Systematic Notes on Palearctic Birds. No. 24

Ploceidae: the Genera *Passer*, *Petronia*, and *Montifringilla*

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The following notes were made during a study of the genera named in preparation of a contemplated check list of the birds of the Palearctic region. Ten species are discussed; those reviewed in greater detail are *Passer ammodendri*, *P. montanus*, *P. rutilans*, *Petronia petronia*, and *Montifringilla nivalis*. Attention is called also to one aspect of the geographical variation in *Passer domesticus* which suggests that its various races fall into two groups.

*Passer domesticus*

The House Sparrow is an interesting species from several points of view. Among these, much attention has been paid to the fact that it hybridizes very freely with the Spanish Sparrow (*P. hispaniolensis*) over a wide part of its range (in northwestern Africa, some Mediterranean islands, and Italy) but in other parts of its range, as in Spain, the Balkans, and Asia inhabits the same regions without showing any signs whatever of hybridization. The hybrid populations have been well studied by Meise (1936, Jour. Ornith., vol. 84, pp. 631–672), and the following note does not reopen this question but calls attention to another interesting aspect of the geographical variation in this species. The validity of some forms is also discussed.

In my opinion, 12 subspecies can be recognized. They are more or less well differentiated, but interest in them lies not in their relative degree of distinction but in the fact that they seem to belong to two different
groups which can be called the nominate *domesticus* group and the *indicus* group. The distribution of the two and of their subspecies is illustrated in figure 1. In the nominate *domesticus* group the birds have a longer wing and a larger bill, their cheeks are grayish and do not become so white with wear, the under parts are less white, and the chestnut pigments are not so dark or rich in tone and are more restricted in distribution. The difference in size between two typical races, as shown by the wing length of 20 males of each, is 77–83 (80.3) in nominate *domesticus* from continental Europe as against 70–78 (73.8) in *indicus* from central and southern India.

The morphological differences suggest that the various races have followed two evolutionary lines, one having for a geographical center the Mediterranean region and the other India. With secondary expansion the distribution of the species has now become continuous; perhaps it was never interrupted in the Iranian region where the two groups intergrade smoothly into each other. In Transcaspia and Russian Turkestan the two groups meet but do not intergrade. In these regions, however, the southward expansion of the nominate *domesticus* group seems to have taken place fairly recently, as seems to be the case also in Mongolia. The situation is most interesting in the Nile Valley on the frontier of the Sudan where the two meet in the region of Wadi Halfa and interbreed but do not intergrade smoothly. Here the population varies a great deal individually.¹

The fact that the species is confined in that part of the world to the Nile Valley permits intergradation only along a very narrow front, and this may be one of the reasons why the populations to the north and south of Wadi Halfa are so distinct. The Egyptian race (*niloticus*) is typical of the nominate *domesticus* group in coloration and bill characters, although it is a small race, indeed the smallest in this group, the wing length of 20 males measuring 72–77 (75), but despite its small size it differs sharply from the Sudanese race which is still smaller and belongs to the *indicus* group. In the Sudanese race (*rufidorsalis*) all the color characters of the *indicus* group are emphasized to their greatest extent, as well as the differences in size in the wing and bill. *Rufidorsalis* is still smaller than *indicus*, 20 males having a wing length of 69–75 (72), and the difference in the shape and size of the bill is much sharper between *niloticus* and *rufidorsalis* than between any other two races of the species.

¹ According to Meinertzhagen (1954, Birds of Arabia, London, Oliver and Boyd, p. 102) *biblicus* “merges” into *indicus* in northern Arabia. No specimens are available to me from this region to determine the degree of intergradation between *biblicus*, which is a race of the nominate *domesticus* group, and *indicus.*
The *indicus* group, generally speaking, inhabits more southern latitudes, and its characters, such as smaller size and increase of the reddish brown (chestnut) pigments, may be explained as instances of adaptation that follow ecological rules. As instances of such adaptation in this group, one may mention that the race *parkini*, which in India inhabits high altitudes, as in Baltistan in northern Kashmir and in Ladak, is not small, 20 males from these regions measuring 76–83 (79.3), and that *hufufae*, which inhabits a region of chalky sandstones in eastern Arabia, shows a reduction of the reddish pigments. Nevertheless, in *parkini* and *hufufae* the bill is small. The latter has a short wing, measuring 71–75 in four male paratypes, and *parkini* has the typical dark reddish color of the *indicus* group, its pigments being, if anything, darker and more extensively distributed than those of *indicus*. It seems impossible furthermore to explain the difference in coloration and size between the two races of
the Nile Valley in terms of ecological rules, because the climatic factors, such as precipitation, radiation, or heat, probably do not vary significantly directly to the north or south of Wadi Halfa.

In short, while the reconstruction of the history of a species from present-day characters is always open to the question as to whether these represent adaptations to present-day factors, it does not seem that the difference between the two groups in this species can be explained solely in terms of such adaptations. At any rate, extensions of range, some perhaps rather recent, have brought the two types into more or less abrupt contact.

Subspecies and Synonyms: The ranges of the 12 subspecies which I recognize are shown in figure 1. In addition to these, a number of forms have been described which I believe are not valid or are much too slightly differentiated to warrant recognition. They are: semiretschiensis Zarudny and Kudaschev, 1916, type locality, Verny, Djarkent, Semirechia; balearoibericus von Jordans, 1923, type locality, Mallorca; and baikalicus Keve (1943, Anz. Akad. Wiss. Wien, vol. 80, p. 20) type locality, Kultuk, southern Lake Baikal, all synonyms of nominate domesticus Linnaeus, 1758, type locality, Sweden; schiebeli Rokitansky (1934, Falco, vol. 30, p. 7) type locality, Crete, a synonym of italica Vieillot, 1817, type locality, Italy; halfae Meinertzhagen, 1921, type locality, Wadi Halfa, a synonym of niloticus Nicoll and Bonhote, 1909, type locality, El Faiyum, Egypt; and soror Ripley, (1946, Spolia Zeylanica, vol. 24, p. 241), type locality, Ceylon, a synonym of indicus Jardine and Selby, 1831, type locality, Bangalore, southern India.

When I first studied the populations of western Asia (1949, Amer. Mus. Novitates, no. 1406, pp. 9–21) I stated that semiretschiensis was identical with biblicus Hartert, 1904, type locality, Palestine, and should be synonymized with it. I was mistaken. Upon reexamination I find that the six specimens available from Semirechia are about intermediate in coloration between biblicus and nominate domesticus. They are just as pale as biblicus, which differs from nominate domesticus by being paler, but are more darkly and distinctly streaked on the mantle and in this respect are much closer to nominate domesticus. Thus semiretschiensis is not quite identical with either of the other two, but seems to be too slightly differentiated for its recognition to be warranted. It is, however, of some interest as it suggests that in Semirechia the population is beginning to develop characters of its own, but these do not approach in any way the characters of the indicus group. I now follow the Russian authors, who have more material from Semirechia than I do, in synonymizing semiretschiensis with nominate domesticus.
Von Jordans separated *balearoibericus* on the basis of its being paler and smaller than nominate *domesticus*, and it has been said that this form has a larger bill. I cannot see any constant differences. The measurements given by von Jordans himself, 73–81 in *balearoibericus* as against 75–84 in nominate *domesticus*, show a great deal of overlap. The best that can be said is that the birds of the Balearic Islands average somewhat paler, but the difference is trivial.

