, 425 (Luvua R.; Lugoma R.); 1887, idem, p. 237. MATSCHIE, 1887, Jour. Ornith., p. 152.

Hirundo senegalensis monteiri SCHOUTEDEN, 1923, Rev. Zool. Bot. Africaines, vol. 11, p. 342 (Ngombe in Kasai; Tshikapa); 1924, idem, vol. 12, p. 272 (Kisantu); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 124 (Mai-ya-Moto). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 579. GRANVIK, 1934, Rev. Zool. Bot. Africaines, vol. 25, p. 114. FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 48 (Congo R. mouth; Katanga). JACKSON, 1938, The birds of Kenya Colony and...Uganda, vol. 3, p. 1149.

BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 258. GRANT AND MACKWORTH-PRAED, 1942, Bull. Brit. Ornith. Club, vol. 62, p. 49.

DISTRIBUTION: Ovamboland and Southern Rhodesia north to the northern end of Lake Tanganyika, the southern edge of the Upper Congo forest, and the Loango Coast. I have seen a specimen with well-developed tail spots from Idjwi Island in Lake Kivu.

The race *monteiri* is not only deep rufous below but also longer tailed than any of the other races. Specimens of both sexes from Angola have tails 108–131 mm. long, while 10 examples of *hybrida* from Mombasa to Beira have them 103–113 mm. Unfortunately the increase in length of tail toward the west seems a gradual one; in seven specimens taken from Idjwi Island and Baraka to the Katanga the tail measures 102–115 mm. In this respect one might say they resemble *hybrida*, but they differ little in other ways from Angola birds.

It would seem that this swallow is less common in the Kasai District than in many adjacent regions. Though mainly a lowland bird, it was collected by Grauer on Idjwi Island and up to 6500 feet on the mountains near Baraka. Rockefeller and Murphy took three specimens at Moba on Lake Tanganyika and one at Ketendwe, 6000 feet, in Marungu.

The behavior of Monteiro's swallow is exactly like that of *C. s. saturatior*. It has a definite breeding season, during the rains. Hollows in trees must be used most frequently, but nests on verandahs and buildings have been reported from Lundazi and Kasama in Northern Rhodesia. Eggs are white, in sets of two to four. Benson gave measurements of 23.8 by 16.4 and 24.3 by 16.4 mm.

Cecropis semirufa semirufa (Sundevall)

Hirundo semirufa SUNDEVALL, 1850, Öfvers. K. Vetensk. Akad. Förhandl., vol. 7, p. 107 (type locality: Magaliesberg, Transvaal). REICHENOW, 1887, Jour. Ornith., pp. 308, 309 (Kasongo; Kibondo); 1903, Die Vögel Afrikas, vol. 2, p. 417. SHARPE AND WYATT, 1894, A monograph of the Hirundinidae, vol. 2, p. 424.

Hirundo semirufa semirufa SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 579. LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 113 (Biano Plateau). A. W. VINCENT, 1949, Ibis, p. 112 (Elisabethville).

DISTRIBUTION OF THE SPECIES: Natal, Transvaal, and northern Damaraland to the interior of East Africa, the Bahr-el-Jebel, Darfur, upper Niger, and Senegal. *Cecropis s. semirufa*, breeding

in South Africa, Southern Rhodesia, and probably in southern Angola, is deep rufous over the whole under surface and has wings 129–139 mm. long. West Africa and the Sudan, as well as the equatorial part of the Congo and the northwestern section of Angola, are occupied by *C. s. gordoni*, with much paler underparts, and wings only 110–123 mm. Birds of intermediate coloration, referable to *C. s. neumanni*, with wings 111–130 mm., are distributed from the Kasai District to southwestern Kenya Colony and Uganda.

The nominate South African race is believed to be rather migratory, but it has also been found breeding in the Upper Katanga and has been reported from the Manyema. Bohndorff's birds from Kasongo in June seem to me correctly identified. Two specimens from Luluabourg in September approach *semirufa* in color but have wings only 122 and 130 mm. long, while six others are *neumanni*. Migrants of the race *semirufa* are perhaps to be expected in the southeastern savannas of the Congo from April to September. Near Elisabethville Alfred Vincent found nests from mid-October through November, in circular iron culverts under the railway tracks. Sets were of four eggs, pure white, averaging 23 by 15.3 mm.

Cecropis semirufa neumanni (Reichenow)

Hirundo neumanni REICHENOW, 1901, Jour. Ornith., p. 282 (type locality: Sero in northwestern Masailand, i.e., near the Southern Guaso Nyiro, Kenya Colony).

Hirundo gordoni OGILVIE-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 408 (Mokia). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 242 (Beni).

Hirundo semirufa VAN SOMEREN, 1922, Novitates Zool., vol. 29, p. 92 ("Kivu").

Hirundo semirufa neumanni SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 123 (Rutshuru; Ruindi).

Hirundo semirufa gordoni JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 3, p. 1149 (Masindi; Mohokyia).

DISTRIBUTION: From southwestern Kenya Colony through Uganda to the eastern border of the Congo forest, perhaps northward to Mongalla Province on the White Nile, and certainly on the south of the forest to Luluabourg in the Kasai. It may prove a little difficult to distinguish *neumanni* from *gordoni* where they meet in the northeastern Congo; elsewhere the difference in color is fairly clear. A male from Irumu has the wing 126 mm., another from Katanda near Rutshuru 125 mm. Six undoubted

examples of *neumanni* from Luluabourg have wings 120–127 mm.

These swallows are to be seen frequently on the plains both north and south of Lake Edward and on the west side of Lake Albert. In general they avoid areas above 4500 feet, yet the lack of records from the lowlands near the northern end of Lake Tanganyika surprises me, especially in view of the occurrence of *neumanni* in the Kasai.

The appearance and behavior of this race are closely similar to those of *C. s. gordoni*. Its nest is very like that of *C. daurica emini*, with a long tunnel entrance and a lining of grass and feathers. One was found in the Kavirondo District by MacInnes under an arch between two termite hills; in Uganda the large drain pipes under roads are favored sites. Sets may be of two or of three eggs, always white.

