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## Systematic Notes on Palearctic Birds. No. 16 Troglodytinae, Cinclidae, and Prunellidae

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The following notes were made during a study of these groups for a proposed check list of the Palearctic region. They include a review of the races of *Troglodytes* in eastern Asia. I am indebted and 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 for the loan of specimens, to Mr. J. D. Macdonald and his staff for many courtesies received during a visit to the British Museum, to Dr. E. Sutter of Basle for a transcript of the descriptions of some forms published in a rare Swiss publication, and to Dr. D. Amadon for reading and criticizing the manuscript.

### TROGLODYTINAE

In *Troglodytes troglodytes* the populations that breed in the British Isles can be divided into five subspecies which are more or less well differentiated. These are *zetlandicus* Hartert, 1910, in the Shetlands, a dark and heavily barred race with a strong and long bill measuring in nine adults examined by me 15–16.5 (15.9); *hirtensis* Seebohm, 1884, restricted to St. Kilda Island, west of the Outer Hebrides, and which is a conspicuously pale and grayish, heavily barred race; *fridariensis* Williamson (1951, *Ibis*, p. 599, type locality, Fair Isle), restricted to that island; *hebridensis* Meinertzhagen, 1924, which appears to be restricted to the Outer Hebrides; and *indigenus* Clancey (1937, *Bull. Brit. Ornith. Club*, vol. 57, p. 143, type locality, southwestern Scotland), the name under which I believe all the populations of Ireland, Inner Hebrides, Scotland, and England should be combined.

The first two races (*zetlandicus* and *hirtensis*) are very well differentiated and require no comment, but *fridariensis* is slightly differentiated and *hebridensis* is poorly so. *Troglodytes t. fridariensis* shows a certain tendency towards the characters of *hirtensis* but is darker and more rufous and not so heavily barred, but paler than *zetlandicus* or *hebridensis*. When compared in series, this last form is not truly separable in coloration from *zetlandicus*, although occasional individuals from the Outer Hebrides tend to be very slightly more buffy below while others are perhaps not quite so heavily barred. But *hebridensis* does have a somewhat weaker and shorter bill, measuring in five adults 14–15 (14.5) as against 15–16.5 (15.9) in *zetlandicus*, and this difference is perhaps sufficient to warrant its nomenclatural recognition. However, it seems that it would have been more desirable to call attention to the slight population characters in the Outer Hebrides, as well as on Fair Isle, without burdening the nomenclature with the descriptions of *hebridensis* and *fridariensis*.

My examination of the four insular races discussed so far is based on the collections of the British Museum and American Museum of Natural History, and the measurements were taken from the specimens in the second institution.

The fifth race, *indigenus*, is not so well differentiated as *zetlandicus* or *hirtensis* but, in my opinion, is better differentiated than *fridariensis* or *hebridensis*, although its validity has been denied by the Committee on Nomenclature of the British Ornithologists' Union (1938, *Ibis*, p. 332), and the official check list of the Union (1952, pp. 69–70) calls the populations of the British Isles nominate *troglodytes* with the exceptions of those of the Shetlands, Outer Hebrides, and St. Kilda. When at the British Museum I failed to compare specimens from the British Isles with topotypical nominate *troglodytes* from Sweden, accepting the official opinion, but when comparing later the specimens of these populations in New York, I found that Clancey (1938, *Ibis*, p. 753) was entirely correct when he stated that *indigenus* must be compared with specimens from Sweden and not with specimens from England. The material in New York, consisting of 69 specimens from Ireland, Inner Hebrides, Scotland, and England and 14 from Sweden, is thus adequate as a basis for giving an opinion and shows that 66 of the 69 specimens are separable by being not nearly so bright and rufous above as the 14 from Sweden. Among the 66 specimens, those from Scotland and the Inner Hebrides (as well as those from Ireland which are identical with those of Scotland and Inner Hebrides) are constantly darker above than nominate *troglodytes* but not so dark and less heavily barred than *hebridensis*. Specimens

mens from southern England, collected along and south of a line running from about Hertfordshire to Somerset, are not very constant in coloration. They are less dark than the specimens from the north compared as a series, but they are all constantly darker above, grayer and duller, not so brightly rufous, as the specimens from Sweden. As it is apparent that these southern birds cannot be truly referred to nominate *trogodytes*, it seems wiser to call them *indigenus* rather than to describe a poorly differentiated race for southern England, and it would be very difficult to define its range because the southern and northern populations are connected by all sorts of intermediates. I have examined such intermediates collected during the breeding season in central and northern England, and other intergrading populations have been mentioned by Clancey (1943, *Ibis*, p. 96).

Three of the 69 specimens are identical with specimens in comparative plumage from Sweden, but two of these were collected on December 14 and 22 in Sussex and may be winter visitors from the continent. The other, collected on April 17 in Devon, may have been a local bird. Dark specimens, identical with those of Scotland, have been examined from Hertfordshire, Middlesex, and Somerset, but they had been collected from October 29 to January 20 and may have been visitors from the north.

It should be remarked that the coloration of this species foxes and that old skins as well as more freshly collected specimens in worn plumage are always slightly and sometimes distinctly paler and brighter rufous than specimens in fresh plumage, although it has been stated in the literature that age and abrasion cause little change in coloration. Much previous work based on this faulty assumption is open to question, especially in the case of forms described or recognized on slight differences in coloration by authors who did not consider post-mortem changes.

Four forms can be synonymized with nominate *trogodytes*: *bergensis* Stejneger, 1884, type locality, west coast of Norway; *weigoldi* von Jordans, 1923, type locality, northern Portugal; *occidentalis* Verheyen (1941, *Bull. Mus. Roy. Hist. Nat. Belgique*, vol. 17, no. 33, p. 26, type locality, Belgium); and *meinertzhageni* Clancey (1942, *Bull. Brit. Ornith. Club*, vol. 62, p. 68, type locality, Ouessant Island, western France). The author of this last race states that it approaches nominate *trogodytes* in the coloration of the under parts but is paler above and approaches *kabylosum*. Specimens from Ouessant are not available, and it is possible that this insular form is sufficiently well differentiated to warrant its nomenclatural recognition, but it is based on a small series and would seem to require confirmation.

Stejneger separated *bergensis* on the basis of its being more heavily

and more darkly barred than nominate *trogloodytes* and with the ground color slightly brighter. Hartert (1910, Die Vögel der paläarktischen Fauna, p. 778) considered *bergensis* to be a synonym of nominate *trogloodytes*, but in 1935 he and Steinbacher (Die Vögel der paläarktischen Fauna, suppl. vol., p. 340) recognized *bergensis*, stating that Salomonsen (1933, Jour. Ornith., vol. 81, p. 100) had found it to be valid. Salomonsen, in addition to the differences in coloration, found that *bergensis* averaged larger, males from Norway having a wing length of 48–53 (50.8) as against 48–51.5 (49.5) in males from Denmark, and 46–50 (48.2) in males from England, but I find that 10 male topotypes of nominate *trogloodytes* measure 47–52 (49.5), and I doubt that the differences in coloration are sufficiently sharp to warrant the recognition of *bergensis*. Only one specimen, an unsexed adult, is available from the coast of Norway, but it falls within the range of individual variation of topotypical nominate *trogloodytes* in coloration and size. Its wing length measures 48 mm. Stejneger did not give the measurements of *bergensis*, other than stating that males had an average wing length of 47 mm.