Keve described *baicalicus* as grayer and larger than nominate *domesticus*. The birds of Siberia tend to be paler and grayer than those of western Europe, but the difference is extremely slight and not of taxonomic importance. There are no differences in size. According to Keve his eight males of *baicalicus* have a wing length of 79–83 [the average is 80.4], but these measurements are identical or virtually so with the series of 20 males that I mentioned above from continental Europe with a wing length of 77–83 (80.3). Topotypical nominate *domesticus* is large, Meinertzhagen (1947, Bull. Brit. Ornith. Club, vol. 68, p. 24) stating that in 36 males that he has measured from Sweden the wing length is 77–83 and ranges up to 85 in Finland.

Meise (*loc. cit.*) states that the population of Crete varies individually but is not separable from *italiae*. My specimens from Crete show the same range of variation as exists in specimens from Italy, and I agree with Meise that *schiebeli* is not valid. Meinertzhagen has described as *halfae* the very variable population from Wadi Halfa which was mentioned above in the general discussion. Several authors have already questioned whether this population is really separable from *niloticus*. Taken as a series, the specimens that I have examined from Wadi Halfa are closer to *niloticus* than they are to *rufidorsalis*, and it is best to consider *halfae* as a synonym of *niloticus*.

Ripley has separated the population of Ceylon as *soror*, stating that it is smaller than *indicus*, with a shorter wing and tail, but I consider *soror* to be a synonym of *indicus*, because the measurements that I have taken and those given by Whistler show that there is only an extremely slight average difference in the wing length. Ripley states that in his material six males from Ceylon have a wing length of 70.5–73.5 (72.3) and a tail length of 49–53 (51.3) as against, respectively, 75–78.5 (76.6) and 54–57 (55.5) in three from southern India, and 74–78 (75.5) and 55–57 (55.7) in four from Burma. As stated above in the general discussion, 20 males that I have measured from central and southern India have a wing length of 70–78 (73.8). These have a tail length of 45–55 (50). Whistler (1936, Jour. Bombay Nat. Hist. Soc., vol. 38, p. 511) gives the measurements of 10 males from southern India as 72–78 and 49–55.5;
and in 1944 (Spolia Zeylanica, vol. 23, p. 189) of five from Ceylon as 74–75.5 and 53–54.5. In the only two males available to me from Ceylon the wing measures 72.5 and 74 and the tail 51, 51+. In the specimen that Jardine himself has labeled as the type of indicus, the wing measures 74 and the tail 50.

The validity of two of the 12 races that I recognize has been questioned. Bates (1936, Ibis, p. 545) believes that hufufae Ticehurst and Cheesman, 1924, type locality, Hufuf, eastern Arabia, was based on specimens that were not in comparative plumage and that this form is not separable from indicus. Paludan (1938, Jour. Ornith., vol. 86, pp. 593–594) believes that persicus Zarudny and Kudaschev, 1916, type locality, southwestern Iran, is a synonym of biblicus Hartert, 1904, type locality, Palestine. Paludan's comparative material was very restricted, and after examining a very large amount of material I came to the conclusion (1949, loc. cit.) that persicus is valid, though it must be admitted that it is not one of the better-differentiated races. Paratypes of hufufae compared by me to specimens of indicus in comparative plumage show that hufufae is not only valid but one of the better-differentiated races.

Passer hispaniolensis

The large series of the Spanish Sparrow examined shows that only two subspecies are valid: nominate hispaniolensis Temminck, 1820, type locality Algeciras, Spain, in the western half of the range, and transcaspicus Tschusi, 1902, type locality, Iolotan, Transcaspia, in the eastern half. The two cannot be separated with certainty in worn breeding plumage, but in fresh fall or winter plumage, transcaspicus is paler, the difference being most clear cut in females. Other subspecies have been described, but the only one still recognized by Hartert and Steinbacher (1932, Die Vögel der palaärtischen Fauna, suppl. vol., p. 83) is arrigonii Tschusi, 1903, type locality, Sardinia, although Hartert (1904, Die Vögel der palaärtischen Fauna, p. 157) had previously cast some doubt on its validity, accepting it only halfheartedly and stating that it differed merely by being somewhat smaller. The population of the Canary Islands was also separated by Tschusi as canariensis in 1915. This form which is not mentioned in "Die Vögel der palaärtischen Fauna," was separated on color differences that other authors have been unable to confirm. Volsøe (1951, Vidensk. Medd. fra Dansk Naturhist. For., vol. 113, pp. 118–119) does not recognize canariensis but believes that the birds of the Canaries may be slightly smaller than those of the continent, adding, however, that comparative measurements did not seem to be available.

In the specimens I have measured, the difference in size between birds...
from Spain, Sardinia, and the Canaries is one of average only and much too slight to warrant the recognition of *arrigonii* or *canariensis*. The wing length of adult males is as follows: Spain, 14 specimens, 78–83 (79.5); Sardinia, 23 specimens, 76–81 (78.3); Canaries, 10 specimens, 76–80 (77.5). Most of the individual measurements overlap, and I cannot see any color differences between the three populations.

*Passer ammodendri*

The Saxaul Sparrow is currently divided into three subspecies, but it seems to me that four should be recognized, namely: nominate *ammodendri* Gould, 1872, type locality, Djulek above Kzyl Orda on the Syr Darya; *stoliczkae* Hume, 1874, type locality, 4 miles east of Kashgar, Sinkiang; *timidus* Sharpe, 1888, type locality, the Gobi, and *korejewi* Zarudny and Härms, 1902, type locality, “eastern part of Transcaspia, between the foothills of the Paropamisus and the Amu Darya.” Nominate *ammodendri* and *korejewi* are sandy gray above, while *stoliczkae* is warm sandy buff rather than grayish, nominate *ammodendri* differing from *korejewi* by being streaked on the rump and upper tail coverts.

*Timidus* has hitherto been considered to be invalid and a synonym of *stoliczkae*, but three adult males that I have examined from southern Mongolia differ very clearly from *stoliczkae* (examined from Sinkiang from Khotan and the Niya Darya in the foothills of the Kun Lun) by being more abundantly streaked on the mantle with blacker and wider streaks, by having the dark areas in the wing and tail feathers blacker, and also by having a distinctly thicker, higher, and somewhat longer bill. These specimens leave no doubt that the population of southern Mongolia cannot be called *stoliczkae*. These three males were collected by the Central Asiatic Expeditions of the American Museum of Natural History at Shabarakh Usu (about longitude 103° 40' E., latitude 44° N.) on May 25 and June 2, 1925.

Sharpe (1888, Catalogue of the birds in the British Museum, vol. 12, p. 339), as well as all subsequent authors, quotes the name *timidus* as of Przewalski, 1883, but says he has not seen Przewalski’s description. He was unaware that this name is a *nomen nudum* and that the first publication of *timidus*, accompanied by a description, was actually supplied by Sharpe (*loc. cit.*) who states he had examined a pair of specimens from the “Desert of Gobi.” The description given by Sharpe does not distinguish these specimens in any way from *stoliczkae* but the name *timidus* Sharpe, 1888, is available nevertheless for the population of the Gobi.

Przewalski’s *timidus* (1883, Iz’ Zaisan Cherez Khami v Tibet, Izdanie Imp. Russk. Geogr. Obsht., pp. 70, 94) was not based on specimens from
the Gobi, this name appearing in a list of species observed and presumably collected in eastern Sinkiang at Hami (now Qomul, at about longitude 93° E., latitude 43° N.) and in extreme northwestern Kansu at "Sa Chu" (or about longitude 94° 30' E., latitude 40° N., at the eastern end of the Astin Tagh, south of the Khara Nor and north of Nanhu). The population of these two localities does not necessarily belong to the same form found at Shabarakh Usu, and until further study it seems best to restrict the range of timidus Sharpe to Outer Mongolia, not only because the localities of Przevalski are considerably farther west, but also because Meise (1937, Jour. Ornith., vol. 85, p. 480) has found that the population from Wayen Torrai in northern Inner Mongolia belongs to stoliczkae. Shabarakh Usu is only about 350 kilometers to the north of Wayen Torrai but is separated from it by the Gurban Saikhan Range of the eastern Gobian Altai. In Russian Turkestan, two distinct races (nominate ammodendri and korejewi) are found at localities which are only as far apart as Shabarakh Usu and Wayen Torrai, without being separated by a mountain range.

