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Systematic Notes on Palearctic Birds. No. 6 Timaliinae and Paradoxornithinae

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The following notes are observations made during the revision of the Palearctic forms of these two subfamilies. The Timaliinae are not usually considered to be one of the characteristic elements of the Palearctic avifauna, but a surprisingly large number of forms occur only on the southern borders of the Palearctic region from Morocco to Iran or are restricted to the highlands of western China or invade to a greater or lesser extent the Palearctic regions of Asia. Hartert in "Die Vögel der paläarktischen Fauna" and its supplements included 42 species, a few of which were shown later to be conspecific with others. I include 31 species in a check list of the Palearctic region now in preparation. The division of this vast subfamily into Palearctic and oriental forms will always remain more or less arbitrary, but it cannot be said that the Timaliinae are not well represented in the Palearctic region.

The Paradoxornithinae are a true Palearctic element. The genera *Panurus* and *Conostoma* are Palearctic, and 11 of the 16 species in *Paradoxornis* are restricted to or very well distributed in the Palearctic region. Delacour, in his revision of the genera of the Timaliinae (1946, L'Oiseau, pp. 7-36), merged the Paradoxornithinae with the Timaliinae, placing them in the tribe Chamaeini along with *Chamaea* of western North America and *Chrysomma* (includes *Moupinia*), but *Panurus*, *Conostoma*, and *Paradoxornis* seem better retained as a separate subfamily, while *Chrysomma* in my opinion is very close in its affinities to *Timalia*.

I would like to express my gratitude to Dr. H. Friedmann of the United States National Museum and Mr. J. C. Greenway of the Museum of Comparative Zoölogy and to my colleagues Drs. E. Mayr, D. Amadon, and J. T. Zimmer for friendly assistance and suggestions.

TIMALIINAE

POMATORHINUS ERYTHROCNEMIS

This species is often called *P. maclellandi*, but *maclellandi* Godwin-Austen, 1873, is now generally considered to be conspecific with nominate *erythrocnemis* Gould, 1863.

Deignan (1952, Proc. Biol. Soc. Washington, vol. 65, pp. 119-126) contends that *P. erythrogenys* and *P. erythrocnemis* are allopatric and conspecific. The two forms may or may not overlap, but the sharp differences in pattern between the two and the fact that intergrading populations are unknown suggest that it is more constructive to regard them as separate species. Concerning the possibility of overlap, Deignan is probably correct when he states that no assumption of sympatry is to be derived from Ticehurst's statement (1935, Ibis, p. 47) that the two forms are probably sympatric in northeastern Burma, *P. erythrogenys imberbis* occurring at Bernardmyo and *P. erythrocnemis odicus* at Bhamo, about 100 miles to the north. Farther south, however, *odicus* is found in the eastern Southern Shan States (Kengtung State) but a little to the west is replaced by *imberbis* at Kalaw and Taunggyi, and this last form occurs also in northern Siam, even closer to Kengtung State.

In the 1952 paper, Deignan described four new races of *erythrocnemis* (described as races of *erythrogenys* according to this author's thesis). I have examined the same material and two of these races are sufficiently (*decarlei*, northern Yunnan) to well (*covensae*, lowlands of Szechwan) characterized, but the others (*stoneae* and *sowerbyi*) are not valid in my opinion. I fail to distinguish any constant difference whatever between the specimens from northwesternmost Yunnan described as *stoneae* and specimens of *dedekensi* Oustalet from central Sikang. *P. e. sowerbyi* is based on a single specimen from northern Shensi and a color drawing of another and is separated from *gravivox* David (the type locality is just "Shensi," not southern Shensi as quoted by Deignan). I found that the type of *sowerbyi* differs only by being very slightly paler than a specimen from southern Kansu identified as "true *gravivox*" by Deignan, but the difference is scarcely appreciable and not of taxonomic importance, and *sowerbyi* is not admissible, I believe, until adequate material from various parts of Shensi and southern Kansu can be compared.