According to Verheyen the population of Belgium which he separated as *occidentalis* is duller and grayer above than nominate *trogloodytes*, and he adds that *occidentalis* will probably be found to be the breeding form of France. He is followed by Mayaud (1953, *Alauda*, p. 49) who states that nominate *trogloodytes* occurs also in France but only as a migrant. This species is largely sedentary, in southern Sweden as well as in France, but whether or not migrants do reach France, I cannot separate a series of 10 birds collected mostly during the breeding season in France from topotypical nominate *trogloodytes* in comparative plumage and doubt that *occidentalis* is valid.

According to the author of *weigoldi* himself, the coloration of this form is not constant, and it seems, therefore, that it should have been unnecessary to describe it. Witherby (1928, *Ibis*, p. 618), who has examined topotypical *weigoldi*, has rejected it categorically.

To turn to a valid race, *koenigi* Schiebel, 1910, described from Corsica, the population of Sardinia is always referred to *koenigi*, but four adults compared from this island to seven from Corsica suggest that the birds of Sardinia show a tendency towards *kabylorum* of northwestern Africa. The four specimens vary somewhat individually, but in series they average not quite so dark nor quite so heavily barred as the specimens from Corsica, but they are much closer to the latter and far too poorly differentiated from *koenigi* to warrant their description as a new subspecies. *Trogloodytes t. koenigi* is a very well-differentiated subspecies, distinctly darker, more earthy brown, and more heavily barred through-

out than nominate *troglodytes*, especially above where the barring extends farther up, to the upper border of the mantle and in some specimens to the hind neck. The bill of *koenigi* is longer and more attenuated, measuring 14.5–16 (15.2) in seven adult topotypes as against 13.5–15 (14.1) in 10 males from Sweden.<sup>1</sup>

The validity of another form described by von Jordans is open to question. This author has described the population of the Balearic Islands as *mülleri*, stating that it is paler above and on the wings than *kabylosum*, but a paratype of *mülleri* in the Rothschild Collection falls perfectly within the range of individual variation of a long series of *kabylosum*. A series from Mallorca might show an average difference but, unless a clear-cut one can be demonstrated, *mülleri*, in my opinion, seems best synonymized with *kabylosum*.

*Troglodytes t. cypriotes* Bate, 1903, type locality, Cyprus, is not a well-differentiated race. It is not very constant but can be distinguished in series from the other three races on the Mediterranean Islands and in north Africa (*koenigi*, *kabylosum*, and *juniperi*) with which it shares a long and attenuated bill, by being usually more heavily barred below, the barring reaching in some specimens to the level of the upper breast. It seems amply sufficient to recognize *cypriotes* alone without admitting three other forms which seem to differ from it only very slightly. These are *stresemanni* (Schiebel, 1926, type locality, Crete; *syriacus* Meinertzhagen, 1933, type locality, Lebanon; and *seilerni* Sassi (1937, Ornith. Monatsber., vol. 45, p. 87, type locality, Rhodes). Eight specimens from Crete, adults and immatures, average somewhat colder in tone and less barred below than 11 adults and immatures from Cyprus, but the difference is far from constant and is too slight, in my opinion, to warrant the recognition of *stresemanni*. According to Meinertzhagen, even topotypical *syriacus* varies individually, and, as two out of three topotypes of this form examined by me are identical with specimens from Cyprus, I see no point in recognizing *syriacus*. Specimens from Rhodes are not available, but I doubt that *seilerni* is sufficiently well differentiated from *cypriotes* to warrant its recognition, because Salvadori and Festa (1913, Boll. Mus. Zool. Torino, vol. 28, no. 673, p. 16) refrained from describing the population of Rhodes, stating that they had submitted specimens to Hartert for his opinion.

In a discussion of the forms of the Iranian region (1951, Amer. Mus. Novitates, no. 1485), I recognized *zagrossiensis* Zarudny and Loudon,

<sup>1</sup> In 1951 (Amer. Mus. Novitates, no. 1485, p. 3, table 1) I gave the bill measurements of this series as 12.5–14.2 (13.5), but, after remeasuring this series several times, I find that the measurements should be increased as above.

1908, type locality, southwestern Iran, and *subpallidus* Zarudny and Loudon, 1905, type locality, northeastern Iran and Paropamisus, but emphasized that these forms are very poorly differentiated. After reexamining the same material and studying the geographical variation prevailing throughout the Palearctic region as a whole, I believe that it would be misleading to recognize these two forms and thus to overemphasize their very slight degree of differentiation. *Troglodytes t. zagrossiensis* is very slightly paler than, but is best synonymized with, *hyrcanus* Zarudny and Loudon, 1905, type locality, northern Iran in the Caspian districts; while *subpallidus* is slightly more grayish and less barred below than, but best synonymized with, *tianschanicus* Sharpe, 1881, type locality, Turkestan.

Portenko (1954, Fauna U.S.S.R., no. 54, birds, vol. 3, p. 146) has recently described a new form from Varzob in Tadzhikistan in southern Turkestan which he calls *cineraceus*, stating that it is grayer above than *tianschanicus* and *tarimensis* and more yellowish than *subpallidus*. Specimens from Tadzhikistan are not available to me, but the existence of a well-differentiated race in this region is open to question if Portenko recognizes such forms as *subpallidus* and *tarimensis*. The latter is a synonym of *tianschanicus* (see Hartert and Steinbacher, 1935, Die Vögel der paläarktischen Fauna, suppl. vol., p. 341), and *subpallidus* has been discussed in the preceding paragraph. In my opinion, *cineraceus* is best synonymized with *tianschanicus*, or with *subpallidus* if it is thought desirable to recognize this form.

*Troglodytes t. tibetanus* Walton, 1905, type locality, southern Tibet, does not seem to be sufficiently larger than *nipalensis* Blyth, 1845, type locality, Nepal, to warrant its recognition. The two are identical in coloration, and the only difference noted by Ludlow (1951, Ibis, p. 558) is that males of *tibetanus*, but apparently not the females, according to Ludlow, seem to be very slightly larger. The published measurements of *tibetanus* (of which I have not examined specimens) are very few. According to Baker (1922, The fauna of British India, London, Taylor and Francis, vol. 1, p. 448) the wing length of *tibetanus* is "53 and 56 mm." Ludlow and Kinnear (1944, Ibis, p. 177) report a single male of *tibetanus* which measures 56 and state that in series of *nipalensis* the wing measures 50–54 in seven males, 49–51 in seven females.

#### RACES OF EASTERN ASIA

Twenty-one forms have been described from eastern Asia north and east of the range of *szetschuanus* which ranges from southern Kansu and southern Shensi through Szechwan to Hupeh. Included in this number

is *taivanus* from Formosa. Seven of these have been shown to be invalid by Hartert or Hartert and Steinbacher in "Die Vögel der paläarktischen Fauna" and supplements, or by Nagamichi Kuroda (1932, *Novitates Zool.*, vol. 37, pp. 395-396), and I believe that the number of recognized races should be further reduced to a total of eight.

The following review is offered because the forms of eastern Asia do not seem to have been compared as a whole. It is based on the material in the collection of the American Museum of Natural History, augmented through the kindness of the authorities of the Museum of Comparative Zoölogy and of the United States National Museum, by the loan of their material. The series includes six types; five of them are those of valid races. The valid races seem to be as follows:

1. *Troglodytes t. idius* Richmond, 1907, type locality, Wang kuai chon, Hopeh [at about longitude 114° 30' E., latitude 38° 45' N.], with the following two as synonyms: *suprapallidus* Stresemann, 1930, type locality, Mantuse, northern Kansu [in the Tatung Range on the border of Kansu and eastern Tsinghai]; and *longicilla* Meise (1937, *Jour. Ornith.*, vol. 83, p. 571, type locality, Tsing chou fu, northeastern Shantung). This race is conspicuously paler and grayer than *szetschuanus* and replaces it in northern China from Tsinghai, central and northern Kansu, Shansi, northern Shensi, and Shantung, north to Hopeh and southern Jehol.