Cecropis semirufa gordoni (Jardine)

Hirundo gordoni JARDINE, 1851, Contributions to ornithology, p. 141 (type locality: Cape Coast Castle, Gold Coast). SHELLEY, 1890, Ibis, p. 163 (Yambuya). SHARPE AND WYATT, 1894, A monograph of the Hirundinidae, vol. 2, p. 424. REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 418. OUSTALET, 1904, Bull. Mus. Hist. Nat. Paris, vol. 10, p. 541 (upper Kemo R.).

Hirundo semirufa SHARPE AND BOUVIER, 1877, Bull. Soc. Zool. France, vol. 2, p. 474 (San Antonio; Boma).

Hirundo semirufa gordoni BANNERMAN, 1922, Rev. Zool. Bot. Africaines, vol. 9, p. 409; 1939, The birds of tropical West Africa, vol. 5, p. 258. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 580. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 124 (Poko; Rungu; Buta); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 121, footnote (Faradje; Abimva). LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 113 (Lusambo). BOUET, 1945, Ois. Rev. Française Ornith., new ser., vol. 14, p. 67.

Hirundo semirufa semirufa SCHOUTEDEN, 1923, Rev. Zool. Bot. Africaines, vol. 11, p. 399 (Kwamouth); 1925, idem, vol. 13, p. 17 (Bolobo).

Hirundo rufula emini SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 124 (Abimva; Faradje).

SPECIMENS: Bumba, male, female, July 29. Rungu, female, June 29. Dungu, immature female, June 30. Nzoro, female, April 9. Faradje, male, April 9; three females, April 9, 14, 29.

ADULTS OF BOTH SEXES: Iris dark brown; bill black; feet dark brown.

DISTRIBUTION: From Senegal across the Sudan to Darfur and the vicinity of the Lado district, southward to the coast of Upper Guinea and crossing the Gaboon and Lower Congo to Ndala Tando and Canhoca in Angola. In the Upper Congo, Gordon's

swallow seems to be lacking in some forested areas, but it occurs along the larger rivers, as at Lukolela, Bumba, and Stanleyville. Lynes has reported it at Lusambo, on the southern edge of the forest.

At Ganda Sundi in the Mayombe I saw only a few, about the village; near Lukolela pairs were occasionally noticed. At Stanleyville in 1914 they were noted many times, but I saw none between there and Nala, on the northern edge of the Ituri forest. In the savannas of the Upper Uelle *Cecropis s. gordoni* is fairly numerous, often associated with *C. senegalensis*, from which it can easily be distinguished by its black ear coverts and by its voice. The call note of *gordoni* is fainter and lacks the strident nasal tone of the larger bird. It is more like the twitter of *Hirundo rustica*.

In early April when the rains begin, these swallows alight at the

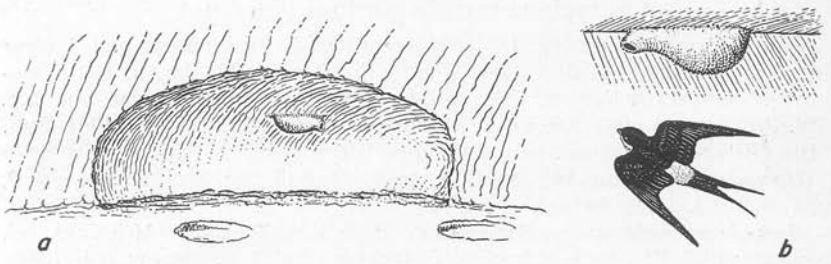

FIG. 35. Nests of *Cecropis semirufa gordoni*. A. In a hollow gouged in a clay bank by elephants. B. In the angle between wall and ceiling of a house.

edges of muddy spots in villages to gather pellets of wet clay. The breeding season there lasted from April to the end of July. Nests are very similar to those of *C. abyssinica*, of the gourd- or retort-type, with moderate spout, and plastered in a variery of sheltered situations. One nest near Nzoro, April 9, was attached to the vaulted roof of a small cave in a bank near the edge of a swamp dug out by elephants and other large mammals. Its lower surface had actually been rubbed smooth by animal backs. Inside was the female with three nestlings, still naked save for a little whitish down.

At Nala on July 3 a pair was building in the angle between the wall and ceiling of an empty house. They seemed to have been dispossessed of their first abode by swifts (*Apus caffer streubelii*) that were now using it. Close to the Equator one may well expect

two breeding seasons. At Bumba we watched a pair gathering nest materials in late July, and at Stanleyville, December 6, I found a nest stuck on the lower side of a fallen tree trunk only a yard above the ground. Another old nest in a very similar situation at Lukolela has convinced me that this must be a very normal site. Nests I measured varied from 25 to 29 cm. in length, 12 to 18 cm. across the widest part. The eggs of this race are three or four, white, and measure 18.8–20.3 by 13.6–14.5 mm.

KEY TO THE SPECIES OF *Petrochelidon* IN THE CONGO[1]

1. Larger, wings 111–117 mm.; rectrices wholly blackish.....*P. spilodera*
   Smaller, wings less than 102 mm. long; a white spot on inner webs of many of the rectrices.....2
2. Bright rufous on throat and fore neck; temporal region may show rufous edgings but no distinct rufous area.....*P. rufigula*
   Pale rufous or buffy on throat and fore neck, temporal region with a small patch or stripe of rufous.....*P. preussi*

Petrochelidon preussi (Reichenow)

Lecythoplastes preussi REICHENOW, 1898, Ornith. Monatsber., p. 115 (type locality: North Falls of Sanaga R., near Edea, Cameroon). CHAPIN, 1921, Amer. Mus. Novitates, no. 17, p. 13 (Gangara-na-Bodjo; also 25 miles to the southward). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 270, fig. 45.

Petrochelidon preussi SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 581. SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 125.

SPECIMENS: Gangara-na-Bodjo, between Faradje and Dungu, two males, female, June 1.

ADULTS OF BOTH SEXES: Iris dark brown; bill black; feet dark brownish.

DISTRIBUTION: From the vicinity of Timbuktu and Gambaga in the Gold Coast Colony eastward to Lake Chad, Edea in the Cameroon, and the neighborhood of Faradje and Nzoro in the northeast Congo.