Passer montanus

The Tree Sparrow varies geographically but, with the exception of a very pale race that inhabits the drier parts of Asia, the variation is relatively slight. This was so stated by Hartert (1904, Die Vögel der paläarktischen Fauna, p. 160) who, in addition to the pale race (dilutus), recognized three others (saturatus, malaccensis, and taivanensis); malaccensis as smaller and more saturated than nominate montanus, and saturatus and taivanensis as differing from the latter by having a larger bill. The variation cannot be expressed quite so simply in the nomenclature, but in the main the remark made by Hartert still holds true, although the unusually large number of races described since it was made gives a totally different impression. These number 26. They are listed first to avoid confusion in the discussion of the variation which follows. References are given for those races not included in "Die Vögel der paläarktischen Fauna" and its supplements, or for those described since. A race described by Zarudny as pallidus but considered to be invalid by Hartert is added to this list.

pallidus Zarudny, 1904, eastern Khorasan
transcaucasicus Buturlin, 1906, Akhalzikh, Transcausasia
iubilaeus Reichenow, 1907, "Caucasus to Tsingtao," the type of which is from Tsingtao, Shantung, according to Hartert and Steinbacher (1932, Die Vögel der paläarktischen Fauna, suppl. vol., p. 84)
orientalis Clark, 1910, Hokkaido and Korea, type locality restricted to Fusan, southern Korea, by Deignan (1952, Condor, vol. 54, p. 171)
zaissanensis Poliakov, 1911, Black Irtysh River, near Zaisan Nor
volgensis Ognev, 1913, Volga Delta
dybowski Domaniewski, 1915, Ussuri River Valley and Korea, restricted below to the Ussuri Valley in Ussuriland
kaibatoi Munsterhjelm, 1916, Kaiba Island off southern Sakhalin
obscurat us Jacobi, 1923, “central China [in] Hupeh and Szechwan” = middle Yangtze; a cotype is from Hsien-lung-tan on the Yangtze rapids
ciscaucasicus Buturlin, 1929, northern Caucasus
kansuensis Stresemann, 1932, northeastern Tsinghai
bokotoensis Yamashina, 1933 (May, Tori, vol. 8, p. 1), Bokoto Island, Pescadores off Formosa
stegmanni Dementiev, 1933 (June 2, Alauda, p. 110), Yakutsk
boetticheri Stachanow, 1933 (after June, K6csag, vol. 6, p. 31), 120 kilometers on the Lena below Yakutsk
pallidissimus Stachanow, 1933 (end of, perhaps 1934, L'Oiseau, p. 789), eastern Zaidam, northern Tsinghai
gobiensis Stachanow, 1933 (L'Oiseau, p. 790), “southern Gobi” [= Ala Shan]
catellatus Kleinschmidt, 1935 (Falco, Skizzen, no. 2), England; the type is from Sussex, according to Clancey (1948, Bull. Brit. Ornith. Club, vol. 68, p. 137)
sititoi Momiyama, 1940 (Kagakuno nōgyō, vol. 20, p. 5), Seven Islands of Izu
manillensis Hachisuka, 1941, (Tori, vol. 11, p. 88), Manila, Philippines
margaretae Hans Johansen, 1944 (Jour. Ornith., vol. 92, p. 65), ex Zaleski MS, western Siberia

With one perfunctory exception, these 27 forms were proposed with no assessment of the geographical variation prevailing throughout the range of the species. When the variation is studied as a whole, the great majority of the 27 are found to be forms that are much too slightly differentiated to warrant recognition or that are pure synonyms.

The geographical variation follows a simple pattern. Briefly speaking, it is as follows: Clines of increasing size, though very poorly indicated, run from west to east and from south to north, but no separation is possible, as the individual measurements show too much overlap. Lowland populations are small, while those living at high altitudes are large.
Clines follow the rise in altitude, and one altitudinal race (*tibetanus*) is separable. Populations that inhabit arid or drier regions are pale, while those that live in regions of greater precipitation are more saturated. One race (*dilutus*) which consists of a complex of very slightly different forms is separable from nominate *montanus* on the basis of its pale coloration, while another (*malaccensis*) is separable from the latter on a combination of small size and darker coloration. A population hitherto included in the range of *malaccensis* differs sufficiently from it in coloration in being redder to warrant its recognition as a separate race which has been recently described as *hepaticus* by Ripley. The insular populations of the Pacific have a larger bill and are somewhat darker than nominate *montanus* and can be separated as *saturatus*. It seems to me that the geographical variation of the species can be adequately expressed by the recognition of these six races, together with that of four intermediates, three of which are rather poorly differentiated (*transcaucasicus*, *saissanensis*, *kansuensis*, and *iubilaeus*). The 10 races are discussed below.

1. *Passer montanus montanus* Linnaeus, 1758, type locality, northern Italy, with the following synonyms: *volgensis*, *dybowskii*, *ciscaucasicus*, *hispaniae*, *stegmanni*, *boetticheri*, *catellatus*, and *margaretae*. Of these, *volgensis*, *ciscaucasicus*, *dybowskii*, *stegmanni*, and *boetticheri* have been synonymized with nominate *montanus* in the "Birds of the Soviet Union" (1954, vol. 5, p. 357). This work does not mention the other three forms, but *hispaniae* and *catellatus* do not come within its scope, and *margaretae* seems to have been overlooked. I consider that *catellatus* is a synonym of nominate *montanus*. Clancey (loc. cit.) has upheld the validity of *catellatus*, and his arguments seem convincing but only until actual specimens from England and northern Italy are compared. Then it is found that virtually all are identical. The best that can be said is that an occasional specimen from England shows a slight tendency to be darker, but such difference as exists is very trivial, and the official "Check-list of the birds of Great Britain and Ireland" (1952, London, British Ornithologists' Union, p. 98) was eminently justified in rejecting the validity of *catellatus*.

My material from Spain is very insufficient, consisting of only one specimen, but nevertheless I doubt that *hispaniae* is valid. This specimen is identical with nominate *montanus*, and all authors, other than von Jordans, have failed to discern any difference. Pending confirmation it seems to me that *hispaniae* should be synonymized with nominate *montanus*.

The race described by Johansen as *margaretae* is also a synonym of
nominate *montanus*. Johansen described it (adopting a manuscript name for it) because he states that his material from western Siberia is intermediate, males having a wing length of 71–75 as against 67–73 in males of nominate *montanus* and 73–76 in those of *stegmanni*. It is obvious that these measurements show too much overlap to warrant the recognition of *margaretae*. The measurements taken by other authors also show much overlap. According to Dementiev, the type and paratypes of *stegmanni* measure 69.6–74, but these measurements are virtually identical with those of 16 males measured by me from western Russia, Sweden, and northern Italy which have a wing length of 69–75.5. According to Stegmann (1931, Jour. Ornith., vol. 79, pp. 158–159) specimens from northern and central Russia measure 68–71 as against 68–74 in central Siberia, 70–75 in Yakutia, and 66–73 in Transbaicalia. It would seem that a cline of increasing size runs eastward from Russia to Yakutia and is reversed in Transbaicalia. However, this cline is so very poorly indicated that no separation seems possible to me on the basis of size.