PNOEPYGA PUSILLA

Eight populations have been separated nomenclaturally from the populations of the Himalayas (nominate *pusilla*) on the basis of variations in the spotting, barring, and the more or less pronounced rufous coloration. Examination of specimens from all parts of the range from where popula-

tions have been described with the exception of Manipur shows that, with the exception of the population of Timor (*timorensis*), which is distinctly paler and duller and has the scaly pattern very much reduced, none of the characters of the other populations is constant and that all extremes are found in the populations of the Himalayas. A revision based on large series (for individual variation is high) of freshly collected and correctly sexed specimens would probably result in the suppression of most of the described forms.

Among the probable synonyms of nominate *pusilla* the following may be mentioned: *annamensis* Robinson and Kloss, 1919, southern Annam; *tonkinensis* Delacour and Jabouille, 1930, northern Tonkin; and *pygmaea* Koelz, 1952 (Jour. Zool. Soc. India, vol. 4, p. 40), Manipur. Topotypes examined of *annamensis* and *tonkinensis* are identical and differ only very slightly by tending to be more heavily squamated than nominate *pusilla*, but the difference is not constant and not of subspecific importance. For a similar opinion, see Yen (1933, L'Oiseau, p. 787). Specimens from Manipur are not available but, judging by the described characters of *pygmaea* and the prevailing geographical variation of the species, *pygmaea* does not seem sufficiently distinct to warrant recognition.

SPELAEORNIS

The species of this genus are elusive and very little known, since a number of forms are known only from a single or two or three specimens. It is therefore difficult to decide whether or not *S. rocki* Riley, 1929, Hofuping, northern Yunnan, is or is not conspecific with *trogodytoides* Verreaux, 1871, "mountains of Chinese Tibet." According to Mayr (1941, Ibis, p. 216), who has examined the type of *rocki* and two other specimens, it is a very distinct form, "a much paler bird [than *souliei*] with the crown less blackish and with the white of the throat extended farther down to the chest; wings and tail are less heavily barred with black." Mayr, however, considers that *rocki* and *souliei* (now conceded to be conspecific with *trogodytoides*) are conspecific. The type localities of *rocki* and *souliei* (Tzeku, northern Yunnan) are only about 50 to 60 miles apart in the Mekong Valley. Greenway (1933, Bull. Mus. Comp. Zool., vol. 74, p. 121) considers that they are separate species. Future data may confirm this opinion, but the type of *rocki*, taken in November, may not have been on its breeding grounds. Present evidence shows, however, that the breeding range of *rocki* and that of *souliei* do not overlap and are separated by the Mekong. Apparently *rocki* breeds only in the highlands to the east and *souliei* in those to the west.

CHRYSOMMA POECILOTIS

Chrysomma poecilotis sordidior Rothschild, 1921, Likiang Range, described as being grayer and less rufous than "*poecilotis*," is based on a comparison of fresh with foxed skins, and Bangs, quoted by Riley (1926, Proc. U. S. Natl. Mus., vol. 70, art. 5, p. 29), found that specimens from Tatsienlu [= Kangting], eastern Sikang, and the Likiang Range could be matched. Specimens examined from western and northern Szechwan are, however, a little whiter on the throat than specimens from the Likiang Range, as stated by Riley, but the difference is slight, and these populations from Szechwan should be compared with those of eastern Sikang, the region where the specimens on which Verreaux based *poecilotis* probably came from.

TURDOIDES FULVUS

Meinertzhagen (1939, Bull. Brit. Ornith. Club, vol. 59, p. 69, Ksar es Souk) has separated as *billypayni* the population of southeastern Morocco from that of southwestern Morocco (*maroccanus* Lynes, 1925, Taroudant) on the basis of two specimens which, apparently, are intermediate in coloration between the darker *maroccanus* and the paler nominate *fulvus* of Algeria and Tunisia. It must be remarked that the difference between nominate *fulvus* and *maroccanus*, which is clear only in specimens in very fresh plumage, is slight, and that under the circumstances it seems difficult to admit without confirmation an intermediate race on the basis of only two specimens. One specimen in worn plumage that I have examined from southeastern Morocco, although identified as *maroccanus* by Hartert, is indistinguishable from specimens of nominate *fulvus* in similar plumage from southern Algeria and Tunisia.