Stresemann separated *suprapallidus* as being paler and grayer than *szetschuanus* and *idius* and as having a shorter tail than the latter. His comparative material of *suprapallidus* and *idius* consisted of three skins of the former collected by Beick and of two of *idius* from Shantung. According to Stresemann, the tail in the three specimens of *suprapallidus* measures 28 mm. (unsexed), 28.5 (female), and 30 (male), as against 36 and 37 in the two specimens from Shantung, both males. Meise in 1937 (*loc. cit.*) compared these two skins from Shantung with two from Hopeh in the Dresden Museum which had not been examined by Stresemann, and, finding that the two from Shantung had a longer tail (36 and 37 as against 29+ and 31+ in the two from Hopeh), he described the population of Shantung as *longicilla*, adding also that it was darker than *idius*. In the same paper, Meise reports three additional skins of *suprapallidus* collected also by Beick in the same region as the first three, and, although he had the two skins from Hopeh, he does not mention the color difference noted by Stresemann, stating only that *suprapallidus* differs from *idius* by having a somewhat longer tail, which measures 28, 28.5, 29.5, 30, 30, 31.5. The measurements given below (table 1) do not confirm a difference in tail length between the populations of east-

ern Tsinghai, Shantung, and Hopeh, and, because specimens in the same state of plumage from these regions are identical in coloration, I consider *suprapallidus* and *longicilla* to be synonyms of *idius*.

The range of *idius* may extend to Kiangsu. Two specimens from Chinkiang in southern Kiangsu collected in February and March are typical *idius*. They may have been winter visitors, but it is not certain that *idius* is migratory. According to Shaw (1936, Zool. Sinica, Fan Mem. Inst., ser. B, vol. 15, p. 665), *idius* is a permanent resident in Hopeh, breeding in the mountains and wintering on the plains. La Touche (1925, A handbook of the birds of eastern China, London, Taylor and Francis, p. 43) reports this race as a migrant on Shaweishan Island and as a winter visitor in Kiangsu, Fukien, and Kwangtung. Specimens from the last two regions are not available, but two specimens in the La Touche collection in the Museum of Comparative Zoölogy, collected on Shaweishan Island on November 1 and 4, are too dark and too rufous for *idius* and are, in fact, very similar to *fumigatus* from Japan.

It should be mentioned that the color plate of the type of *idius* given in Richmond's paper (1907, in Blackwelder, Carnegie Inst. Washington Publ., no. 54, vol. 1, pt. 2, p. 498, pl. 59) may be misleading. The type of *idius*, as well as all the specimens examined from Hopeh, is not so bright and pale, nor so rufous, as in the copy of this paper available to me.

SPECIMENS EXAMINED: Eastern Tsinghai on the Yellow River on the border of Kansu, five specimens; northern Shensi, one; northern and central Shansi, two; northern Shantung, one; Hopeh, 14, including the type of *idius*; and southern Kiangsu, two.

2. *Troglodytes t. dauricus* Dybowski and Taczanowski, 1884, type locality, Dauria [= Transbaicalia], with the following as synonyms: *peninsulae* Clark, 1907, type locality, Fusan, Korea; and *lönnerbergi* Momiyama, 1927, type locality, Sisuka, southern Sakhalin. This race, which ranges from Transbaicalia eastward to Sakhalin, Ussuriland, Korea, and Manchuria, is darker than *idius* but not so dark and sooty as *szetschuanus*, nor so dark and rufous as *fumigatus*. Specimens from Transbaicalia are not available to me, but I follow Dementiev (1933, L'Oiseau, p. 455) who considers *peninsulae* and *lönnerbergi* synonyms of *dauricus*. Specimens from Transbaicalia were presumably available to Dementiev in the Russian collections, but they were not available to the authors of *peninsulae* and *lönnerbergi* or to the other authors who recognize *peninsulae*, such as Stegmann (1931, Jour. Ornith., vol. 79, p. 211), Nagamichi Kuroda (*loc. cit.*), Yamashina (1939, Tori, vol. 10, p. 502), or Austin (1953, in Austin and Nagahisa Kuroda, Bull. Mus. Comp. Zoöl., vol. 109, p. 525), and it is not clear that they were available



to Hartert. There are none in the Rothschild Collection, and there are apparently none in the Japanese collections, although the "Hand-list of Japanese birds" (1942 edition, p. 76) recognizes *peninsulae*.

This last form is supposed to be intermediate in coloration between *dauricus* and *fumigatus*, but, while it is entirely possible that specimens from the eastern end of the range of *dauricus* may differ slightly from those of Transbaicalia, it remains to be seen whether they are sufficiently well differentiated to warrant the nomenclatural recognition of such an intermediate.

One of the characters cited for *peninsulae* is that in this form the small white spots on the sides of the face and neck and on the upper wing coverts are better indicated than in *fumigatus*, but in the specimens examined by me from Korea and Japan these spots vary individually to the same extent in both series.

SPECIMENS EXAMINED: Southern Sakhalin, two paratypes of *lönnerbergi*; southern Ussuriland, three, and Korea, seven, including the type of *peninsulae*.

3. *Troglodytes t. pallescens* Ridgway, 1883, type locality, Bering Island, Commander Islands. This race, which is restricted to the Commander Islands and, according to Dementiev, to Kamchatka, is exceptionally well differentiated, being very dull and gray, not at all rufous, and has a very long bill (table 1). Its bill and that of *kurilensis* are the longest of any races of the species; the longest bill measured by me in *pallescens* was 18 mm., but Hartert quotes Taczanowski as saying that it reaches 19.1 mm.

SPECIMENS EXAMINED: Commander Islands, Copper (or Medny) Island, 11; and Bering Island, four, including the type and paratypes of *pallescens*.

4. *Troglodytes t. kurilensis* Stejneger, 1888, type locality, Shasukotan Island, northern Kuriles. This race, which is apparently restricted to the northern Kuriles, is well differentiated, although it is intermediate in coloration between *pallescens* and *fumigatus*. It has the long bill of *pallescens* but is much darker and is rufous, but not so dark or rufous as in *fumigatus*.

SPECIMENS EXAMINED: Shasukotan Island, the type of *kurilensis*, and two from Ushichi Island.

5. *Troglodytes t. fumigatus* Temminck, 1835, type locality, Japan, with the following as synonyms: *utanoi* Kuroda, 1922, type locality, Tsushima Island; and *quelpartis* Kuroda and Mori, 1925, type locality, Quelpart Island. This race is distinctly more brownish and more rufous than the preceding, and "smoky" below, as its name indicates. It ranges

throughout the main islands of Japan as well as on the neighboring islands of Tsushima, Quelpart, and Iki, and varies very slightly from island to island. In the main islands a slight cline of decreasing size runs from north to south (table 1), and this cline may be accompanied by a slight one in increasing saturation. However, in the material examined, eight out of 11 specimens from Hokkaido and two out of three from Kyushu are identical in coloration with a long series from Hondo.