Whether or not *stegmanni* (of which *boetticheri* is a pure synonym) is separable from nominate *montanus* by constant differences in coloration or in the size of the bill is unknown to me. In the only adult that I have examined from the Lena the bill is somewhat larger than normal in nominate *montanus* from Europe, and this specimen is also slightly darker, but I presume that the Russian authors with abundant material at their disposal have found that *stegmanni* is not sufficiently distinct or constant to warrant its recognition. I follow their opinion in not recognizing it, as also in not recognizing *volgensis* and *ciscaucasicus*. Specimens of these last two were not examined by me, but they would appear to be, at best, only very vaguely differentiated intermediates.

The authors of “Birds of the Soviet Union” consider that *dybowskii* is also a synonym of nominate *montanus*, and the material that I have examined supports this opinion. It consists of six adults from Ussuriland collected during the winter (three in the region north of Khabarovsk and three from near Vladivostok) and seven collected in the spring at Genzan in northern Korea. The two series are therefore not in comparative plumage, but they are not separable at all from specimens of nominate *montanus* in comparative plumage from Europe. The bill in the two series shows about the same range of individual variation and in this combined material averages slightly thicker and broader at the base than that of typical nominate *montanus* from Europe. But, as emphasized, it is an average difference only and a slight one, because in about one-half or a little less of the specimens from the east the bill is identical in every way with that of nominate *montanus* from Europe. I believe, therefore, that
dybowskii should not be recognized, but if some authors believe that it is desirable to recognize a separate race in the Far East (ranging from Ussuriland to Korea and northern and eastern Manchuria) it can still be called dybowskii despite Deignan's action (loc. cit.) restricting the type locality of orientalis to Fusan in southernmost Korea.

2. *Passer m. saturatus* Stejneger, 1885, type locality, Ryu Kyus = Okinawa, according to Phillips (1947, Auk, p. 126), with the following synonyms: *taivanensis* Hartert, 1904, type locality, Formosa; *orientalis*, *kaibatoi*, *rikuzenica*, *bokotoensis*, and *sitiitoi*. This race is somewhat more richly colored than nominate *montanus* but differs chiefly from it by having a larger bill, thicker, wider at the base, and somewhat longer. Its range, in my opinion, extends from Sakhalin southward through Japan and the Ryu Kyus to Formosa and very probably includes southernmost Korea as well. The forms *rikuzenica* and *sitiitoi* require no comment, as they have been found to be invalid by the "Hand-list of the Japanese birds" (1942, p. 10) and Austin and Kuroda (1953, Bull. Mus. Comp. ZoöL., vol. 109, p. 579.)

According to Austin and Kuroda, a cline of increasing saturation runs southward to the central Ryu Kyus, and, according to Phillips, three races are separable: *taivanensis* from Formosa to the southern Ryu Kyus, *saturatus* from the central Ryu Kyus to Kikai and Amami Oshima, and another race, about the proper name of which Phillips is uncertain, from Tanegashima northward. An unusually large amount of material is available to me (the same material examined by Phillips and a part of the material examined by Austin), but it fails utterly to show any evidence of clinal variation in coloration or size, nor am I able to confirm the geographical pattern in color variation mentioned by Phillips. Specimens from one island may show a slight trend, but it is reversed in specimens from another island, without evidence, as stated, of any over-all geographical pattern. In fact, the variation appears to me to be chiefly, if not exclusively, individual, as specimens in comparative plumage can be matched from all the islands. It is perfectly correct (as stated by Phillips) that the birds of Okinawa have the smallest bill and those

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1 When Domaniewski described dybowskii he made no mention of a type. He merely states "Comme typiques je considère les exemplaires du val du fleuve Ussuri et de la Corée." His material of dybowskii consisted of five specimens—three from Seoul in Korea and two from latitude 48° N. on the Ussuri. I restrict the type locality of dybowskii to this last locality, which is a little to the south of Khabarovsk. In view of the restriction of the type locality of orientalis to Fusan, it is of interest to note that, as stated above, specimens from Genzan are not separable from those of Ussuriland, nor are those of Seoul, according to Domaniewski.
of Hokkaido the largest, but in the measurements below it should be noticed that in a series from Iheya Shima, which is only 20 miles from Okinawa, the bill is identical in size with that of the birds of Hokkaido. It should be further noticed that the bill length is identical in the birds of Okinawa and Formosa. Measurements do not show the difference in shape, and in birds from Formosa the bill tends to be slightly higher than in any other population from the range of *saturatus*, as defined above, but it is a trend only and is shown by less than half of the specimens. I believe that the individual measurements given below will show that these overlap entirely too much and that the differences in averages are very much too slight to warrant the separation of any subspecies.

The population of Korea is discussed above under nominate *montanus*, but specimens from southernmost Korea were not available to me. This population appears to have a large bill (judging by the statements made by Deignan when he restricted the type locality of *orientalis* to Fusan), but before a separate race is accepted for this region alone it should be compared to the insular populations discussed above. Its bill characters (shape and length) may fall within the range of variation of the insular population, or may be intermediate between the bill characters of the latter and those of nominate *montanus*. At any rate, the difference in bill characters between the latter and *saturatus* does not seem sufficient to me to permit the nomenclatural recognition of an intermediate, and I consider that *orientalis* is best synonymized with *saturatus*.

In *saturatus*, as shown by specimens from Okinawa, or other islands in the Ryu Kyus, the subspecific characters differentiating it from nominate *montanus* (a larger, wider, and thicker bill) are clearly shown at all stages of maturity, in specimens in juvenal plumage and even in very young birds barely out of the nest.

Specimens from Bokoto Island [or Hoko Island] in the Pescadores are not available. The population of this island has been separated from *taivanensis* and *saturatus* as *bokotoensis* on color differences, but the characters described seem to fall within the range of individual variation of *saturatus*. Until its validity can be confirmed, it seems best to regard *bokotoensis* as a synonym of *saturatus*.

Measurements of adult *saturatus*: Hokkaido, five specimens, wing, 69–72 (70.2); bill, 13.5, 14, 15, 15, 15.5 (14.6). Hondo, four specimens, wing, 67–71 (69); bill, 14, 14, 15, 15.5 (14.6). Tanegashima, 13 specimens, wing, 66–74 (70.1); bill, 14, 14, 14, 14.5, 14.5, 14.5, 14.5, 15, 15, 15.5, 16 (14.6). Central Ryu Kyus, Kikai Shima, wing, 67–69+ (molt); bill, 14, 14, 15 (14.4). Central Ryu Kyus, Iheya Shima, six specimens, wing, 69–73 (70.8); bill, 14, 14, 14.5, 14.5 14.5 14.5, 15.5

3. *Passer m. dilutus* Richmond, 1896, type locality, Kashgar, Chinese Turkestan, with the following synonyms: *pallidus, gobiensis, pallidissimus,* and *tokunagai.* This race is conspicuously paler than nominate *montanus* or *saturatus* and the best differentiated of all the subspecies. It inhabits the drier regions of Asia from northeastern Iran eastward through Russian Turkestan, Chinese Turkestan, Outer Mongolia, and Inner Mongolia to Jehol and neighboring northern Hopeh.

Of the four names listed as synonyms, *pallidus* and *tokunagai* represent very slightly differentiated forms inhabiting regions of greater precipitation—*pallidus* at the western end of the range, and *tokunagai* at the eastern end. They are not quite so pale and sandy and are somewhat grayer on the rump than typical *dilutus* from Chinese Turkestan, *tokunagai* differing from *pallidus* only by having a slightly darker crown. No specimens from Jehol (the type locality of *tokunagai*), were available, but specimens examined from Peking in neighboring northern Hopeh match the very fine color plate of this form given by Kuroda and Yamashima in the paper in which they described it.