BABAX

In *Babax*, two forms rare in collections, *B. waddelli* (nominate *waddelli* Dresser, 1905) and *B. koslowi* Bianchi, 1906, are almost always treated as conspecific with *B. lanceolatus* (nominate *lanceolatus* Verreaux, 1871). This is not correct. *B. lanceolatus bonvaloti* and *B. koslowi* almost certainly overlap in central Sikang at about longitudes 97° and 98° E., at latitude 30° N. Furthermore, *B. koslowi* apparently differs very sharply in pattern from *B. waddelli* and *B. lanceolatus*. These two forms are sharply and conspicuously streaked, but *B. koslowi* (not examined) is said to have a "very uniform" plumage with the streaks obsolete, or virtually so. The difference between *B. waddelli* and *B. lanceolatus* is equally sharp. The former is very much larger, almost twice as large,

and its streaks are not lanceolate in shape as they conspicuously are in *B. lanceolatus*.

GARRULAX

In *Garrulax perspicillatus* the population of central China is occasionally separated as *shensiensis* Riley, 1911, Shensi, from the other populations of China on the basis of being paler and of having a shorter bill, but my examination confirms Berlioz (1930, L'Oiseau, p. 153) in the opinion that there is no evidence of constant geographical variation in this species. No other proposed "races" of this species have been accepted. Length of bill in 10 adults measured by me: from Shensi, 27-31 (28.8); from Fukien, to which the type locality of *perspicillatus* has been restricted, 27-31 (29.0).

In *Garrulax albogularis* the geographical variation in the continental populations is relatively slight. In the Himalayas eastward to Bhutan a cline of increasing pigmentation and decreasing size runs from west to east, and it is sufficient to recognize the two extremes, *whistleri* in the west and nominate *albogularis* in the east. The populations of China and of northern Tonkin are not continuous with the populations of the Himalayas. They are large and show a wider and darker band of fulvous on the fore crown. They have been separated by Riley as *eous* (1930, June, Proc. Biol. Soc. Washington, vol. 43, p. 79, northern Yunnan) and *laetus* (1930, July, *ibid.*, vol. 43, p. 134, western Szechwan). I have examined all of the material used by Riley together with additional material. In coloration, the populations of Yunnan average palest, those of Sikang and Szechwan darkest, and those of Tonkin about intermediate, but the over-all range of variation is slight and it is sufficient to recognize but one race. The variations in size appear to be correlated with altitudinal variations. For instance in southwestern Szechwan the wing length in nine specimens taken between 3000 and 6000 feet is 127-138 (131), but in northern Yunnan in six specimens taken at 9800 feet it is 130-142 (136), and in three specimens taken at about 11000 feet in northwestern Szechwan it is 135-142 (140).

In a review of *Garrulax davidi*, Meise (1937, Jour. Ornith., vol. 85, p. 540) divides this species into five slightly differentiated races. The material that I have examined is limited but suggests that only three forms are sufficiently distinct: nominate *davidi*, *experrectus*, and *concolor*. Nominate *davidi* is browner, less gray, on the throat and breast than *experrectus*, and *concolor* has a shorter bill than the other two.

The two forms, which do not appear sufficiently distinct or constant enough and are synonymous with nominate *davidi*, are *funnebris* Stres-

mann, 1927, south Tatung Range, eastern Tsinghai, and *chinganicus* Meise, 1934, Great Khingan, Manchuria. Meise (1937) recognized *funnebris* chiefly on the basis of larger size, giving the wing length of seven adults of nominate *davidi* as 87–90 (87.9) as against 90–97 (94.1) in 11 *funnebris*. However, in specimens that I have measured, the wing length is 88–91 (89.5) in five nominate *davidi* and 88, 95, 95 in *funnebris*. Meise states that *funnebris* is “somewhat grayer,” but of the three specimens examined, two, including a topotype, are identical with typical nominate *davidi* from Hopeh, and the third, a May specimen taken near Koko Nor, is paler and grayer below and identical with *experrectus*.