Preuss's cliff swallow is found over a wide area of savanna country, but only in places where it has established breeding colonies. It was discovered at the North Falls of the Sanaga River, nesting in numbers on a cliff in April, and other specimens

[1] A small dark species of this genus, *P. fuliginosa* (Chapin), almost entirely sooty brown in color, even on the rump, is known to be rather widely distributed in the forested lowlands of the Cameroon and Gaboon. It has not yet been found near the borders of the Congo.

were later taken there by E. Reichenow and the Rev. J. A. Reis, Jr. George L. Bates met with these sociable swallows at a number of places from Nigeria to Lake Chad, once on a cliff along the Niger River, at other times in buildings. Ronald Shuel also found another large breeding colony on a cliff about 60 miles below Lokodja on the Niger. Eggs are laid in western Africa from late February to the end of July.

At Gangara-na-Bodjo, on a hill near the Dungu River, June 1, 1911, I noticed a flock of a dozen of these small cliff swallows flying about the rest house and alighting on the bare ground. I recall that there were some full-grown young, but the three specimens preserved are all adult, in worn plumage, still showing enlargement of the gonads. On April 15 of the following year, some 25 miles farther south, I again encountered a single individual, flying near a narrow strip of woods, but my shot ruined it as a specimen.

We never found a breeding station in the Uelle District, nor any old nests attributable to these birds. But on June 22, 1937, I had the good fortune to see a colony at the airport near Niamey in the French Niger Territory. Under a sort of arcade extending around three sides of a house behind the hangar, approximately 100 nests were plastered in the angles of the ceiling, made of undulated iron with rounded cross-beams under it. All seemed freshly built, and some of the swallows entered and left while I watched. One even clung just below its doorway so that I could see the rufous temporal patch.

The striking point about these nests was that the entrances opened straight downward, often prolonged as a short tube, whereas the various species of *Cecropis* always extend their doorways horizontally against the supporting roof or rock. Others who had more time to examine the nests of *P. preussi* have ascertained that the interiors are well lined with feathers, that the set of eggs consists of two or of three, and the ground color is white, speckled with pale brick-red. Sometimes the speckling is so thick as to obscure all the white. Measurements are 16.4–21.5 by 11.9–13.4 mm.

Petrochelidon rufigula (Bocage)

Hirundo rufigula BOCAGE, 1878, Jor. Sci. Nat. Lisboa, vol. 6, pp. 256, 269 (type locality: Caconda, Angola).

Petrochelidon rufigula CHAPIN, 1937, Bull. Cercle Zool. Congolais, vol. 13, p. 109 (Sankuru R., near Pania Mutombo). DARTEVELLE, 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 70 (Mateba I.; Cul-de-Boma; Fetish Rock; Matadi ?).

DISTRIBUTION: From Caconda and Pungo Andongo in Angola east to the Manyinga River in Northern Rhodesia[1] and north to the Sankuru River, the Congo River below Matadi, and Loango. Closely allied to *P. preussi*, this small cliff swallow differs in being bright rufous on throat and fore neck, as well as on the rump, and in lacking the small temporal patch of rufous.

In behavior the two are very much alike, and *rufigula* is still known from few localities, where it nests in colonies. First discovered by Ghesquière along the cliffs of the Sankuru or Lubilash River, it was later found by Dartevelle to nest in numbers on cliffs along the lower Congo at Cul-de-Boma and Fetish Rock. He collected one at Mateba Island and believed he saw others at Matadi.

At Cul-de-Boma in April, 1937, Dartevelle found several hundred swallows flying about the nesting colony and collected both eggs and nestlings. The eggs were sometimes plain white, sometimes speckled with reddish.

Petrochelidon spilodera (Sundevall)

Hirundo spilodera SUNDEVALL, 1850, Öfvers. K. Svenska Vetensk. Akad. Förhandl., vol. 7, p. 108 (type locality: Valsch R., east of Kroonstad, Orange Free State).

Petrochelidon spilodera CHAPIN, 1937, Bull. Cercle Zool. Congolais, vol. 13, p. 109 (near Bolobo).

DISTRIBUTION: Breeding from Cape Province and Upper Natal to the Transvaal. Arriving from the north in the second half of August, it nests in large colonies under overhanging rocks, concrete bridges, and on buildings. South Africa is deserted again in April, and the birds' winter quarters were long a mystery.

Bradfield obtained specimens in Southwest Africa in August and October, and Austin Roberts observed a few in April at Damara Pan in the Kalahari. He considered them a remnant of the northward migratory flight. It was evident that the off-season range must be in Northern Rhodesia or the southern Congo, despite the lack of records. Toward 1936 the Congo Museum

[1] White, 1949, Ibis, p. 348.

received three skins from Schouteden's native collectors at Kunungu, near Bolobo on the middle Congo River. They were plainly immature cliff swallows with wings much too long for *P. rufigula*. Unfortunately their labels bore no date. I took them to London and compared them with the British Museum series of *P. spilodera*, to which species they clearly belonged. From the condition of their plumage, they must have been collected between May and July, and the Congo River is apt to be the extreme limit of their travels. The Kasai District, on the other hand, should have this bird more regularly as a migrant from the south.

Adults are distinguished by their dark brown crowns and black spotting on the fore neck. The tail is very slightly forked, and the wings measure 111–117 mm. The young are exceptionally dull in color, their tails showing little or no fork.

Delichon urbica urbica (Linnaeus)

Hirundo urbica LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 192 (Europe; restricted type locality: Sweden).

Chelidonaria urbica NEAVE, 1907, Mem. Proc. Manchester Lit. Phil. Soc., vol. 51, no. 10, p. 51 (Irumi Mountains).

Chelidon urbica NEAVE, 1910, Ibis, p. 122 (upper Lufira R.).

Hirundo urbica urbica HARTERT, 1910, Die Vögel der paläarktischen Fauna, vol. 1, p. 807, fig. 132.