Specimens of the two races described by Stachanow as *gobiensis* and *pallidissimus* were not available either, but a good clue as to the characters of these forms is given by Stegmann in some remarks quoted by Stresemann (1932, Ornith. Monatsber., vol. 40, p. 55) in his description of *kansuensis.* From these remarks about the very populations described later by Stachanow it seems clear to me that *gobiensis* is not separable at all from *dilutus,* while *pallidissimus* from the Zaidam seems much too slightly differentiated to warrant its recognition. According to the remarks of Stegmann, this last population differs scarcely from *dilutus* in coloration, but Stegmann believes it is larger and states that its wing length is 73–78 in seven specimens. However, the measurements given by Stachanow in the description of *pallidissimus* do not show a clear-cut difference because he found that in the latter the wing measures 72.8—
80.6 as against 69.0–76.0 in dilutus. The specimens that I have measured from Chinese Turkestan have a wing length of 72–75 and some are reported from this region with one of 77. For additional measurements and details on dilutus and pallidus, see my earlier paper (1949, Amer. Mus. Novitates, no. 1406, pp. 22–26).

4. *Passer m. tibetanus* Baker, 1925, type locality, Tibet, with maximus as a synonym. This race is darker than dilutus and larger, being in fact the largest of all the subspecies. It ranges from Tibet and the Himalayas (above 9000 feet) eastward to Sikang, north to southern Tsinghai, grading into malaccensis at lower elevations in the Himalayas, and probably into kansuensis in eastern Tsinghai. In Tibet its wing length ranges from 74 to 82. When Schäfer described maximus, or later when he discussed it again (1939, Proc. Acad. Nat. Sci. Philadelphia, vol. 90, p. 244) he made no mention of tibetanus, of the existence of which he may have been unaware. He compared it only to kansuensis and obscuratus. Specimens of maximus were not available to me, but the color characters indicated for this form by Schäfer do not distinguish it with certainty from tibetanus, and, while there is no question that maximus is a large form, its measurements, given as 74–84 by Schäfer, are virtually identical with those of tibetanus, with which I believe it should be synonymized.

5. *Passer m. malaccensis* Dubois, 1885, type locality, Malacca, with manillensis as a synonym. This race is darker, more richly colored, and in its typical form is smaller than nominate montanus, 13 specimens from the southern Malay Peninsula and northern Sumatra having a wing length of 64–69 (66.4) as against 68–73 (70.5) in eight from northern Italy. It ranges from the lower Himalayas, Assam, Indo-Chinese countries, Yunnan, Hainan, and the Malay Peninsula to Sumatra, Java, and Bali, and has spread to, or has been introduced in, Celebes, Borneo, and the Philippines. Those introduced in the Philippines have been described as manillensis by Hachisuka, but they do not differ from typical malaccensis.

The populations examined show some evidence of geographical variation. Birds from Hainan are larger than typical malaccensis from the Malay Peninsula and Sumatra (15 birds from Hainan having a wing length of 65–73, average 69.2) and also differ from it by having a larger bill, intermediate between that of typical malaccensis and that of saturatus from Formosa, and they are also somewhat darker and more heavily streaked. The population of Hainan is thus fairly distinct, but it is not desirable to separate it from malaccensis. It is connected to it by forms on the mainland with intermediate characters. For instance, in Annam and Tonkin the birds are similar in their coloration to those of Hainan but their bill is somewhat smaller. In eastern and northeastern Burma
the birds are virtually as large as those of Hainan (six specimens measuring 68–71, average 68.9), but their bill is similar to that of typical malaccensis, and their coloration is about intermediate between the latter and the birds of Hainan.

6. *Passer m. hepaticus* Ripley, 1948, type locality, northeastern Assam. This race is similar in size to typical malaccensis but more saturated—browner below and distinctly more reddish above. It is the darkest race of the species. One specimen from Margherita showing these characters is identical with three from the upper Chindwin River in northwestern Burma.

7–10. The four races considered here (transcaucasicus, zaissanensis, kansuensis, and iubilaeus) are intermediate to a varying degree between nominate montanus, saturatus, and dilutus, but with the exception of transcaucasicus are not very well characterized. The latter, which ranges from Transcaucasia eastward through Azerbaijan and the northern districts of Iran to the region of Gurgan at the southeastern corner of the Caspian, is quite similar to nominate montanus but duller and grayer above, less rufous, and is paler below, particularly on the abdomen which is distinctly whiter. Zaissanensis is synonymized with pallidus [= dilutus, see above] in the “Birds of the Soviet Union” (torn. cit., p. 364), but zaissanensis appears to me to be an intermediate between nominate montanus and dilutus. Specimens from Zaisan Nor are not available to me, and it is possible that this form is not sufficiently distinct to warrant being recognized. It is recognized, however, by Kozlova (1933, Ibis, p. 72) who states that it is darker and more heavily streaked above than dilutus and that its range extends eastward to Khangai and the Lacustrine Depression in Mongolia. Two paratypes of kansuensis and two other specimens collected also by Beick in near-by Kansu show that this race is nearest to dilutus but generally darker, especially on the rump. It is intermediate between dilutus and iubilaeus (synonyms, obscurata and shansiensis), which is itself an intermediate race approaching saturatus.

The populations of China vary geographically. They are very pale in northern Hopeh (see dilutus) but darker in Shantung, slightly darker and somewhat more richly colored in Shensi (Tsingling Range) than in Shantung, and still darker in Szechwan and along the middle Yangtze. These last populations from Szechwan and the Yangtze have also a somewhat larger bill which is not so large, however, as in saturatus. The variation appears to be clinal in character but is relatively slight, and in my opinion the population of Shantung is not sufficiently distinct from that of Szechwan and that of the Yangtze to warrant the recognition of two subspecies, particularly as that of Shensi is intermediate. The oldest
name available for these populations is *iubilaeus* Reichenow, 1907, type locality, Shantung. The populations of China are usually referred to *saturatus* but even in Szechwan and on the Yangtze are separable, I believe, from this race. Specimens from southeastern China were not available. One was examined from Yunnan, but it was collected in the northwest at Paoshan not far from Burma and is not separable from *malaccensis*. The population of southern Yunnan belongs also to *malaccensis* according to Rothschild (1926, Novitates Zool., vol. 33, p. 328).

**Passer rutilans**

Two races of the Cinnamon Sparrow are usually recognized in northern India and southern Tibet: a smaller one in the west, *cinnamomeus* Gould, 1835, type locality, northwestern Himalayas\(^1\) of which *debilis* Hartert, 1904, type locality, Kashmir, is a synonym; and *schaeferi* Stresemann, (1939, Ornith. Monatsber., vol. 47, p. 176, type locality, Shigatse, southern Tibet) in the eastern Himalayas and neighboring Tibet. The measurements from both ends of the Himalayas published in the literature show a certain amount of overlap, but Stresemann explains this by stating that he believes that the range of the smaller form is not restricted to the west but follows the subtropical zone of the Himalayas, this form being replaced by the larger one at higher altitudes in northern Bhutan and southern Tibet. In 1949 (Amer. Mus. Novitates, no. 1406, pp. 26–27) I recognized these two races, because the 15 males that I had measured from the western Himalayas had a wing length of 71–75 (72.67) as against 77–82 (78.5) in the 19 of *schaeferi* measured by Stresemann. Additional specimens that I have measured, as well as the measurements published by Kinnear (1944, Ibis, p. 359), show, however, that there is a good deal of overlap. My additional specimens are from northern Punjab in the west, and these, together with the specimens from the same region reported in 1949, have a wing length in males of 71, 72, 72, 72, 72.5, 72.5, 73, 73, 73, 73, 74, 75, 76, 76 (73.2). These measurements are still clearly smaller than those of Stresemann, but Kinnear states that his nine males from the Tsangpo Valley in Tibet

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\(^1\) The only type locality mentioned by Gould is “apud montes Himalayenses,” and Hartert (1904, Die Vögel der palaarktischen Fauna, p. 162) created difficulties by restricting it to Bhutan. However, as Ticehurst (1927, Jour. Bombay Nat. Hist. Soc., vol. 32, p. 347) has shown, the measurement of the wing length of the type is typical of that of the population of the northwestern Himalayas, and, as he says, “Gould described the bird in 1835 at a date when no specimens of birds had been received from Bhutan and so his bird could never have come thence.” Ticehurst believes it came from the northwestern Himalayas, and I accept this as the correct restricted type locality.
measure 73–80 and that three of them have wing lengths of only 73, 74, 74. While there is no doubt therefore that the birds of Tibet average larger, their measurements and those of the northwestern Himalayas overlap too much to warrant the recognition of *schaefleri*. To recognize such a slightly differentiated form would be misleading, because the other races are so clearly differentiated.