Austin recognizes a separate and darker race (*utanoi*) for Kyushu and states that four specimens from Quelpart "are referable to *peninsulae* of Korea," but four of the six specimens that I have examined from Quelpart are identical with the specimens from Hondo. Nagamichi Kuroda described *utanoi* from Tsushima Island, but I doubt that it is a well-differentiated form, for Kuroda later (1932, *loc. cit.*) considered *utanoi* to be a synonym of *ogawae* Hartert, 1910, which is a darker race occurring on Yakushima Island. The "Hand-list of Japanese birds" (1942, p. 77) revived *utanoi*, giving it for range Kyushu, Iki, Tsushima,

TABLE 1  
MEASUREMENTS OF ADULTS IN THE EASTERN RACES  
OF *Troglodytes troglodytes*

Race and Region	N	Wing	Tail	Bill
<i>idius</i>				
E. Tsinghai	♂	52, 53.5	33, 37	14, 15
	♀	52, 52, 54.5	32, 32, 34	13.5, 14.5, 14.5
Shansi	♂	53	35	14.5
	♀	51.5	31	14.5
N. Shensi	♂	51.5	31	14.5
N. Shantung	♀	52.5	35	14.7
Hopeh	10 ♂	49-55 (53)	34-39 (35.7)	14-15 (14.6)
	♀	50, 50, 51	33, 34, 36	13, 13.5, 14
	♂	55	35	14.5
<i>dauricus</i>				
S. Sakhalin	♀	49	34	14
S. Ussuriland	♂	51, 51, 52	33, 34, 34	14.5, 15, broken
Korea	5 ♂	50-52 (51.6)	33-37 (34.8)	14-14.5 (14.1)
	♀	49, <sup>b</sup> 51	33, <sup>b</sup> 34	14, 14 <sup>b</sup>
<i>pallascens</i>				
Commander I.	5 ♂	53-56 (54.4)	33-35 (34.2)	17-18 (17.2)
	♀	52, 53	32, 34	16.5, broken
<i>kurilensis</i>				
N. Kuriles	♂	56	37	17.5
	♀	51	33	16.5
	♂	56	37	18

TABLE 1—*Continued*

Race and Region	N	Wing	Tail	Bill
<i>fumigatus</i>				
Hokkaido	7 ♂ ♀	52-55 (53.7) 52	33-37 (34.7) 33	14-15 (14.5) 13.5
Hondo	9 ♂ 7 ♀ 4 <sup>a</sup>	47-52.5 (51) 46-52 (48.4) 48-53 (50.5)	32-37 (34.3) 29-34 (32) 30-36 (33.3)	14-15 (14.3) 13-14.5 (13.6) 13.5-14 (13.7)
Kyushu	♂ ♀	49, 52 51	32, 35 33	14, 14 14.5
Quelpart	♂ ♀	48, 51, 53 47	30, 34, 36 32	13.5, 14, 14 13.5
<i>mosukei</i>				
Izu Islands	♂	49, 49, 50	30, 31, 33	all 15
<i>ogawae</i>				
Tanegashima	♂	48	Broken	13.5
Yakushima	6 ♂ ♀	46-51 (48.7) 49	30-36 (33) Broken	14-16 (14.8) 15
<i>taivanus</i>				
Formosa	♀	45, 47, <sup>d</sup> 48	28, 28, 29 <sup>d</sup>	14, 14.5, <sup>d</sup> 15

<sup>a</sup> Unsexed.<sup>b</sup> The type of *peninsulae* marked as "♀" on original label.<sup>c</sup> Unsexed and the type of *kurilensis*.<sup>d</sup> The type of *taivanus*.

Individual measurements of the sexed specimens not given in the body of table 1: *Troglodytes t. idius*, Hopeh, males, wing, 49, 52, 52, 53, 53, 54, 54, 55, 55; tail, 34, 34, 35, 35, 35, 36, 37, 37, 39; bill, 14, 14, 14, 14.5, 14.5, 15, 15, 15, 15; type of *idius*, 52, 35, 15. *Troglodytes t. dauricus*, Korea, males, 50, 50, 51.5, 52, 52; 33, 34, 35, 37, and one broken; 14, 14, 14, 14, 14.5. *Troglodytes t. pallescens*, males, 53, 54, 54, 56; 33, 34, 34, 35; 17, 17, 17, 18; type of *pallescens*, 55, 35, 17. *Troglodytes t. fumigatus*, Hokkaido, males, 52, 52, 53, 54, 55, 55, 55; 33, 33, 34, 35, 35, 36, 37; 14, 14, 14, 14.5, 15, 15, 15. Hondo, males, 47, 49, 51, 51, 52, 52, 52, 52, 52.5; 32, 32, 33, 34, 35, 35, 35, 36, 37; 14, 14, 14, 14, 14, 14.5, 15, 15; females, 46, 47, 48, 48, 49, 49, 52; 29, 32, 32, 32, 33, 34; 13, 13, 13.5, 13.5, 14, 14, 14.5. *Troglodytes t. ogawae*, Yakushima, males, 46, 46, 50, 50, 51; 30, 32, 32, 35, 36; 14, 14, 14.5, 15, 15; type of *ogawae*, 49, 33, 16.

and Quelpart, but, as stated above, specimens from Kyushu and Quelpart are identical with *fumigatus*. I did not examine specimens from Tsushima or Iki, and it is possible that the populations of these two islands vary slightly, but it seems best not to recognize *utanoi* and to call all the birds from the range given above by the name *fumigatus*, although the populations of the various islands may be found to vary very slightly in depths of saturation when compared in series.

SPECIMENS EXAMINED: Hokkaido, 11; Hondo, 22; Kyushu, three; and Quelpart, six.

6. *Troglodytes t. mosukei* Momiyama, 1923, type locality, Hachijo, Seven Islands of Izu, with *orii* Yamashina (1938, *Tori*, vol. 10, p. 227, type locality, Minami-Daitojima, Borodino Islands) as a synonym. This race, which occurs in the Seven Islands from Kozushima to Hachijo, is similar to *fumigatus* but is darker and redder brown and seems to have a very slightly longer bill (table 1). Specimens from the Borodinos are not available, but I believe that *orii* requires confirmation, as it is known only from a single specimen, the description of which seems to show that it is closer to *mosukei* than it is to *fumigatus* or *ogawae*.

SPECIMENS EXAMINED: Seven Islands of Izu, Mikura Island, one; and Hachijo Island, two.

7. *Troglodytes t. ogawae* Hartert, 1910, type locality, Yakushima. This race, which occurs on Tanegashima and Yakushima Islands south of Kyushu, is darker and more sooty brown than *fumigatus*, less reddish than *mosukei*.

SPECIMENS EXAMINED: Tanegashima, one; Yakushima, seven, the type and paratypes of *ogawae*.

8. *Troglodytes t. taiwanus* Hartert, 1910, type locality, Mt. Arizan, Formosa. This race, which is not closely related to any of the preceding races, with the possible exception of *idius*, to which it comes nearest, is a pale and dull form and not heavily banded. It is more yellowish above and below, less rufous, than *idius*, and its breast is clear, not banded. It is distinctly smaller also (table 1).

SPECIMENS EXAMINED: Formosa, three, the type and paratypes of *taiwanus*.

## CINCLIDAE

### *Cinclus cinclus*

Many of the European populations of *Cinclus cinclus* are not stable, and in some regions, such as Switzerland, northern Italy, central Europe eastward to the Balkans, and in the Pyrenees and the Iberian Peninsula, individuals vary from some that are blackish and very similar to nominate *cinclus* from Scandinavia to others in which the breast and abdomen are more or less extensively tinged with rufous, the pigment varying from very dull and brownish to rather bright chestnut. The brown of the crown and nape varies also in depths from very dark to very pale. Nevertheless, in the continental populations other than those of nominate *cinclus*, the geographical variation follows several trends which are

discussed below. The populations of Asia Minor and northern Africa are discussed also.