Delichon urbica REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 299 (Kisenyi). MOURITZ, 1914, Ibis, p. 33 (Kalonga, in southeastern Katanga). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 125 (Uelle). WHITE, 1943, Ostrich, vol. 14, p. 12 (Mwinilunga).

Delichon urbica urbica GROTE, 1930, Mitt. Zool. Mus. Berlin, vol. 16, p. 51. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 287, fig. 54. BERLIOZ, 1939, Bull. Mus. Hist. Nat. Paris, ser. 2, vol. 11, p. 528 (Zémio on Mbomu R.).

SPECIMENS: Avakubi, three immature males, February 16, 18; female, February 16. Niangara, female, May 9. Faradje, male, two females, January 5; immature male, January 3. Aba, female, December 14.

ADULT MALE: Iris dark brown; bill black; the few scales showing on the feet are pale buff, claws dark gray.

DISTRIBUTION OF THE SPECIES: British Isles and western Europe, Northwest Africa, across Asia to eastern Siberia and Manchuria. Nominate *urbica* extends from Europe into Asia nearly to Irkutsk. *D. u. meridionalis* (Hartert) is smaller and breeds from southern Spain, Morocco, and Algeria eastward to

Turkestan. At the eastern end of the range, in Siberia and Manchuria, lives *D. u. whiteleyi* (Swinhoe), with upper tail-coverts wholly white.

After breeding in the area given above, the European house martin migrates south into Africa, even to the Cape Province. There is reliable evidence of its having nested in Cape Town and in eastern Cape Province.[1] Several examples have been taken on Principe Island, and two are reported to have reached Ascension Island in early November, 1946. Though seen less often than the other swallows from Europe, the house martin is of regular occurrence in most parts of the Congo, and some are there in the middle of the northern winter. Early in 1927 I noted a few near Mulu, northwest of Lake Edward, at Kabasha, and in the Rutshuru Plain. On October 24, 1930, I collected one at Kassa on the middle Congo River; the first arrivals in the northern Congo must be early in October.

Records from other parts of Africa have multiplied in recent years; occasionally large flocks have been seen. In the Upper Uelle house martins seemed fond of flying about rocky hills, sometimes in company with *Ptyonoprogne f. rufigula*. They were also seen over the river at Faradje. At Avakubi in 1914 they were rather common from February 16 to mid-March, usually high in the air. Their flight is not so gracefully undulating as that of *Hirundo rustica*. The white rump is a useful field mark.

Though the northward movement may begin in February, it continues until April, when we noted house martins as rather numerous near Gangura's, northwest of Nzoro. At Niangara I saw one on May 6, and natives found a dead bird three days later.

In three stomachs I have noted winged ants, and we found that house martins, like swifts, were most apt to be feeding within 30 yards of the ground on cloudy mornings.

KEY TO THE SPECIES OF *Psalidoprocne* EXPECTED IN THE CONGO

1. Tail virtually square, or very slightly forked, its indentation not more than 6 mm.; plumage black, with dark gray sometimes on throat...*P. nitens*
   Tail always forked, to a depth of 15 mm. or very much more.....2
2. Crown and throat white, a blackish stripe through eye region....*P. albiceps*
   Crown dark brown to black, usually glossy.....3

[1] Stark and Sclater, 1901, The birds of South Africa, vol. 2, p. 280; Godfrey, 1947, Oologist's Rec., vol. 21, pp. 12–15.

3. Under wing-coverts white.....4
   Under wing-coverts gray of varying depth.....6
4. Head and body always dark brown, with weak bronze gloss.....*P. petiti*
   Head and body black in adults, with greenish gloss.....5
5. Slightly larger, wing of males 106–110 mm., of females around 104 mm.; black body plumage less glossed with green.....*P. orientalis*
   Smaller, wing of males 97–104 mm., of females around 97 mm.; body plumage more glossed with green.....*P. mangbettorum*
6. Body color brownish black with little gloss, throat usually grayish white; fork of tail not very deep, and outer rectrices not attenuate....*P. albiceps*
   Body color more blackish when adult, throat black.....7
7. Wing of males usually more than 106 mm. and of females more than 102 mm. long; under wing-coverts dark gray.....*P. holomelaena*
   Wing of males usually under 106 mm., of females under 98 mm.; under wing-coverts lighter gray.....8
8. Black body color heavily glossed with oily green; tail of males 85–94 mm., with outermost rectrices attenuate toward tips, tail of females 65–66 mm.....*P. chalybea*
   Body plumage weaker, more bluish green; tail of males 70–78 mm., of females 60–62 mm., outermost rectrices much less attenuate.....*P. orientalis*

Psalidoprocne nitens nitens (Cassin)

Atticora nitens CASSIN, 1857, Proc. Acad. Nat. Sci. Philadelphia, vol. 9, p. 38 (type locality: Muni R., West Africa).

Psalidoprocne nitens SHARPE, 1885, Catalogue of the birds in the British Museum, vol. 10, p. 204 (Landana).

Psalidoprocne nitens nitens SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 587. BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 295, fig. 58 (Ganda Sundi).

Woltersia nitens nitens VON BOETTICHER, 1943, Zool. Anz., vol. 143, pp. 208, 209, map.

DISTRIBUTION OF THE SPECIES: Forested lowlands of Upper and Lower Guinea, from Sierra Leone to the Semliki Valley. The nominate race, with throat always dull gray-brown, ranges up to 4000 feet in Sierra Leone and extends thence to forested Cameroon and the Belgian Mayombe. In the eastern Congo lives *P. n. centralis*, with throat glossy black in adults.

Although *P. n. nitens* is known from the Gaboon and Landana, the only exact locality for it in the Lower Congo is at Ganda Sundi. On April 20, 1931, I found a dozen of them, young and adults which had finished breeding, on the slope of a hill cleared of forest. They were alighting on the bare branches of a large tree.

No doubt this square-tailed swallow will be found elsewhere in

the Mayombe Forest. In the southern Cameroon Bates[1] found it nesting in January and in July, in tunnels a foot and a half long dug either in banks near streams or in the sides of pitfalls dug for game. Its two white eggs, measuring 19 by 13 mm., were laid in a nest made of beard lichen (*Usnea*).