I have not examined specimens from Manchuria, but I do not believe that *chinganicus*, an intermediate form (said by Meise to be “somewhat” browner than *experrectus* but grayer than nominate *davidi*), known so far from only three specimens, should be recognized until adequate material becomes available. The range of variation is too slight in this species to admit such an intermediate. Meise in the original description of *chinganicus* said that it was of the same size as *experrectus* and larger than nominate *davidi*, giving the wing length in *chinganicus* as 88.5, 91.5 (type), and 99. The specimens of *experrectus* measured by me have a wing of 91, 92, 92. One may conclude that size differences between nominate *davidi*, “*funnebris*,” “*chinganicus*,” and *experrectus*, if truly valid, appear to be very slight.

In *Garrulax cineraceus* the ranges of *styani* Oustalet, 1898, and *cinereiceps* Styan, 1887, given in the literature are much confused, probably because authors have failed to realize that *styani* is migratory and because they have always regarded Tatsienlu (now Kangting) as the type locality of *styani*. It is true that Oustalet (1898, Bull. Mus. Hist. Nat. Paris, vol. 4, p. 224) states that his specimens came from Tatsienlu and “Tsé-kou (Yun-nan)” and that on pages 253–255 of the same publication, where he discusses *styani* again, he considers that this form occurs at both localities, although the additional specimens that he mentions came only from Tzeku. However, as shown by Schäfer (1938, Jour. Ornith., vol. 86, Sonderh., p. 240), *cinereiceps* is the breeding race at Tatsienlu; *styani* also appears in this region but only as a migrant or visitor outside of the breeding season. In order to clear all ambiguity it seems desirable to restrict the type locality of *styani*, and I accordingly do so to Tzeku in northern Yunnan. This race and *cinereiceps* are unmistakable in adult plumage, *styani* having the crown black rather than grayish and the superciliary region and ear coverts buffy or olivaceous rather than chestnut.

Garrulax sannio has been recently reviewed by Deignan (1952, Pos-

tilla, no. 11, pp. 1-5), and I have examined an abundant amount of material in the light of this study. In his paper, Deignan describes two new races separated from nominate *sannio* (type locality, Fukien): *comis* from Sikang and northern Yunnan, and *oblectans* from the Yangtze Valley. The latter is clearly separable by its blackish brown rather than rufescent brown postocular stripe and its generally richer and more rufescent, less olivaceous, coloration, but it is wiser not to recognize *comis*, which should be treated as synonymous with nominate *sannio*. As stated by Deignan, the population of northwestern Yunnan, as well as the population of neighboring parts of Burma, has the white of the superciliary stripe less pure, more suffused with brownish, in the region above and behind the eye, than the population of Fukien. However, in the material examined this difference is slight and not very constant and does not appear to be of subspecific importance. Furthermore, it is not desirable to separate nomenclaturally (as *comis*) these populations from nominate *sannio*, for they are connected geographically to the population of Fukien, as recognized by Deignan, by all sorts of populations with intermediate characters in the Shan States, northern Indochina, and southeastern China. In the material that I have examined, the populations of western Szechwan and southern Kansu are again identical with topotypical nominate *sannio*.

In *Garrulax lineatus*, geographical variation is strongly marked. A very well-indicated cline of increasing pigmentation accompanied by a less sharply marked decrease in size runs from west to east, from Tadzhikistan, Afghanistan, and northern Baluchistan to Sikkim. I have not examined material east of Sikkim, but the population (*imbricatus*) of Bhutan and neighboring parts of southeastern Tibet, although usually treated as conspecific with *lineatus*, apparently differs in its pattern by being concolorous above and by having the sides of the head gray with white streaks. This form may possibly be a separate species or a race of *Garrulax virgatus* which has been treated by Meinertzhagen (1928, Ibis, p. 512) as being conspecific with *lineatus*.