These races are two: *intensior* Rothschild, 1922, type locality, “Mekong Valley” (the type is from latitude 28° N. in extreme northern Yunnan) with *lisarum* Stresemann (1940, Mitt. Zool. Mus. Berlin, vol. 24, p. 172, type locality, Mt. Victoria, Chin Hills) as a synonym; and nominate *rutilans* Temminck, 1829, type locality, Japan, with *kikuchii* Kuroda, 1924, type locality, Formosa; and *ignoratus* Deignan (1948, Proc. Biol. Soc. Washington, vol. 61, p. 16, type locality, Mt. Omei, Szechwan) as synonyms. *Intensior* differs from *cinnamomeus* by being distinctly more saturated throughout, and more heavily streaked on the mantle, the difference being very sharp in the females, while nominate *rutilans* lacks the yellow pigments of *intensior* and *cinnamomeus*.

Mayr (1941, Ibis, p. 362) has already remarked that the validity of *lisarum* appears to be very doubtful. This form was described by Stresemann as smaller than *intensior* and yellower, less whitish, below in females than in those of *debilis*. It seems to me, however, that *lisarum* is best compared to *intensior* in coloration, judging by the fact that Ticehurst (1927, Jour. Bombay Nat. Hist. Soc., vol. 32, p. 347) found that the birds of Burma, including those of the Chin Hills, are equally as dark as those of Yunnan. No specimens from the Chin Hills are available to me, but the color difference noted by Stresemann seems to require confirmation, because in the females of *intensior* that I have examined, which were collected during the same season as the specimens described as *lisarum*, some are more yellowish than others. In view of the fact, also, that in my specimens of *intensior* the wing length is identical or very similar to that of the measurements of *lisarum* given by Stresemann (“68–71 in six males and 67–71 in three females”), I agree with Mayr that the validity of *lisarum* is dubious. Pending confirmation of color differences I regard it as a synonym of *intensior*. In my specimens from northern Burma and northern Yunnan, which are identical in coloration, the wing length measures 68–75 in 25 males and 67–71 in 11 females.

Kuroda based *kikuchii* on two males and one female which he says were “decidedly” paler and less streaked above and had more slender bills than the birds of Japan. The material that I have examined, 12 males and four females from Formosa, shows exactly the same range of individual variation in coloration or bill characters as in a series from Japan consisting of seven males and four females.
Deignan has separated the population of Szechwan as *ignoratus* on characters of the adult male which he says are intermediate between those of nominate *rutilans* and of *intensior*. He states that his material of the new form consists of 13 specimens from various localities, among which are Chengtu and Wanhsien. Two males examined by me from Chengtu in the west and four from Wanhsien in the east do not confirm at all the diagnosis of *ignoratus* and are not separable from nominate *rutilans*, so I believe that the population of Szechwan requires further study. Until then I consider *ignoratus* a synonym.

*Passer simplex*

Three races of the Desert Sparrow are recognized, two of which are African. These two are *saharae* Erlanger, 1899, type locality, Tunisian Sahara, and nominate *simplex* Lichtenstein, 1823, type locality, Ambukol, Sudan. The first is paler and its range is said to include the Aïr and Ennedi Massifs in the southern Sahara. Comparison of two series from the Aïr (reported as *saharae* by Hartert in 1921, Novitates Zool., vol. 28, p. 133, and 1924, *ibid.*, vol. 31, p. 44) with specimens from the northern Sahara (El Goléa north to about Touggourt and from north of Ghadamès) shows, however, that the birds of the Aïr are, in fact, intermediate in coloration but closer on the whole to nominate *simplex*. Males are darker gray above than in *saharae* but less ashy than in nominate *simplex*, creamy below as in the latter, less whitish than in *saharae*. The females are more brownish above and less whitish below, more "pinkish" in tinge than in *saharae*, but not so dark as in nominate *simplex*.

I believe the population of the Aïr is best referred to nominate *simplex*, and probably that of the Ennedi also. I examined none from this last region, but Niethammer (1955, Bonner Zool. Beitr., vol. 6, p. 77) believes that his birds from the Ennedi may approach nominate *simplex*. It is not clear whether he has examined the latter, but the characters of his specimens suggest that the birds of the Ennedi are closer to nominate *simplex*. Only one old pair of nominate *simplex* has been examined by me. It is apparently very rare in collections and does not seem to have been reported since the time of Heuglin in 1868.

In Asia the two African races are represented by *zarudnyi* Pleske, 1896, type locality, Transcaspia. *Zarudnyi* breeds in Kirman in eastern Iran, according to Zarudny, and in eastern Transcaspia between the oases of Merv and Chardzhou. It is paler, whiter below, and purer gray above than the African races and differs also by having a more grayish rump, a blacker facial mask, and a smaller, more globular bill. It is very well differentiated.
Passer griseus

The Gray Sparrow is an Ethiopian species which reaches the northern limits of its range in the Aïr and Ennedi. It has been divided into many races, and Niethammer (1955, ibid., vol. 6, pp. 75–76) has recently described the birds from these two regions, and those from the shores of Lake Chad, as laeneni, type locality, Bol, eastern Lake Chad. He states that the new race is distinctly paler throughout than nominate griseus Vieillot, 1817, type locality, “Etats Unis” (but error for Senegal). Specimens from the Ennedi or Lake Chad were not available, but a series of 13 specimens from the Aïr and from Zinder and the region of Kano in near-by northern Nigeria that I have examined are clearly paler indeed than a long series from Senegal.

The specimens from Zinder and Kano, which are identical with those of the Aïr, show that the range of laeneni extends farther south and west than suspected by Niethammer, and I believe it probably extends as far west as Tombouctou. Paludan (1936, Vidensk. Medd. Dansk Naturhist. For., vol. 100, pp. 330–331) found that his specimens from Tombouctou were conspicuously paler than some from Dakar but refrained from describing them as a new subspecies because he states that his material from West Africa was too restricted for him to judge whether or not the difference might not be seasonal or individual. The specimens in comparative plumage examined by me show, however, that the difference is geographical and constant.