The populations (*aquaticus*) that range from Silesia, western Czechoslovakia, and central and southern Germany to northern France and Switzerland are more or less rufous brown or chocolate below and are fairly stable, although in Switzerland individual variation is high, and some blackish individuals occur. In southern Switzerland the populations become brighter rufous below and appear to grade into *meridionalis* which is strongly rufous or chestnut below and paler brown on the head and nape than *aquaticus*. *Cinclus c. meridionalis* ranges from Austria to northern Yugoslavia, Italy, and southeastern France and is fairly stable, although some blackish specimens have been reported from Italy. From eastern Czechoslovakia, Hungary, and central Yugoslavia eastward to Romania, Greece, and perhaps southwestern Asia Minor, the populations (*orientalis*) are less stable than in *aquaticus* or *meridionalis*. They vary individually, as stated by Stresemann (1920, Avifauna Macedonica, Munich, Dultz, p. 185) from blackish below, and hence not separable from nominate *cinclus*, to virtually as rufous as in *meridionalis*. *Cinclus c. orientalis* is not a well-differentiated race but in series averages slightly darker below and darker and duller on the head than *aquaticus* to which it is closer than it is to *meridionalis*.

The populations of Asia Minor require further study. Neumann and Paludan (1937, Ornith. Monatsber., vol. 45, p. 16), who have described the population of Lasistan in extreme northeastern Turkey as *amphitryon*, believe that the range of *orientalis* extends to western Asia Minor, but Rokitsansky (1939, Ann. Naturhist. Mus. Wien, vol. 49, p. 289) believes that all the birds from northern Turkey, from the region of Bolu eastward, should be referred to *amphitryon*. This latter was described as similar to nominate *cinclus*, that is, blackish and without rufous below, but with a somewhat shorter wing, 90–96 (92.2) in six males as against 91–99 (95.3) in 15 of nominate *cinclus*, and with the bill very slightly more slender. Specimens from Asia Minor are not available, but in neighboring Transcaucasia the population (*caucasicus*) has a more slender bill than nominate *cinclus* and although browner below is not rufous, and it is possible that *amphitryon* may not be sufficiently well differentiated from *caucasicus* to warrant its recognition. •

*Cinclus c. orientalis* is recognized by many authors, but it is not certain that the populations of southeastern Europe are separable from the population of Cyprus for which the older name *olympicus* Madarász, 1903, is available. This name was treated as a synonym of *caucasicus* by Hartert (1910, Die Vögel die paläarktischen Fauna, p. 794) but with a

query, and although it has remained as a synonym of *caucasicus* ever since, no comprehensive study has been published on the birds of Cyprus since the studies of Bucknill in 1910, published in the *Ibis*. Three specimens examined by me from this island can be matched in every detail with paratypes of *orientalis* from Macedonia, but as the species is so variable individually, I hesitate to propose a change in name until a larger series becomes available from Cyprus. Stresemann, in the description of *orientalis* (1919, *Anz. Ornith. Gesell. Bayern*, no. 1, p. 4) and again in 1920 (*loc. cit.*) in the discussion of this form, made no mention of *olympicus* and he, as well as the subsequent authors consulted who have discussed *orientalis*, may have lacked specimens from Cyprus.

To return to the population of Switzerland, six forms have been described from this relatively small country which are based on individual variants, specimens in which the under parts are blackish or pale and were collected in the same regions, or on specimens which appear to be intermediates between *aquaticus* and *meridionalis*. Although five of these<sup>1</sup> were described in 1924, their names do not appear in the supplementary notes on *Cinclus* published in January, 1935, by Hartert and Steinbacher in "Die Vögel der paläarktischen Fauna," perhaps because Hartert and Steinbacher considered that the names had no status in the nomenclature or that they were published in an obscure publication. At any rate it is best to place these names in the synonymy, as their author, although it is clear that he considers these forms to be varieties of recognized subspecies, has described them in terms of geographical forms and given their ranges. The remaining and sixth form was described by Troller (1935, August, *Arch. Suisses d'Ornith.*, vol. 1, p. 198) as *C. c. montanus* and according to Meylan (1936, *ibid.*, p. 293) is the same form described as *alpinus* by von Burg.

The populations of the Pyrenees, the whole of the Iberian Peninsula, and of Corsica and Sardinia belong, in my opinion, to the race *pyrenaicus* Dresser, 1892, type locality, Eaux Chaudes and Gèdres in the central Pyrenees. According to Mayaud (1953, *Alauda*, p. 49) the populations of Brittany and of central France belong also to this race. The validity of *pyrenaicus* has been questioned by some authors who believe that it may not be separable from nominate *cinclus*, but these authors did

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<sup>1</sup> Described by von Burg (1924, *Der Weidmann*, Bülach-Zürich, vol. 6, no. 24, pp. 7-8): *Cinclus c[inclus] c[inclus] alpinus*, Alps, Engadine, Wallis, and Tessin; *Cinclus c[inclus] c[inclus] juratensis*, Reuchenette, Jura Bernois; *Cinclus c[inclus] aquaticus helveticus*, "Mittellands und Voralpen"; *Cinclus c[inclus] meridionalis alpestris*, Alps, as above; *Cinclus c[inclus] meridionalis jurassicus*, valleys of the western Jura.

not have sufficient comparative material. Von Jordans (1935, *Alauda*, pp. 251–253), for instance, had only two very old skins from the Pyrenees. Other authors recognize three races in the Peninsula: *pyrenaicus* in the Pyrenees, *atroventer* Floericke, 1926, for all the other populations of the Peninsula, with the exception of those of southern Spain which they call *aquaticus*.

The material examined by me consists of 25 specimens collected near Cauterets and therefore virtual topotypes of *pyrenaicus*, three from the Province of Santander, two from the Cantabrian Mountains in Leon, one each from the Sierra de Gredos and Sierra de Guadarrama in central Spain, two from the Sierra Nevada in the south, and 11 from Corsica and Sardinia. All the specimens fall perfectly within the range of individual variation in the long series from Cauterets.

In this last series, individuals vary from some that are blackish below without a trace of brown or rufous to others that are rufous brown as in *aquaticus* but not so bright or strongly rufous as in *meridionalis*. In series, *pyrenaicus* differs from nominate *cinclus* by being not so black, browner above and below including the crown and nape, which are distinctly paler, and in fresh plumage by having the gray edges of the feathers of the back better developed. *Cinclus cinclus* foxes a good deal, and old skins become much browner, but I have taken this factor into consideration, and the differences noted are well confirmed by specimens collected in 1953 in Sweden and in Spain.

The two specimens from the Sierra Nevada are rufous brown on the breast and are not separable from *aquaticus*, but as they match perfectly one from central Spain and several of the topotypes of *pyrenaicus*, it seems best to refer this population to the latter than to *aquaticus*. It is possible that a certain amount of gene flow takes place between the population of southern Spain and that of north Africa (*minor*) in which the under parts are bright chestnut and similar to those of *meridionalis*, which is still more rufous than *aquaticus*, but in such an individually variable species the material reported so far from southern Spain is insufficient to decide this question. It consists of only four specimens which include the two reported above.

It is evident that the populations of the Peninsula vary individually, but it is misleading to confuse the prevailing geographical variation of the species by calling some of them by the name of the German race (*aquaticus*) and others by the name of the Scandinavian race (nominate *cinclus*) as was done in the case of the latter by Witherby (1922, *Ibis*, p. 341; 1928, *ibid.*, pp. 618–620) who has been followed by some authors. It seems sufficient to state, I believe, that in the Peninsula as

well as elsewhere throughout the entire range of the dipper, a certain degree of convergence occurs in populations that are otherwise far separated geographically.