Psalidoprocne nitens centralis Neumann

Psalidoprocne nitens centralis NEUMANN, 1904, Ornith. Monatsber., p. 144 (type locality: Kitima Station on the Ituri R., eastern Congo). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 829; 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 298 (Lenda R.). SCHOUTEDEN, 1918, Rev. Zool. Bot. Africaines, vol. 5, p. 255 (Lesse); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 125 (Panga; Bondo Mabe). BEQUAERT, 1922, Bull. Amer. Mus. Nat. Hist., vol. 45, p. 309. CHAPIN, 1923, Amer. Mus. Novitates, no. 56, p. 4. SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 587. STONE, 1936, Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 564 (Saidi; Ekibondo).

Psalidoprocne nitens FLOWER, 1894, Proc. Zool. Soc. London, pp. 600, 601, 606 (Ipoto; Kinnene). HARTERT, 1900, Novitates Zool., vol. 7, p. 36 (Kitima). REICHENOW, 1903, Die Vögel Afrikas, vol. 2, p. 426. OGILVIE-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 410 (40 miles northwest of Fort Beni). GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 230 (Kartushi).

Woltersia nitens centralis VON BOETTICHER, 1943, Zool. Anz., vol. 143, pp. 208, 209, map.

SPECIMENS: Batama, male, September 17; immature male, September 18. Avakubi, male, August 10. Ngayu, female, December 25. Bafwabaka, three males, two females, July 22, 23. Medje, male, September 1; immature female, September 1. Nala, male, July 3.

ADULTS OF BOTH SEXES: Iris dark brown; bill black; feet brown.

DISTRIBUTION: Forested area of the northeastern Congo, eastward to the Semliki Valley, but not yet known from west of Angu on the Uelle River or Stanleyville on the Congo.

During our long marches through the forest from Stanleyville to Avakubi in 1909, these small black swallows flitting back and forth across the road ahead, at spots where clearing was evident, were often the first intimation that we were approaching a village. Then the broad leaves of plantains would come into view and finally the welcome leaf-thatched huts.

Today that road is greatly widened and used by motor cars and

[1] 1909, Ibis, p. 28.

trucks, the swallows are even more numerous, and the fork-tailed *P. chalybea* is seen there as well. In 1937 at Ayena, a clearing southward of Bafwaboli, a number of the square-tailed species came flying very low over the stumps and dead boughs on a hill-top, so low in fact that a house cat lay in wait for them and not infrequently caught one by springing into the air.

Between Irumu and Beni and in the forested middle section of the Semliki Valley, *P. n. centralis* was seen commonly, but there *P. chalybea* seemed lacking. To the northward the square-tailed swallow was common in the vicinity of Medje and there associated with another fork-tailed species, *P. mangbettorum*. We did not notice *P. n. centralis* north of Kongoli's village near Rungu. The two rough-winged swallows fed in the same places, with rather wavering flight, over villages and plantations, or sometimes within a few feet of the ground. Both species rested occasionally on dead trees, less often on living ones, and in the Ituri forest *P. nitens centralis* was always more numerous than the fork-tailed kinds.

In the Ituri it was evident from dissections that breeding was in progress in July, August, and September, but I failed to find a nest. The most likely places for their tunnels are the pits dug to obtain clay for building the walls of houses and nowadays the banks cut at roadsides.

The food of six examples of *P. n. centralis* was found in every case to include tiny wood-boring beetles of the family Bostrichidae, which sometimes filled their stomachs. Only in three cases were there other insects as well, winged ants and one small fly. The fallen trees in a forest clearing thus furnish a bountiful fare.

Psalidoprocne petiti Sharpe and Bouvier

Psalidoprocne petiti SHARPE AND BOUVIER, 1876, Bull. Soc. Zool. France, vol. 1, p. 38, pl. 2 (type locality: Landana, Portuguese Congo). SHARPE, 1885, Catalogue of the birds in the British Museum, vol. 10, p. 204. REICHENOW, 1887, Jour. Ornith., p. 300 (Manyanga); 1903, Die Vögel Afrikas, vol. 2, p. 428 (Ngombe on lower Congo R.). SHARPE AND WYATT, 1888, A monograph of the Hirundinidae, vol. 2, pp. 617, 626, pl. 119. DUBOIS, 1905, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 1, p. 33 (Lower Congo). LÖNNBERG, 1907, Arkiv Zool., vol. 3, no. 21, p. 11 (Mukimbungu). SCHOUTEDEN, 1924, Rev. Zool. Bot. Africaines, vol. 12, p. 272 (Kidada).

Psalidoprocne petiti petiti GROTE, 1924, Jour. Ornith., p. 517 (Nola–Mbaiki). VON BOETTICHER, 1943, Zool. Anz., vol. 143, p. 206, map.

DISTRIBUTION: From the lower Congo River and Stanley Pool northward through the Gaboon and Cameroon to the Genderu Mountains. The species may be recognized by the distinctly brownish cast of its silky blackish plumage and the soiled whitish under wing-coverts. The tails of males measure 70–82 mm., with depth of fork 25–35 mm. The plate accompanying the original description is unsatisfactory, for the coloration is too black.

There has been some confusion between *petiti* and *reichenowi* in the Lower Congo, the latter bird being green-black, with under wing-coverts of much the same whitish color. I do not feel that *reichenowi* can be made a race of *P. petiti*, since the two type localities are virtually the same. Thus the records of *petiti* from the Lower Congo may seem questionable, but Malbrant has sent us an undoubted male of *petiti* from Brazzaville, and at Boma and Leopoldville I have many times observed swallows flying over which may well have belonged to this species.

Psalidoprocne petiti is best known in the Cameroon, where it ascends even to 5500 feet above Kumbo. Bates described a low "weeping" note heard as one flew close by him, and at Bitye in the lowlands a nest was brought to him together with the sitting female. It was made of *Usnea* lichen, placed in a hole in the side of a pitfall, and contained two white eggs, 20–21 by 13 mm.