Petronia xanthocollis

When I first discussed the Yellow-throated Sparrow (1949, Amer. Mus. Novitates, no. 1406, pp. 5–8) I recognized three races: nominate xanthocollis Burton, 1838, type locality, Bengal, with range India and eastern Afghanistan; transfuga Hartert, 1904, type locality, Persian Baluchistan, from Sind to southeastern Iran; and occidentalis Koelz (1948, Auk, p. 445, type locality, Bakhtiari) in southern and southwestern Iran. A cline of decreasing saturation running from east to west was shown by the material examined, consisting of specimens from India, Afghanistan, and Iran, but specimens from Iraq, which represents the western end of the range of the species, were not available to me then and are not now. In view of the fact that the population of Iraq was found to be identical with topotypical transfuga by Ticehurst (1923, Jour. Bombay Nat. Hist. Soc., vol. 28, p. 230) and also for the reasons stated below, I believe now that it would be misleading to recognize occidentalis, which I think should be synonymized with transfuga. Upon reexamination I find that the cline
is not so gradual as I intimated in 1949. *Occidentalis* and *transfuga* are both sandy in general coloration, with pale upper wing coverts, and differ only in a matter of degree, whereas the cline is stepped between *transfuga* and nominate *xanthocollis*, the latter being earth brown, not sandy, and has much darker chestnut wing coverts. The differences in bill characters were very slight, as shown by my measurements, and are also too inconstant to be of taxonomic importance.

**Petronia petronia**

Geographical variation in the Rock Sparrow is slight or relatively slight, and it seems to me that this species has been split into far too many subspecies. Sixteen forms must be considered, but it seems quite sufficient to recognize only about half this number. The forms I recognize are the following:

1. *Petronia p. madeirensis* Erlanger, 1899, type locality, Madeira. This race is restricted to Madeira and the Canaries, and these two populations are identical. It is not well differentiated but is somewhat darker than nominate *petronia*. The difference is best shown on the rump and on the center of the crown but is slight. *Madeirensis* is said to be smaller, but this is not confirmed by the specimens I have measured, the wing length in adult males being 93–100 (95.75) in eight from northern Italy, 92–100 (96) in eight from Madeira, and 94–98 (96.2) in five from the Canaries.

2. *Petronia p. petronia* Linnaeus, 1766, type locality, northern Italy, with the following synonyms: *macrorhynchos* C. L. Brehm, 1855, type locality, Greece; *hellmayri* Arrigoni, 1902, type locality, Sardinia; and *balearica* von Jordans, 1923, type locality, Mallorca. The birds of the Balearic Islands average slightly paler, and those of Sardinia and Corsica average slightly darker, than nominate *petronia*, but the differences are average only and very much too slight and inconstant to warrant the recognition of either *balearica* or *hellmayri*. Some authors recognize *macrorhynchos* as a form paler than nominate *petronia*, with larger white spots at the tip of the tail and with a longer bill. Only two specimens were examined, one of which is the type, and they do not differ from nominate *petronia* in similar plumage in either coloration or in the size of the spots. The bill of these two specimens is longer than normal in nominate *petronia*, but the length of the bill in the type falls within the range of individual variation of specimens from northern Italy. The average difference in the length of the bill does not warrant separation, and I consider *macrorhynchos* invalid, a conclusion already reached by Ticehurst and Whistler (1932, *Ibis*, p. 48).

3. *Petronia p. barbara* Erlanger, 1899, type locality, Tunisia. This
race is paler and grayer above than nominate *petronia* and has a larger bill. All the populations of northwestern Africa from Tripolitania to Morocco are usually referred to it. A cline of increasing saturation runs from east to west, however, and it is only in the eastern part of the range that this race is well differentiated. At the western end of the range, the population of Morocco is too dark to be called *barbara*, has a smaller bill, and is best called nominate *petronia*, as it was done by Hartert and Steinbacher (1932, Die Vögel der paläarktischen Fauna, suppl. vol., p. 76).

4. *Petronia* *p.* *puteicola* Festa, 1894, type locality, Palestine. This race, which is restricted to the Near East from Damascus to Petra, is (together with *brevirostris*) the only race that is really well differentiated. It is very pale above, the palest race of all, with a warm sandy coloration and has a very large bill, the largest of any race.

5. *Petronia* *p.* *exigua* Hellmayr, 1902, type locality, Rostov on the Don. This race, which ranges from the northern Caucasus to northwestern and northern Iran and perhaps eastern Asia Minor, is very similar to typical *barbara* from Tunisia, pale and gray in coloration. It differs from it only slightly, the streaks on its mantle being a little blacker and the lateral stripes of the crown somewhat less distinct, and its bill averages slightly smaller.

6. *Petronia* *p.* *intermedia* Hartert, 1901, type locality, Gilgit, with the following synonyms: *kirhizica* Sushkin, 1925, type locality, Kirghiz Steppes; and *härmsi* Keve (1948, Bull. Brit. Ornith. Club, vol. 68, p. 130), type locality, eastern Iran. This is another poorly differentiated race. It is about intermediate in coloration and bill characters between nominate *petronia* and *puteicola* and similar in size to the latter, 25 males from Iran having a wing length of 97–106 (102) and the seven male paratypes from Turkestan and Gilgit one of 99–105 (102), as against 98–105 (104) in five males of *puteicola* and 93–100 (95.7) in eight male topotypes of nominate *petronia*. This intermediate race occupies a very large range extending from the western Kirghiz Steppes, Iran (with the exception of the northwest and Caspian districts occupied by *exigua*), and Transcaspia to Afghanistan, Turkestan, and Gilgit.

Specimens from the Kirghiz Steppes were not available to me, and this population has been separated from *intermedia* by Sushkin as *kirhizica* which he says is paler, but this form is not recognized and is synonymized with *intermedia* by the authors of “Birds of the Soviet Union” (1954, vol. 5, p. 320).

I believe that *härmsi* also should be synonymized with *intermedia*. It was separated from *intermedia* by Keve as being smaller (wing of four males, 92–98, and of two females, 93, 93) and also on some color differ-
ences. The color differences are not shown by my extensive comparative material, and in view of the fact that Keve states that in his specimens "the yellow spot on the chest is small or almost absent," a character associated with immaturity, it is possible that his birds were not fully adult. In eight specimens of both sexes of *intermedia* that I have measured, which were not fully adult, as they had no yellow spot or only a small one, the wing length measures 93–96 (94.5). My comparative material of *intermedia* consists of about 100 specimens, 60 of which are from Iran, including eastern Iran.


This race is well differentiated, *brevirostris* differing from all the other races by having a shorter and thicker bill and by having more diffuse markings on the crown as well as on the mantle. My material of it is scanty and consists of three specimens of *urgensis* and seven of *tibetana*, but these are not separable in any way. The size and shape of the bill, the wing length, and, in specimens in comparative plumage, the coloration as well are all identical. *Urgensis* and *mongolica* are said to be synonyms of *brevirostris* in the "Birds of the Soviet Union" (tom. cit., p. 325), and, as I find that *urgensis* and *tibetana* are identical, it follows that the latter must be added to the synonyms. It may seem drastic to do so without comparing it to topotypical *brevirostris*, but the validity of *tibetana* has never really been confirmed. Jacobi had but one specimen of *brevirostris* when he separated *tibetana* from it, and, while it is true that Sushkin states that *tibetana* is valid, his own races have been questioned. It would seem that independent confirmation is required. It was not offered by Meise (1937, *Jour. Ornith.*, vol. 85, p. 478), because he recognized *tibetana* without comparing it to *brevirostris*, or, at least he does not mention *brevirostris*.