Concerning *atroventer*, the validity of which is upheld by von Jordans (*loc. cit.*) and again by von Jordans and Steinbacher (1942, Ann. Naturhist. Mus. Wien, vol. 52, p. 228) von Jordans lacked, as stated, adequate material of *pyrenaicus*, and this race is not mentioned by von Jordans and Steinbacher. Because the specimens compared by me from the Pyrenees and western Spain (the type locality of *atroventer* is on the border of northern Portugal and western Spain) are not separable, I consider *atroventer* synonymous with *pyrenaicus*.

The birds of Corsica and Sardinia were separated as *sapsworthi* by Arrigoni in 1902, but it is generally conceded in the literature that this form is not well differentiated. As stated above, specimens from these islands, adults as well as immature, are not separable from comparative specimens of *pyrenaicus*.

The existence of a distinct race in north Africa (*minor*) has been questioned, and some authors have followed Hartert (1923, Die Vögel der paläarktischen Fauna, Nachtrag, p. 63) who stated that *minor* is not separable from *aquaticus*. The material available to me from north Africa is very restricted, consisting of only two adult specimens and one nestling, but *minor* appears to be a valid though slightly differentiated race. These specimens are much brighter rufous below than *aquaticus*, similar in coloration to *meridionalis* but with a distinctly longer bill, and, although they are old skins, their bill is blacker than in comparative skins of *meridionalis*. In these two specimens, which are females, the bill measures 24 and 25 mm. and in 10 females of *meridionalis*, 20–22.5 (21.2).

The races of Asia have been discussed in a previously published paper (Vaurie, 1951, Amer. Mus. Novitates, no. 1485, pp. 9–15). They do not vary individually to nearly the same extent as those of Europe, but some of them (*leucogaster*, *cashmeriensis*, and *przewalskii*) are polymorphic. This polymorphism is probably another expression of the general genetic instability of the species, but in these races modifiers are probably less effective, and the variation is expressed in sharp differences in coloration, the races being all white below, or white on the throat and upper breast and brown from the breast down, or all brown below.

### *Cinclus pallasii*

In the notes published on this species in 1951 (Amer. Mus. Novitates, no. 1485, pp. 15–19) I remarked that the brown plumage of this bird foxes very rapidly in collections and that recently collected specimens



taken in widely separated parts of the range are distinctly darker, less brownish or rufous. I believed that, in addition to *tenuirostris* from Turkestan, Afghanistan, and western Himalayas, which is conspicuously paler in both fresh and foxed skins, several slightly differentiated races could possibly be recognized on differences of coloration in the eastern part of the range and another (*souliei*) on differences in measurements.

However, after reexamining the material I have come to the conclusion that post-mortem changes are too rapid or that they change the coloration to such an uncertain degree that it seems best to synonymize the following forms with nominate *pallasii* Temminck, 1820, type locality, eastern Siberia: *marila* Swinhoe, 1859, Formosa; *souliei* Oustalet, 1892, eastern Sikang; *wilderi* La Touche, 1925, Hopeh; *hondoensis* Momiyama, 1927, Hondo; *sini* Yen, 1933, Kweichow; and *dorjei* Kinnear (1937, Ibis, p. 263, eastern Bhutan). Another form (*siemsseni* Martens, 1903, Fukien) mentioned in my 1951 paper has already been synonymized with *souliei* by Hartert.

All these forms were described on varying depths in the brown coloration, but the differences mentioned are exactly those that would be observed when skins that were recently collected are compared to older skins, and the authors of the forms described from 1925 on have failed to mention and to compare their material with all the other older forms. It is possible that differences of taxonomic importance separate one or two of the forms listed above as synonyms, but only a comparison of freshly collected material from all parts of the range could demonstrate this. Oustalet when he described *souliei* stated that specimens from Sikang and Hupeh were larger as well as darker brown than one specimen from Japan. The measurements that I gave in 1951 show that the population of China has a somewhat longer wing and bill than that of eastern Siberia and Japan, but as populations with measurements identical with those of these two regions are found elsewhere, such as on Formosa and in India, it seems best not to recognize *souliei*.

In the 1951 paper, I have shown that *C. pallasii kargasiensis* Koelz (1939, Proc. Biol. Soc. Washington, vol. 52, p. 65, type locality, Kargasi Pass, northeastern Afghanistan) is a synonym of *C. p. tenuirostris* Bonaparte, 1850.

## PRUNELLIDAE

### *Prunella collaris*

In this species the validity of *nigricans* Heim de Balsac, 1925, described from the Ouarsenis in the Tellian Atlas of northern Algeria, has been

questioned and requires confirmation. This form is based on only two specimens, collected on April 9, and it is not certain that they were local birds. This species is not truly migratory but wanders outside the breeding season, and Heim de Balsac reports a specimen (apparently of nominate *collaris*) collected on October 27 in Tunisia which he believes to be a stray or migrant. Very little is known about the occurrence of this species in northwest Africa. It apparently breeds in Morocco in the Atlas, where two specimens have been taken in June and August, according to Meinertzhagen (1940, *Ibis*, p. 218), but no report seems to have been published on these birds which were not examined by Meinertzhagen. It has also been collected in the Rif, according to Hartert and Jourdain (1923, *Novitates Zool.*, vol. 30, p. 112), but these specimens have been lost, and Hartert and Jourdain apparently did not know at what time of the year they had been collected.

I agree with Hartert and Steinbacher (1935, *Die Vögel der paläarktischen Fauna*, suppl. vol., p. 334) that the diagnosis of *nigricans* given by Heim de Balsac does not unequivocally differentiate this form from *subalpina* Brehm, 1831, from southeastern Europe, a form that was not mentioned by Heim de Balsac although most of the putative characters of *nigricans* appear to be very similar, if not identical, with those of *subalpina*. Until an adequate series of breeding birds can be examined, it is best not to recognize *nigricans*. This name may be found to be synonymous with *subalpina*, but I provisionally treat it as a synonym of nominate *collaris*, following the current opinion as expressed in the "Handbook of British birds" which refers the birds that breed in Morocco, and possibly Algeria, to this last race.

Turning to the races of Asia, I believe that *kwenlunensis* Buturlin, 1910, type locality, Keriya Range, western Kun Lun, is probably not separable from *ruflata* Severtzow, 1879, type locality, Turkestan; that *talifuensis* Rippon, 1906, type locality, near Tali, northern Yunnan (of which *ripponi* Hartert, 1910, type locality, near Tali, is a pure synonym), is not separable from *nipalensis* Blyth, 1843, type locality, Nepal; and that *berezowskii* Serebrovski, 1927, type locality, Lungun (now Pingwu), on the border of northern Szechwan and southern Shensi, is probably not sufficiently well differentiated and is best synonymized with *erythropygia* Swinhoe, 1870, type locality, between Kalgan and Peking in southern Chahar.

Buturlin based *kwenlunensis* on two old specimens collected by Przevalski in 1885 which he says are "slightly lighter and more ochraceous-tinged" on the mantle than is *ruflatus*, but such a difference appears to be very slight, and the ochraceous tinge is probably due to post-mortem

changes because, when Pleske examined the same two specimens in 1889 (Wissenschaftliche Resultate der . . . Przewalski nach Central-Asien unternommenen Reisen, Zoologischer Theil, vol. 2, pp. 140-142), and therefore soon after they had been collected, he stated that they were identical with *rufilatus*.

Marien (1951, Amer. Mus. Novitates, no. 1482, pp. 3-5) states that a cline of increasing saturation runs from west to east in the Himalayas and continues to China and that *talifuensis* "is scarcely, if at all, distinguishable from *nipalensis*." Specimens in comparative (worn) plumage examined by me from Sikkim, northern Yunnan (including the type of *ripponi*), southern Sikang, and Kangting (formerly Tatsienlu) in eastern Sikang are not separable.