The northwesternmost populations of *G. lineatus* are outstandingly pale and gray above, with only a slight tinge of rufous and olive below, and have been separated as *bilkevitchi* Zarudny, 1910, Kulyab, southern Tadzhikistan. The validity of this race has been questioned, but a good series examined by me from Badakhshan, across the Amu Darya from Kulyab, shows that this race is exceptionally well differentiated. On the other hand, the validity of *ziaratensis* Ticehurst, 1920, Ziarat, northern Baluchistan, appears to be very questionable. Ticehurst described this form as being very pale but did not compare it to *bilkevitchi*, the existence

of which he may have been unaware. The depth of saturation in this species is apparently closely related to the amount of rainfall. The populations of the more arid southern Tadzhikistan and Badakhshan which are north of the Hindu Kush are very pale, but south of this range, east of Kabul where precipitation is greater, the population becomes darker. I did not examine specimens from the region of Ziarat, but this region is more arid than the region east of Kabul, and, judging by the geographical variation prevailing in this species, I would expect the population of Ziarat to be paler and probably not separable from *bilkevitchi*. Although darker, the populations east of Kabul are not sufficiently well differentiated to warrant separation. It would be misleading to do so, for this species shows many instances of minor local variations in the degree of saturation.

Garrulax morrisonianus from Formosa has been treated as conspecific with *G. henrici* of southern Tibet and Sikang by Berlioz (1930, L'Oiseau, p. 88), and these two forms plus *G. affinis* of the eastern Himalayas, Sikang, and western China, have been treated by Delacour (1946, L'Oiseau, p. 28) as one superspecies. But, although the three are related and form a species group, they appear to be separate species. *G. henrici* and *G. affinis* are sharply differentiated from one another, and their ranges overlap in the Himalayas and Sikang (see Ludlow, 1944, Ibis, p. 76; 1951, Ibis, p. 555). *G. morrisonianus* is closer to *G. affinis* but has characters of its own and is probably reproductively isolated.

ALCIPPE

The Chinese populations of *Alcippe cinereiceps* require revision, for some of the findings of Bangs and Peters (1928, Bull. Mus. Comp. Zoöl., vol. 68, pp. 342-343), Greenway (1933, Bull. Mus. Comp. Zoöl., vol. 74, pp. 136-137), and Yen (1936, L'Oiseau, pp. 443-448) are mutually contradictory. A new revision must take into consideration several important factors hitherto neglected or largely so: the color of the primaries may not be a reliable character, for it varies with age and the plumage sequence has not been studied, individual variation is very great, specimens fade or fox quickly, and there is clear evidence that some populations are migratory.

The status of the populations of southern Kansu, Shensi, and northern and western Szechwan to eastern Sikang is least clear. The population of Kansu was separated as *fessa* by Bangs and Peters (1928) on the basis of being darker than nominate *cinereiceps* ("mountains of Chinese Tibet"). The type is from Muping [Paohing], eastern Sikang, according to Yen (1936). Yen (1936) states, however, that the populations of

Kansu and Shensi are paler than nominate *cinereiceps* and recognizes *fessa* on this basis. I have examined, unfortunately, only a single specimen from eastern Sikang, which was collected on April 16 and may have been on its breeding grounds. This specimen is quite pale and matches a series of four specimens from southern Shensi. A series of 18 specimens examined from western Szechwan taken at Kwanhsien and west of Wenchwan in November and December and which probably includes migrants is most variable. Some specimens are quite pale and match the specimen from Sikang and the specimens from Shensi, others are darker and silky ashy gray on the head back to the hind neck and correspond to the characters usually ascribed to nominate *cinereiceps*, and others are distinctly still darker, especially on the head, and correspond to the description of *fessa*. Until adequate series of freshly collected specimens taken on their breeding grounds are compared, it is perhaps best to treat all the populations from the range cited above as nominate *cinereiceps*. The status of *fucata* Styan (Hupeh), considered by some authors to be a separate species and by others a race of *cinereiceps*, requires also further study.