*Jyekundensis* has not been examined by me. It was separated from *tibetana* by Schäfer on the ground that it was much larger, with "wing length of males 99–108 as against 92–99 in males from Kansu, and 91–98 in males from Sikang." These measurements from Sikang are quoted from Jacobi, but Jacobi's series consisted of three males and three females, some of which were not adult as shown by one specimen, an im-
mature female, which I have examined from this series. Furthermore Jacobi's specimens were not collected in southern Sikang as stated by Schäfer but in the same region from whence Schäfer described jyekundensis, the actual type localities of tibetana and that of jyekundensis being about 70 miles apart. The males from Kansu mentioned by Schäfer measure 94–100 according to Meise (loc. cit.). The measurement of 108 given by Schäfer is very large, but it is misleading because it is that of an abnormal specimen, Schäfer remarking upon it and saying that in this specimen the wing "is extraordinarily long." He gave no individual measurements, but it is clear that this specimen is considerably larger than the others. If this specimen is excepted, the measurements of jyekundensis are seen to approach those of tibetana and in fact to show a certain amount of overlap, as shown by the measurements given by Meise and also by Sushkin who states that 13 specimens of tibetana of both sexes measure 96–101. In the 10 specimens that I have examined, four are males, two tibetana measuring 99, 100+, and two ursensis 99, 101. In view of the fact that individual measurements were not given by Schäfer, Meise, or Sushkin, the degree of overlap cannot be ascertained, but it is evident that jyekundensis is at best a very ill-defined race, and I think it is probably best not to recognize it.

In summary, I should like to emphasize that the only races of the species that are well differentiated throughout their ranges are nominate petronia, puteicola, and brevirostris; the African barbara is well differentiated also, but only at the eastern end of its range and through parallel adaptation this race and exiguia, from the distant Caucasus and northern Iran, have become very similar.

Montifringilla nivalis

Some of the snow finches were studied by Stegmann (1932, Jour. Ornith., vol. 80, pp. 99–105) in a paper in which he showed that nivalis and adamsi are separate species and in which he discussed their geographical variation as well as that of other species. In the Snow Finch (nivalis) he recognized five subspecies but emphasized that one of these with the barbaric name of grom-grzimaili (for citations and type localities see below) was not well differentiated and distinguishable only in series. Kozlova (1933, Ibis, p. 70), speaking of this form, states "the race grom-grzimaili cannot be considered a very good one, and is distinguishable only in a large series ... [as being] a trifle lighter ... and slightly greyer ... on the upper parts than birds [alpicola] from the Caucasus, Northern Persia, and Pamir." When I had the occasion (1949, Amer. Mus. Novitates, no. 1406, pp. 27–29) to discuss some of
the populations of this species, I recognized *groum-grzimaili* but emphasized that it differed only very slightly from *gaddi*, which I believed was valid, although this latter had been universally considered to be indistinguishable from *alpicola*. I stated that *gaddi* and *groum-grzimaili* were "hard to distinguish," but that my specimens of *gaddi* were paler and less gray than *alpicola* and that those of *groum-grzimaili* showed a little less white on the inner primaries and had slightly larger black spots at the tips of the rectrices than the specimens of *gaddi*. The material that I believed represented *groum-grzimaili* consisted of six adults from Naryn in the central Tian Shan, but these should have been called *prosvirowi* based on specimens from the Pamirs, or *tianshanica* based on specimens from Naryn. The latter was described during the last war, and its description did not reach me until after 1949. I overlooked the existence of *prosvirowi*, which Stegmann did not mention.

After studying this material again, I now believe that the population of southwestern Iran (*gaddi*) and that of Naryn (*tianshanica*) are much too slightly differentiated to warrant recognition. Hellmayr (1929, Field Mus. Nat. Hist., zool. ser., vol. 17, p. 50) believes that the birds of Naryn are not separable from typical *alpicola* from the Caucasus and adds "if *groum-grzimaili* is a valid form, it must be restricted to the northeastern range [of the Tian Shan] near the southern border of Dzungaria." I have not examined specimens from Dzungaria or the eastern Tian Shan, but two from southeastern Russian Altai (the population of which is always referred to *groum-grzimaili*) are not separable from *alpicola*. It is probable that the birds become somewhat paler as they range farther east in the Tian Shan, but in view of the remarks made by Stegmann and Kozlova, it is perhaps best not to recognize *groum-grzimaili*. This name, as well as *gaddi* and *prosvirowi*, has already been synonymized with *alpicola* in the "Birds of the Soviet Union" (1954, vol. 5, p. 310), and *tianshanica* should be added to the synonyms. This name was not mentioned in the "Birds of the Soviet Union," probably because, as in my case, its description was not available.

In my opinion, the valid races of *M. nivalis* are as follows:

1. *Montifringilla n. nivalis* Linnaeus, 1766, corrected type locality, Switzerland. This race, which inhabits the Alps, Pyrenees, and mountains of southeastern Europe, differs very distinctly from the following one by having an ashy gray crown that contrasts with the brown back.

2. *Montifringilla n. alpicola* Pallas, 1811, type locality, Caucasus, with the following synonyms: *groum-grzimaili* Zarudny and Loudon (1904, Ornith. Jahrb., p. 215), type locality, Bei Shan, eastern Tian Shan; *gaddi* Zarudny and Loudon (1904, *ibid.*, p. 216, type locality, Zagros in
Luristan, southwestern Iran; *prosvirovi* Zarudny (1917, Izvestia Otd. Russk. Geogr. Obtch., vol. 13, p. 101) type locality, Pamirs; and *tianshanica* Keve (1943, Anz. Akad. Wiss. Wien, vol. 80, p. 20), type locality, Naryn, central Tian Shan. This race, which inhabits the Caucasus and Asia with the exception of the Kun Lun, Astin Tagh, and the Tibetan Plateau, differs from nominate *nivalis* in that the coloration of its crown is similar to that of the back or virtually so, both being brownish, and the crown and back are distinctly paler than in nominate *nivalis*.

3. *Montifringilla n. kwenlunensis* Bianchi, 1908, type locality, western Kun Lun. This is the only locality mentioned by Bianchi (Ann. Mus. Zool., vol. 12, p. 573) when he first proposed this name as that of "a pale form." A more formal and detailed description is given by Bianchi on pages 583 and 586 (*tom. cit.*), but he mentions no locality. These, and not page 573, are the pages that are always given in the citation of *kwenlunensis*. Finally, on page 589, Bianchi states that the range of *kwenlunensis* is "Eastern slopes of Pamirs (Kaskasu Pass, 12,390 feet, on Sarykol Pamir and ? Turgat Pass [Turugart Pass] north of Chakmak) and western Kun Lun (Tokhtakhon; northern slopes of Russian Range)." Hellmayr (*loc. cit.*) has found, however, that the specimens he has examined from Kaskasu and Turugart Pass "are referable" to *alpicola*. It would appear that the range of *kwenlunensis* extends westward only as far as Tokhtakhon [= Takhtqoram, south of Qarghaliq on the northern slopes of the Raskam Range] and that no confusion need arise if Takhtqoram is accepted as the correct type locality and the citation given as of page 573. *Kwenlunensis* is restricted apparently to the Kun Lun and the Astin Tagh.

This race is similar to *alpicola* but distinctly paler, more sandy above, and its bill is somewhat smaller. Its wing length averages somewhat smaller also. Stegmann (*loc. cit.*) states that it is a small race, because his specimens, apparently from the Russian Range of the Astin Tagh, measure 102–117, but in eight adults that I have examined that were collected farther east in the Astin Tagh, south of Lop Nor, the wing length measures 110–120 (114.5). They are not much smaller than *alpicola*, 15 adults of which from the Caucasus and northern Iran measure 111–122 (117).

4. *Montifringilla n. henrici* Oustalet, 1891, type locality, Diti, east of the Tengri Nor, Tibetan Plateau. This race, which inhabits the Tibetan Plateau north of the Buckhan Boda Range in central Tsinghai, was not examined by me. It is apparently very distinct from the others and is said to be earth-brown above, with dark rusty brown streaks on the back,
much less white below, washed with grayish brown on the flanks, belly, and under tail coverts, and with a tinge of rufous on the flanks.

For additional notes on the genus *Montifringilla* and the relationships of its various species, see my 1949 paper cited above.