In northern Sikang, Tsinghai, and Kansu, *nipalensis* is replaced by a paler race (*tibetana*) which is also considerably more rufous on the rump and upper tail coverts, and from southern Shensi north to Amurland and Japan by another race (*erythropygia*) which is similar to *tibetana*, with rufous on the rump and coverts, but generally darker. The form *berezowskii* described by Serebrovski is known from only two specimens from the type locality. These specimens, which were collected on June 18 and are probably in worn plumage, are said to be paler than *nipalensis* but darker than *tibetana*. Serebrovski makes no mention of *erythropygia*, but as this race is darker than *tibetana* and its range extends to southern Shensi, one would expect that the population of neighboring Lunggan, if distinguishable at all, would be intermediate in coloration between these two races. Until additional specimens in various states of plumage can be compared, it seems best not to recognize *berezowskii*.

Specimens from the Altai, Sayans, and Mongolia are not available, but although these populations are called *erythropygia* by Sushkin (1925, List and distribution of birds of the Russian Altai, p. 54), Kozlova (1933, Ibis, pp. 324-325), and Dementiev (1935, L'Oiseau, p. 451), they should be compared again with topotypical *erythropygia*, because Tugarinov [1929, Ann. Mus. Zool. Acad. Sci. U.S.S.R., (1928), vol. 29, p. 269] recognized two races in Mongolia: *erythropygia* in the Gobian Altai and for the birds of the region of Khobdo, and *changaicus*, described by Tugarinov in the same paper, for those that inhabit Khangai and Kentei. Tugarinov, however, lacked topotypes of *erythropygia*. Although these were not available to Kozlova either, she states that she doubts that *changaicus* is valid, because the material used by Tugarinov and examined by her is not comparable, consisting of relatively fresh skins compared to much older ones which have become foxed. Until freshly collected material can be compared, it is best to follow the treatment in

"The birds of the Soviet Union" (1954, Moscow, vol. 6, p. 656) which lists *changaicus* as a synonym of *erythropygia*.

*Prunella strophciata*

The range of this species extends in the west to western Kashmir, North West Frontier Province, and the Safed Koh on the border of North West Frontier Province and Afghanistan. Koelz (1939, Proc. Biol. Soc. Washington, vol. 52, p. 67) has described as *sirotensis* two specimens collected on June 17 in the Safed Koh, stating that they are grayer above than topotypical *jerdoni* Brooks, 1872, described from Kashmir. However, these two specimens are, I find, in extremely worn plumage and are identical with specimens from Kashmir showing the same degree of wear. Although Marien (1951, Amer. Mus. Novitates, no. 1482, pp. 6-7) did not synonymize *sirotensis* with *jerdoni*, he stated that it required confirmation, making the same observation as to the condition of the Koelz specimens. Marien believes that a short break in distribution separates the population of the Safed Koh from that of "Ladak and Himalayan ranges of Kashmir where the species next appears," but I see no reason to postulate such a break, as the species is known to breed in western Kashmir.

The validity of an eastern race (*multistriata* David, 1871, type locality, Mupin, now Paohing, eastern Sikang) is discussed, because it has been disputed in fairly recent years by several authors. Ticehurst (1935, Ibis, pp. 256-257) states that this name is a synonym of nominate *strophciata* Blyth, 1843, type locality, Nepal, as he finds that specimens from Mupin are not different from others from Sikkim. He is followed by Mayr (1941, Ibis, pp. 229-230) who states, however, that he did not examine specimens from Mupin. In the Rothschild Collection there are two specimens collected at Tatsienlu (now Kangting), which is only about 60 kilometers west of Mupin; they can therefore be considered virtual topotypes of *multistriata*. These two specimens and three additional ones from the region of Muli in southern Sikang are identical with a series from Sikkim. Three other specimens collected in western Szechwan, 30 miles west of Wenchwan, are identical also with those of Sikkim, and according to Meise (1937, Jour. Ornith., vol. 85, p. 567) this is true also of specimens from the Wa Shan on the border of southern Sikang and Szechwan. It does not seem possible, therefore, to uphold the validity of *multistriata*, although it was done by Schäfer (1939, Proc. Acad. Nat. Sci. Philadelphia, vol. 90, p. 228).

On the other hand, as noticed by Mayr, in birds from "Kansu" (four specimens collected by Beick between 1928 and 1931 in the region con-

necting northeastern Tsinghai and Kansu) the streaks on the back are slightly narrower and the streaking on the flanks is somewhat more reduced. These specimens are paler and grayer above, less rufous, and their breast band is perhaps very slightly paler, but this species foxes badly with age, and it seems best to restrict oneself to the extent of the streaking and the relative width of the streaks. In a series of 26 specimens collected in 1905 in the Tsingling Range in southern Shensi, the general coloration has become almost as dark and rufous as in birds from Sikang and Sikkim, and, although the streaking of these birds varies individually, it varies to exactly the same extent as it does in birds from Sikang and Sikkim. In short, the only specimens examined that differ to a certain extent from nominate *strophyata* are those of "Kansu." This population is called *multistriata* by Meise (*loc. cit.*), but as shown above this name cannot be upheld. A new name could be proposed for this population alone, but in my opinion it is much too slightly differentiated from nominate *strophyata* to warrant nomenclatural separation.

#### *Prunella fagani* and *Prunella ocularis*

*Prunella fagani* is restricted to the mountains of the Yemen at the tip of southwestern Arabia, where it is resident and belongs to the same group of very closely related forms that includes *ocularis*, *fulvescens*, and *atroregularis*. All four have at one time or another been considered to be conspecific, but the breeding ranges of *fulvescens* and *atroregularis* overlap broadly in the Tian Shan, and Stresemann (1928, Jour. Ornith., vol. 76, p. 390), following Sushkin (1925, Proc. Boston Soc. Nat. Hist., vol. 38, p. 48), has shown that *ocularis* is best considered a separate species, because it combines some of the characters of *fulvescens* and *atroregularis* but cannot satisfactorily be ascribed to either. The breeding range of *ocularis* extends to Khorasan and comes very close to that of *fulvescens*, which breeds in northwestern Afghanistan, and the two may be found eventually to overlap to some extent.

*Prunella fagani* is usually considered to be a race of *ocularis*, or occasionally of *fulvescens* or *atroregularis*, but as it is separated geographically by a distance of about 2100 kilometers from the nearest colony of these species (that of *ocularis* in western Iran) and cannot morphologically be clearly ascribed to *ocularis* or the other two species, it seems best to consider it also as a separate species. Marien (1951, Amer. Mus. Novitates, no. 1482, p. 10, table 2) has compared the characters of *fulvescens*, *ocularis*, and *atroregularis*. All four species are more or less similar; *fagani*, compared to the other three, is striped on the crown as in *atroregularis* but lacks its black throat and is more heavily streaked below, includ-

ing the breast and abdomen, whereas in *atroregularis* the streaks are restricted to the flanks and the streaking is usually not heavy. In *fulvescens* and *ocularis* the crown is not striped, below the streaks are indistinct and restricted to the flanks in *ocularis*, while *fulvescens* is not streaked or shows only a very few suggestions of streaks on the flanks.