Psalidoprocne orientalis reichenowi Neumann

Psalidoprocne orientalis reichenowi NEUMANN, 1904, Ornith. Monatsber., p. 144 (type locality: Chinchoxo, Portuguese Congo). REICHENOW, 1905, Die Vögel Afrikas, vol. 3, p. 829. SCHOUTEDEN, 1930, Rev. Zool. Bot. Africaines, vol. 18, p. 287 (Elisabethville). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 299.

? *Psalidoprocne pallidigula* SALVADORI, 1907, Boll. Mus. Zool. Anat. Comp. Torino, vol. 22, no. 570, p. 4 (type locality: Lukonzolwa, west of L. Moero).

Psalidoprocne sp. MOURITZ, 1914, Ibis, p. 36 (Tshinshenda R.; Katala's kraal–Sakania; Mokambo Hills; Musoshi Escarpment; Musoshi R.). SCHOUTEDEN; 1923, Rev. Zool. Bot. Africaines, vol. 11, pp. 342, 399 (Ngombe in Kasai, Kwamouth).

Psalidoprocne petiti BERLIOZ, 1925, Bull. Mus. Hist. Nat., Paris, vol. 31, p. 351 (Luluabourg).

Psalidoprocne petiti reichenowi SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 588. LYNES, 1938, Rev. Zool. Bot. Africaines, vol. 31, p. 96 (Idiofa; Luluabourg; Kilembe; Dundu). WHITE, 1946, Ibis, p. 99 (Mwinilunga; Kasempa).

Psalidoprocne orientalis SCHOUTEDEN, 1938, Bull. Cercle Zool. Congolais, vol. 15, p. 87 (Lower Congo).

Psalidoprocne petiti subsp. A. W. VINCENT, 1949, Ibis, p. 116 (Elisabethville).

DISTRIBUTION OF THE SPECIES: From Beira, Portuguese East Africa, north near the East Coast to Usambara, and westward to Northern Rhodesia, the Benguella Plateau of Angola, the Kasai District, and Loango Coast.

The eastern race, *P. o. orientalis* Reichenow, has a very long tail (82–95 mm. in males), with deep fork (39–52 mm.), and pure white under wing-coverts. It ranges from Tanganyika Territory to Nyasaland and Mozambique. The more western representative, *P. o. reichenowi*, has a much shorter tail (72–78 mm. in males, with fork 21–27 mm. deep) and under wing-coverts a little more grayish. From Northern Rhodesia and the Katanga it extends westward to the Kasai District, Angola, and the Enclave of Cabinda. I believe that *pallidigula* Salvadori and *kösteri* Neumann are both synonyms of *reichenowi*.

At Elisabethville and Kansenia, de Witte and Schouteden collected specimens of *Psalidoprocne o. reichenowi*, so I conclude that the nominate form does not reach the Katanga. So far as I can learn, the behavior of this saw-winged swallow does not differ from that of *P. petiti* and *P. chalybea*, although it lives in the more open southern districts of the Congo. In the Upper Katanga Alfred Vincent found a nest on May 14 at the end of a tunnel a little over two feet long in a high earthen bank. It was made of dry grass with a lining of feathery *Usnea* lichen. The two white eggs were almost ready to hatch.

Psalidoprocne chalybea Reichenow

Psalidoprocne chalybea REICHENOW, 1892, Jour. Ornith., p. 442 (type locality: Victoria, Cameroon). CHAPIN, 1923, Amer. Mus. Novitates, no. 56, pp. 4, 5, 6, fig. 4, map (Yakoma). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 587 (Uelle District; "Kivu district and country west of L. Tanganyika"). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 125 (Panga). BANNERMAN, 1939, The birds of tropical West Africa, vol. 5, p. 290, fig 56 (Kaga Djirri near Tomi R.; Molegbwe; lower Aruwimi R.; Stanleyville). VON BOETTICHER, 1943, Zool. Anz., vol. 143, p. 206, map.

Psalidoprocne bamingui BANNERMAN, 1920, Rev. Zool. Bot. Africaines, vol. 7, p. 291 (Avakubi).

Psalidoprocne obscura SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 125 (Panga).

SPECIMENS: Stanleyville, male, August 16. Avakubi, six males, May 20, August 3, 11, September 3; three females, August 10, September 3; immature male, September 3; immature female, August 11.

ADULTS OF BOTH SEXES: Iris dark brown; bill black; feet blackish, sometimes tinged with blue on metatarsi.

DISTRIBUTION: From the base of Mt. Cameroon to the Bamingui River, Duma and Yakoma on the Ubangi, thence to the Ituri forest around Avakubi. It is rather perplexing that this swallow should inhabit savannas in the Ubangi-Shari and forest clearings in the northeastern Congo. I have never been able to confirm Sclater's extension of the range to the Kivu District.

Specimens from the Ituri have been compared with the types of *chalybea* and *bamingui* and with other examples from Yakoma, Molegbwe, and Duma. Save for slight differences in tail length and the exact color of under wing-coverts, all are closely similar and seem to represent the same form. In our series of *chalybea* the adult males have wings 93–100 mm., tails 85–94 mm. with fork 38–54 mm. deep. Females have wings 88–91 mm., tails 65–66 mm. with fork 21-25 mm.

The male from Stanleyville in August was going to roost at dusk, with one or two of its kind, in high grass near the river bank. More were seen at that locality in June, 1937. None was ever seen along the eastern edge of the Ituri forest near Irumu or Beni. Nor was *P. chalybea* ever identified at Medje. Brother Joseph Hutsebaut tells me that he collected *chalybea* at Buta and *mangbettorum* at Titule, only 60 miles to the northeast. Whether or not the ranges of these two birds ever overlap remains to be learned.

All about Avakubi this saw-winged swallow is common in clearings, and at that station it often associates with *P. nitens centralis*. Its buoyant but undulating flight is not very swift, and much of its feeding is done within 10 yards of the ground. Yet it never alights on the bare ground and only occasionally is seen perching on dry twigs. Usually a very silent bird, *P. chalybea* does utter a pleasant, mellow note when two or three are flying together as though courting. It might be written "hu-ĭ," or at other times "hiŭ," and is audible only to 8 or 10 yards.