In *Alcippe ruficapilla*, the name *menghwaensis* Chong (1938, Sinensia, vol. 8, p. 381, Siaotsun, Menghwa, northern Yunnan) appears to be a synonym of *sordidior* Rippon (1903, Gyi Dzin Shan, near Tali, northern Yunnan). It is based on individual variants singled out from a series of *sordidior* taken at the same locality and on the same date, two specimens which Chong says are darker than the others. According to my maps, Siaotsun and Tali are in the same region, some 25 miles apart.

PARADOXORNITHINAE

PANURUS BIARMICUS

In *Panurus biarmicus* a cline of decreasing pigmentation runs eastward from western Europe to Russian Turkestan, with many intermediate populations, the populations of the Far East being darker than those of Turkestan but similar to those of southern Russia. Two slightly differentiated populations have been separated: *occidentalis* Tschusi, Venetia, from nominate *biarmicus*, and *turkestanicus* Zarudny and Bilkevitch, Russian Turkestan, from *russicus*, but examination shows that they are not sufficiently constant or sufficiently differentiated to warrant recognition.

In the case of *occidentalis*, populations examined from the Mediterranean (La Mancha, Valencia, Provence, Naples, and Greece), and from the Adriatic (Ravenna, and Venetia, including paratypes of *occidentalis*), are paler and brighter than populations from farther north in western

Europe (Holland, Germany, and England), but each of the southern populations differs very slightly from the others, and the average difference between these and the northern populations is too slight to warrant the recognition of *occidentalis* or the separation of the many other intermediate populations.

In *russicus*, specimens from Galizia and Hungary are very slightly darker than the population of the Dobruja in Bulgaria and Romania, which in turn is very slightly darker than the population of the lower Volga, the palest specimens examined being a large series from most parts of Russian Turkestan. This series contains, however, many specimens identical with those of the lower Volga, and *turkestanicus* cannot be admitted, nor should any other population be separated from *russicus*. Specimens examined in large numbers from southern Transcaspia, Iran, and the Far East are identical with the Russian specimens.

CONOSTOMA AEMODIUM

In this species two populations have been separated nomenclaturally from the populations of the Himalayas (*aemodium* Hodgson, 1841, Nepal) but, in my opinion, one of these forms is not valid (*graminicola* Deignan, 1950, Zoologica, vol. 35, p. 127, northwestern Yunnan), and the other (*bambuseti* Stresemann, 1923, Wa Shan, Szechwan [eastern Sikang]) is not sufficiently well differentiated or constant to warrant recognition.

Comparison of specimens from the Himalayas with the paratypes of *graminicola* and two cotypes of *bambuseti* as well as a series of 10 specimens from western Szechwan fails to show differences in coloration which cannot be accounted for by the state of the plumage or the age of the skins. Deignan's *graminicola* is based on specimens in extremely fresh plumage, all taken in October, some of them still showing traces of molt. As might be expected these specimens are pale, but specimens taken within the last few years in the Himalayas are just as pale. The extent of the ashy area on the crown varies individually and, on an average, is more reduced in birds from Sikang and Szechwan, but some specimens from these regions are identical with others from the Himalayas and Yunnan.

Specimens from the eastern part of the range (*bambuseti*) average smaller, but, as stated by Mayr (1941, Ibis, p. 706), the variation appears to be correlated with altitudinal variations, and the measurements overlap too much to warrant separation. Wing length in both sexes in the specimens examined: Himalayas, 120–131; northern Burma, 127–130; Yunnan, Likiang Range, 128; northwestern Yunnan (paratypes of *graminicola*), 126–137; eastern Sikang (cotypes of *bambuseti*), 121, 130; west-

ern Szechwan, 118–129. I also cannot see any constant differences in the shape and size of the bill.