### *Prunella atrogularis*

Two races of this species can be recognized: nominate *atrogularis* Brandt, 1844, type locality, Semipalatinsk, which breeds in the northern Urals and winters in Russian Turkestan, Afghanistan, Baluchistan, and Iran; and *huttoni* Horsfield and Moore, 1854, type locality, Simla, which breeds in the Altai and in Russian and Chinese Turkestan and winters in Turkestan and northern Afghanistan (a few, chiefly north and east of nominate *atrogularis*) eastward to the western Himalayas. The two races are not sharply differentiated, and a few specimens can be confused in the winter quarters, but most are fairly easy to identify. In typical specimens, nominate *atrogularis* is somewhat paler above, not so heavily streaked, and almost always shows a vague band of whitish separating the black of the throat from the dark buff of the breast. Its tail and bill are shorter. In 10 adult males of each race measured by me the measurements are: nominate *atrogularis*, tail 56–63 (60), bill 12–13 (12.5), as against 58–70 (65.5) and 12.5–15 (14) in *huttoni*.

All the differences in coloration and measurement are relatively slight and not perfectly constant, and it seems unnecessary to admit a third race, *menzbieri* Portenko (1929, type locality, Katon Karagai), the name under which this author has described the population that breeds in the Altai. I have examined only one specimen from the Altai, but it is identical with *huttoni*, and I doubt that *menzbieri* is valid, because its diagnosis shows that at best it must be extremely similar to *huttoni*.

Nominate *atrogularis* has a longer migration than *huttoni*, and its wing tip is slightly more pointed, but I am unable to confirm a difference in wing formula. Portenko, as well as Kinnear (1933, Ibis, pp. 464–465), states that the second primary is longer than the sixth in nominate *atrogularis* and shorter in *huttoni*. In the 10 typical males mentioned above, the second primary in nominate *atrogularis* is longer than the sixth in only three specimens, equal in three, and shorter in four; in *huttoni* it is longer in three, equal in two, and shorter in five.

### *Prunella modularis*

In *Prunella modularis* many races have been described, but in my opinion the number of forms that can be recognized should be reduced to the following five:

1. *Prunella modularis hebridium* Meinertzhagen, 1934, type locality, Outer Hebrides, with *hibernicus* Meinertzhagen, 1934, type locality, Ireland, as a synonym. This race is the darkest above and below and the most heavily streaked. Its range extends from Ireland and the Outer Hebrides to the Inner Hebrides and western Scotland. Seven specimens examined from Ireland average as a series very slightly paler below than nine from the Outer Hebrides, but although Meinertzhagen (1947, Bull. Brit. Ornith. Club, vol. 68, pp. 30-31), who upholds the validity of *hibernicus*, states that it is "never" so dark below as *hebridium*, two of the specimens from Ireland are identical with those of the Outer Hebrides. *Prunella m. hibernicus* does not seem sufficiently well differentiated or constant to warrant its recognition, and its validity is not accepted by the official "Check-list of the birds of Great Britain and Ireland" (1952, London, British Ornithological Union).

2. *Prunella modularis occidentalis* Hartert, 1910, type locality, Tring, with *interposita* Clancey (1943, Bull. Brit. Ornith. Club, vol. 64, p. 14, type locality, Dornoch, Sutherlandshire, northern Scotland) as a synonym. This race is distinctly paler than *hebridium* which it replaces in Scotland and England. The birds of the three northernmost counties of Scotland (Ross, Sutherland, and Caithness) were separated as *interposita* by Clancey. Only three specimens are available to me from Ross, and none from the other two counties. These are identical with a series from Tring, but the description of *interposita* and the statements of Meinertzhagen (1947, *loc. cit.*) leave no doubt that it is purely intermediate between *occidentalis* and *hebridium*. These two are well differentiated but not so very sharply so in my opinion to allow for the nomenclatural recognition of an intermediate, and I follow the check list (cited above) which considers *interposita* to be a synonym of *occidentalis*.

3. *Prunella modularis modularis* Linnaeus, 1758, type locality, Sweden, with the following two as synonyms: *meinertzhageni* Harrison and Pateff (1937, Ibis, p. 612, type locality, Beglik, Bulgaria), and *arduennus* Verheyen (1941, Bull. Mus. Roy. Hist. Nat. Belgique, vol. 17, no. 51, p. 5, type locality, Brumagne, Belgium). This race is brighter above and paler below than *occidentalis*, and its wing tip is more pointed, the second primary being equal in length to the sixth rather than to the seventh. It replaces *occidentalis* on the continent except (see below) in the regions inhabited by *lusitanica* and *obscura*. Specimens from Bulgaria and Belgium were not available, but I doubt that the forms described from these regions are sufficiently well differentiated to warrant recognition.

The description of *meinertzhageni* shows that its characters are not clear cut, because it is described as being similar to several other forms. Specimens from Bulgaria cannot be very different from nominate *modu-*

*laris*, despite the statement of von Jordans (1940, Mitteil. K. Naturwiss. Inst. Sofia, vol. 13, p. 117), because Harrison had already stated (1933, Ibis, p. 595) that the two specimens that he had collected in 1932 in Bulgaria "are in no way different from the typical race." According to Verheyen the birds of Belgium are paler and grayer than nominate *modularis* and extremely (*intimement*) similar to birds from Italy. If so, *arduennus* is most poorly differentiated. Five specimens examined by me from Italy fall perfectly within the range of individual variation of a series from Sweden. Meinertzhagen (1947, *loc. cit.*), who has examined specimens from Italy, states that these "are not so bright, slightly greyer, than Swedish specimens, but some exactly agree."

4. *Prunella modularis lusitanica* Stresemann, 1928, new name for *P. obscura* (Hablizl), 1783, type locality, Portugal, with *mabbotti* Harper, 1919, type locality, eastern Pyrenees, as a synonym. This race, which replaces nominate *modularis* in the Iberian Peninsula and apparently central France, is not well differentiated but is distinguishable. Its wing formula is similar to that of *occidentalis*, but its general coloration is somewhat duller, less rufous, and somewhat grayer than in either *occidentalis* or nominate *modularis*. The validity of *mabbotti* has been questioned by several authors; two specimens collected in the central Pyrenees which appear to be local birds are identical with topotypical *lusitanica* from Oporto. Ticehurst and Whistler (1935, Ibis, p. 561) state that the birds of Portugal are "indistinguishable" from nominate *modularis*, and Meinertzhagen (1947, *loc. cit.*) states that the few specimens of *lusitanica* and *mabbotti* that he has examined "do not appear to differ in any marked degree from *P. m. modularis*." The material of *lusitanica* available to me is very limited, consisting of the two birds from the Pyrenees, two from central Spain, and three from Portugal, but they show the differences mentioned above.

5. *Prunella modularis obscura* Hablizl, 1783, type locality, northern Iran, with the following two as synonyms: *blanfordi* Zarudny, 1904, type locality, near Isfahan, and *enigmatica* Dunajewski (1948, Bull. Brit. Ornith. Club, vol. 68, p. 131, type locality, Crimea). This race, which replaces nominate *modularis* in the Near East, Crimea, the Caucasian region, and northern Iran, is very variable individually but is more brownish, less gray, on the sides of the face and neck, and is mottled with white and less uniformly gray on the breast. I agree with Marien (1951, Amer. Mus. Novitates, no. 1482, pp. 15-16) that *blanfordi* cannot be maintained, and I believe also that the validity of *enigmatica* is open to question. This last form is based on four specimens collected from November to March in the Crimea which Dunajewski believes may not



have been local birds and which he says are less brownish on the crown and whiter on the breast than *obscura*. The population of the Crimea which is said to be *obscura* by Dementiev (1935, L'Oiseau, p. 453) is not known to be migratory, and the four specimens could have been local birds. Dunajewski does not state whether he has examined any breeding birds from the Crimea or how many specimens of *obscura* were available to him. A long series of 30 specimens of *obscura* that I have examined shows a high degree of individual variability, and I believe that the differences cited by Dunajewski could easily fall within its range of variation.