Some of our specimens were found ready for reproduction in May, August, and September; nesting may continue through the

whole year in the Ituri. From the frequency with which they circled near banks of clay, especially about pits where material had been excavated for building mud walls, I felt sure they must nest in tunnels there, but all search was fruitless.

In six stomachs of *Psalidoprocne chalybea* I found only tiny bostrichid beetles like those eaten by *P. nitens.* These beetles breed no doubt in roofs and woodwork of houses, as well as in dead trees.

Psalidoprocne mangbettorum Chapin

Psalidoprocne mangbettorum CHAPIN, 1923, Amer. Mus. Novitates, no. 56, pp. 4, 6, 7, fig. 4, map (type locality: Medje, northern Ituri District, Belgian Congo). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 589 (Upper Uelle District; highlands west of L. Albert). SCHOUTEDEN, 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 125 (Faradje; Abimva); 1939, Bull. Cercle Zool. Congolais, vol. 16, p. 36. VON BOETTICHER, 1943, Zool. Anz., vol. 143, p. 206, map.

Psalidoprocne orientalis oleaginea MACDONALD AND CAVE, 1948, Ibis, p. 249 (Aloma Plateau near Yei).

SPECIMENS: Medje, two males, March 20, May 7; immature male, August 24. Niangara, male, December 16. Nzoro, male, April 17. Faradje, male, February 26; two immature males, August 19, October 14.

ADULT MALE: Iris dark brown, bill and feet black.

DISTRIBUTION: From the Lower Uelle District near Titule eastward to Medje, Niangara, and Garamba on the Congo-Nile divide; also to the plateau west of Lake Albert. This bird is so like *P. chalybea* in form that one might well regard the two as races of a single species, *mangbettorum* differing mainly by its white under wing-coverts. Field studies in the region between Avakubi and the Uelle District should soon give the answer.

Five adult males in the series listed above have wings 97–100.5 mm. long, tails 85–92.5 mm. with depth of fork 41–47 mm. Five males subsequently collected at Djugu on the Lendu Plateau have wings 101–104 mm., tails 79–84 mm. with depth of fork 34–37 mm. A single female from Djugu has the wing 97 mm., tail 66 mm., with depth of fork 23 mm.

Though found in forest clearings near Medje, the Mangbetu saw-wing is largely a bird of savanna country, not very numerous; and yet near Faradje half a dozen might occasionally be seen in one day. These swallows were particularly fond of the neighborhood of patches of woodland or of large trees in rather open

swampy spots, and on such trees they sometimes perched. The breeding season in the Upper Uelle extended from February to July, at least. One bird was sometimes seen pursuing a companion with a very peculiar mode of flight, the wings moving stiffly and kept mostly below the horizontal plane of the body. This I took to be a method of courtship. As a rule the white under wing-coverts are readily visible.

The birds from around Djugu, at 5400 feet on the Lendu Plateau, appear to have slightly longer wings and shorter tails than those of the Uelle. They were numerous near patches of mountain forest and twice were seen to fly from small holes in steep banks of clay beside roads. Below one of these holes hung a few shreds of *Usnea*, evidently brought as material for a nest. Both in 1926 and 1937 these swallows were breeding there in mid-August. On the wooded highlands farther south the same ecological niche is occupied by *Psalidoprocne holomelaena*.

Psalidoprocne holomelaena ruwenzori Chapin

Psalidoprocne holomelaena ruwenzori CHAPIN, 1932, Amer. Mus. Novitates, no. 570, p. 13 (type locality: Kalongi, 6900 ft., west slope of Ruwenzori; also irom east of Rutshuru Valley and base of Mt. Mikeno). JACKSON, 1938, The birds of Kenya Colony and ... Uganda, vol. 3, p. 1161. VERHEYEN, 1947, Exploration du Parc National Albert, Mission Frechkop, fasc. 2, p. 76 (Kanyabisika near Lutunguru).

Psalidoprocne massaica OGILVIE-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 409 (Mubuku Valley, 6000 ft.).

Psalidoprocne holomelaena REICHENOW, 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 298 ("Knidyri"=Kwidjwi I.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 242 (northwest of L. Tanganyika, 2000 m.). SCHOUTEDEN, 1918, Rev. Zool. Bot. Africaines, vol. 5, p. 255 (Mutiba; Bobandana).

Psalidoprocne holomelas massaica GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 230 (Ngoma).

Psalidoprocne holomelaena massaica SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 587 (in part. Ruwenzori). FRIEDMANN, 1937, Bull. U. S. Natl. Mus., no. 153, pt. 2, p. 55 (in part. Ruwenzori–Urundi). PETERS AND LOVERIDGE, 1942, Bull. Mus. Comp. Zool., vol. 89, p. 244 (Mihunga on east Ruwenzori).

Psalidoprocne holomelaena massaica SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 21, p. 309 (Lulenga).

Psalidroprocne holomelaena ruwenzorii SCHOUTEDEN, 1932, Rev. Zool. Bot. Africaines, vol. 22, p. 256 (Kivu).

Psalidoprocne holomelaena ruwenzorii SCHOUTEDEN, 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 124 (Burunga in Mokoto,

2000 m.; Nzulu); 1942, Rev. Zool. Bot. Africaines, vol. 36, p. 339 (forest west of Astrida).

DISTRIBUTION OF THE SPECIES: Cape Province north to the highlands near Mt. Kenya, Elgon, and Ruwenzori. There appear to be three races: *P. h. holomelaena* (Sundevall) in South Africa north to Southern Rhodesia, *P. h. massaica* Neumann in East Africa, and *P. h. ruwenzori* in the highlands of the eastern Congo and western Uganda.

The wings of *ruwenzori* average slightly shorter than those of *massaica*, and its tail is shorter with less pronounced fork. Males of *ruwenzori* have wings 107–114 mm., tails 73–85 mm., with depth of fork 28–34.5 mm. Females have wings 102–105 mm., tails 66–74 mm., with depth of fork about 20–25 mm.