PARADOXORNIS

Paradoxornis paradoxa is monotypic, but the population of the Tsing Ling Range in Shensi may eventually be found to be a distinct form. A lone specimen examined from the Ta Pai Shan in the Tsing Ling Range is considerably paler throughout than specimens examined from Kansu, Sungpan in northern Szechwan, and western Szechwan 25 miles west of Wenchwan, and has been described in detail by Birckhead (1937, Amer. Mus. Novitates, no. 966, p. 14). This specimen, however, is in worn plumage, and some of the differences may have been accentuated by wear. Nevertheless it shows one possibly diagnostic character not described by Birckhead, namely, that the brown area on the throat is reduced to a median streak 7 mm. wide, whereas the whole throat is dark in the other specimens. Shensi is more arid, and additional specimens will probably confirm the existence in this region of a distinct race.

It has been suggested that *Paradoxornis unicolor* and *P. paradoxa* are conspecific, but the ranges of the two forms apparently overlap where they come in contact in eastern Sikang. Oustalet (1877, Oiseaux de la Chine, pp. 205–207) states that they both occur at Muping [Paohing]. They are very similar superficially but show differences of structure, pattern, and coloration. The fourth toe present in *P. unicolor* is reduced to a mere stub in *P. paradoxa*. In *P. unicolor* the feathers of the crown, throat, and breast have darker centers and give these parts a somewhat streaky appearance, and the eye ring is narrow or virtually missing, and the wings and tail are brown and rufous. In *P. paradoxa* the fore crown is whitish, the feathers of the crown, throat, and breast are uniform, the throat is covered by an unbroken patch of brown, the eye ring is very broad, and the wings and tail are pale ashy. The bill is larger and more massive and powerful in *P. paradoxa*.

Paradoxornis unicolor has been studied by Mayr (1941, Ibis, p. 708) who states that "it is very questionable whether any races of this species can be admitted." I have examined the same material and I agree that *canaster* Thayer and Bangs, 1912, Wa Shan, eastern Sikang, cannot be maintained. Mayr, however, scarcely discussed the populations of northern Yunnan and neighboring parts of Burma (*saturator* Rothschild, 1921, Shweli-Salwin Divide) which, I find, differ slightly but constantly from those of the Himalayas (nominate *unicolor* Hodgson, Nepal) and those of Sikang by being darker. There are also other small differences in coloration. The first-named populations are more purplish gray and more

ashy on the crown to the nape, sides of the head, and throat, the gray area becoming paler on the center of the breast and contrasting more sharply with the gray-brown of the belly and flanks which averages darker; the outer edges of the wing feathers are a darker rufous brown. I am aware that Rothschild himself (1926, *Novitates Zool.*, vol. 33, p. 309) synonymized *saturation* with *canaster*, but the diagnostic characters of *saturation*, though slight, seem sufficiently well indicated to warrant its recognition.

In *Paradoxornis webbiana*, the various races can be arranged in two groups, the nominate *webbiana* group (including *alphonsiana* and related forms), in which the outer edges of the wings are reddish or chestnut, and the *brunnea* group, in which these parts are plain brown or olive brown. The second group, found in northern Yunnan to northern Burma and Northern Shan States, consists of *brunnea*, *styani*, and *ricketti*. In this group, *brunnea* has been treated as a separate species, for it was believed that its range may overlap that of *styani* in the region between Tengyueh and Tali. Present evidence shows, however, that the three forms, which differ in their pigmentation only in a matter of degree, replace one another geographically.

In the nominate *webbiana* group the populations found from Korea to northern Hopeh have been divided into three forms: *fulvicauda* Campbell, 1892, Korea; *rosea* La Touche, 1923, northeastern Hopeh; and *pekinensis* La Touche, 1923, Peking. All recent authors have correctly regarded the two forms described by La Touche as synonyms of *fulvicauda* except Austin (1948, *Bull. Mus. Comp. Zool.*, vol. 101, p. 187) who states that specimens from Korea "lack the pinkish tinge which characterizes *rosea*." I have examined some of Austin's specimens from Korea as well as the types, paratypes, and other topotypes of *rosea* and *pekinensis*, and I fail to see any difference in specimens in comparative plumage.