It is along the lower edges of mountain forests, at levels from 4200 feet at the west base of Ruwenzori up to 7700 feet on various highlands, that one encounters this wholly black saw-wing with dark gray under wing-coverts. Parties of as many as 10 are not uncommon; in their erratic flight and occasional perching on bare, thin branches they resemble the others of their genus. We saw them on the west slope of Ruwenzori, on the highland west of Lake Edward near Alimbongo and Mohanga, over a patch of bracken in woods near the upper Mai-na-Ivi, and from the shores of Lake Kivu to Kikere meadow at the base of Mikeno. Though collected by Grauer near 6000 feet to the northwest of Baraka, the species is not known from Marungu. Never is it found on the alpine meadows above 11,000 feet.

A nest found on February 8 at 6500 feet on west Ruwenzori was tunneled in the steeply sloping ground of a newly planted bean patch in a native farm. One of the birds was watched entering and leaving. In East Africa the eggs of *P. h. massaica* are two per set, white, measuring 18–20 by 13–14 mm. They are laid on a pad of *Usnea* lichen. A very detailed study of behavior at the nest is that by Moreau.[1]

Psalidoprocne albiceps P. L. Sclater

Psalidoprocne albiceps P. L. SCLATER, 1864, Proc. Zool. Soc. London, p. 108, pl. 14 (type locality: Uzinza, Tabora district, Tanganyika Territory). HARTLAUB, 1891, Abhandl. Naturwiss. Ver. Bremen, vol. 12, p. 31 (Buguera). SHELLEY, 1901, Ibis, pp. 166, 172 (Karungwesi R.). REICHENOW, 1903, Die Vögel

[1] 1940, Ibis, pp. 234–248.

Afrikas, vol. 2, p. 430 (Karevia); 1911, Wiss. Ergeb. Deutschen Zentral-Afrika Exped., vol. 3, p. 298 (Kwidjwi I.). OGILVIE-GRANT, 1910, Trans. Zool. Soc. London, vol. 19, p. 409 (Mokia, southeast of Ruwenzori, 3400 ft.). SASSI, 1916, Ann. Naturhist. Mus. Wien, vol. 30, p. 242 (Ruzizi Valley; Kasindi; Beni). SCHOUTEDEN, 1918, Rev. Zool. Bot. Africaines, vol. 5, p. 255 (Lesse; old Mission St. Gustave); 1936, Ann. Mus. Congo, zool., ser. 4, vol. 1, fasc. 2, p. 125 (Niarembe); 1938, Exploration du Parc National Albert, Mission de Witte, fasc. 9, p. 125 (Ruhengeri; Rutshuru). BERLIOZ, 1921, Rev. Française Ornith., vol. 13, p. 8 (region of L. Kivu). SCHUBOTZ, 1921, Die Tagebücher von Dr. Emin Pascha, vol. 6, pt. 2, p. 123. GYLDENSTOLPE, 1924, K. Svenska Vetensk. Akad. Handl., ser. 3, vol. 1, no. 3, p. 231 (Kitsumuro; Irumu). SCLATER, 1930, Systema avium Aethiopicarum, pt. 2, p. 589. JACKSON, 1938, The birds of Kenya Colony and... Uganda, vol. 3, p. 1161.

Psalidaprocne albiceps EMIN, 1922, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 3, p. 375 (Mswa).

Psalidoprogne albiceps EMIN, 1927, *in* Stuhlmann, Die Tagebücher von Dr. Emin Pascha, vol. 4, pp. 51, 53, 233 (Muganga and Kajándsa on L. Albert; Kavalli).

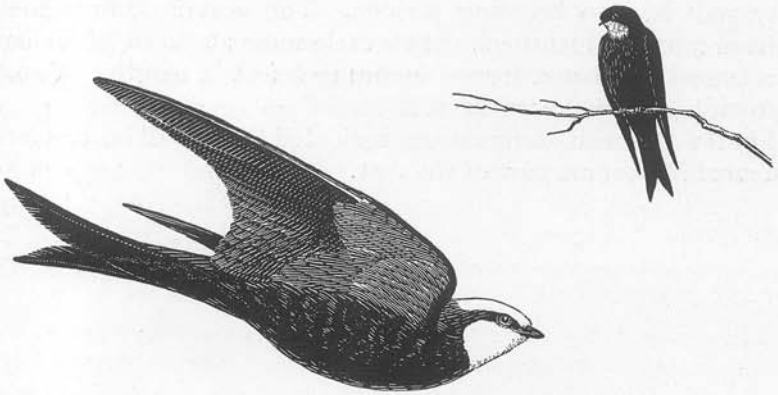

FIG. 36. White-headed saw-wing swallow, *Psalidoprocne albiceps*. Male in foreground, female in back.

DISTRIBUTION: From Redjaf on the Bahr-el-Jebel south through the East Congo grasslands and the interior of East Africa to Mzimba in Nyasaland. It inhabits open country from the low level of the Bahr-el-Jebel and Lake Albert up to 5200 feet on the Lendu Plateau and to 6000 feet in Ruanda. Known since Livingstone's time in the district southeast of Lake Moero, it has not yet been reported from the Upper Katanga, Marungu, or the western shore of Lake Tanganyika. In northern Nyasaland

Benson has found this swallow from 4300 feet up to 7800 feet, but only between October and June.

At Djugu I have known it to associate with *P. mangbettorum*, on the base of Ruwenzori with *P. holomelaena ruwenzori*. One pair of *P. albiceps* was noted at 7500 feet on Mt. Musandama. In the vicinity of Irumu and in the middle Semliki Valley *albiceps* even reaches some of the clearings in heavy lowland forest. In the grasslands the white-headed saw-wing is plainly attached to strips or groups of large trees. During the period of courtship the dark-crowned female with whitish throat is commonly seen being followed persistently by her white-headed mate. Birds in juvenal plumage have heads wholly blackish. When feeding actively, as many as 40 birds sometimes gather in one spot.

The breeding season at Entebbe, Uganda, is said to be in May and June, possibly also in October. Near Bogoro August and September seemed likely months, while closer to Lake Edward there may well be two breeding periods. The nest is known to be built of grass and feathers, with a little moss at times, at the end of a tunnel in a bank, from 7 inches to 2 feet in length. Two to four white eggs make up the set.

My few stomach examinations indicated that small beetles form the most important part of the diet.

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The main references are in heavy-faced type.