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Systematic Notes on Palearctic Birds. No. 45 Falconidae: The Genus *Falco* (Part 2)¹

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The present paper consists of reviews of or revisionary notes on six species of falcons: *Falco cherrug*, *F. rusticolus*, *F. altaicus*, *F. subbuteo*, *F. columbarius*, and *F. tinnunculus*. Two other species, *F. peregrinus* and *F. peregrinoides*, were reviewed in a separate paper in the present series.

I would like to express my appreciation to Dr. A. L. Rand and Mr. M. A. Traylor of the Chicago Natural History Museum for the loan of specimens and to Mr. E. Eisenmann, Dr. H. Johansen, and Professor E. Stresemann for reading and criticizing the manuscript.

Falco cherrug

The Saker Falcon breeds from Romania and central Europe eastward through the steppes and forested steppes of Russia and Siberia to about the Yenisei, north to the region of Krasnoyarsk, and then southward through the high mountains and high plateaus of southern Siberia and Outer Mongolia to the mountains of Russian Turkestan south to northeastern Iran and perhaps northern Afghanistan, then eastward through the mountains of Chinese Turkestan and the Tibetan Plateau to the high mountain ranges of the Nan Shan and Ala Shan [= Ho Lan Shan] in Tsinghai, Kansu, and Ningsia in Inner Mongolia. It varies geographically, the populations of Europe and the steppes of Siberia being rather uniform in coloration in the adult plumage, or "primitive" in character when compared to the montane populations of Asia in which the adult plumage is barred to a greater or lesser extent. In the populations of the steppes and

¹ For part 1 of the Falconidae, see American Museum Novitates, no. 2035 (1961).

Europe the adult never acquires a barred plumage and differs only slightly from birds in the juvenal plumage. As this last plumage is not barred in any population, the difference between the adult and juvenal plumage is therefore much more evident in the montane populations of Asia.

The geographical variation has been discussed by Stegmann (1929a, 1937), Dementiev (1947a), who reviewed the species, and Johansen (1957). Dementiev (1947a, 1951) recognized six subspecies, but Stresemann (MS) believes it is sufficient to recognize only three, which are: *cyanopus* Thienemann, 1846, type locality, Bohemia; nominate *cherrug* Gray, 1834, type locality, India; and *milvipes* Jerdon, 1871, type locality, India. Nominate *cherrug* and *milvipes* were based on winter visitors. The type of *milvipes* was collected at Umballa in the Punjab in February, 1867, but the exact type locality of nominate *cherrug* is unknown, and the type seems to be no longer in existence. The three additional subspecies recognized by Dementiev, which are all barred and montane forms are: *hendersoni* Hume, 1871, type locality, Chinese Turkestan; *saceroides* Bianchi, 1907, based on a specimen collected on September 29, 1901, in Ningsia; and *coatsi* Dementiev, 1945, type locality, Kuh i Tang, on the borders of southeastern Turkmenia and Uzbekistan.

This division into six, or even three, subspecies seems unnecessary to me, as it is quite clear that the geographical variation is clinal in character throughout the range of the species and that the uniform and barred populations are connected by some that are intermediate in character. It seems more constructive taxonomically to recognize only two well-differentiated subspecies with different ecological requirements: nominate *cherrug* (synonym, *cyanopus*), which is not barred and very predominantly a lowland form, and *milvipes* (synonyms, *hendersoni*, *saceroides*, and *coatsi*), which is barred and a montane or highland form. This treatment into two subspecies was originally adopted by Hartert (1913–1922). In nominate *cherrug*, the form *cyanopus* represents the darker end of the cline and ranges eastward to about the lower Don and the governments of Voronezh and Penza; *danubialis* Kleinschmidt, 1939, type locality, Bohemia, is a synonym of *cyanopus*; and *aralocaspius* Kleinschmidt, 1939, based on a migrant to Lenkoran on the southwestern coast of the Caspian Sea, is a synonym of nominate *cherrug*.

In *milvipes* (*sensu lato*), the form *saceroides* is intermediate in character between nominate *cherrug* and *milvipes* (*sensu stricto*) and thus connects the two, but *saceroides* is a well-barred montane form much more similar to *milvipes*. The zone of intergradation between nominate *cherrug* and *saceroides* apparently extends from the region of Krasnoyarsk south to the

Abakan and Minusinsk steppes and the foothills of the Sayans, but in the Sayans and Altai the intermediate populations are replaced by *saceroides*. *Milvipes* Jerdon is more distinctly barred and more richly colored than *saceroides*, but less so than *hendersoni*, in which the characters of the *milvipes* group are most highly developed. *Milvipes* Jerdon is thus an intermediate form also, but the name *milvipes* has priority over *hendersoni*; *progressus* Stegmann, 1925, type locality, northern Mongolia, is a synonym of *milvipes* Jerdon. The populations (*coatsi*) ranging from the mountains of Russian Turkestan to Iran, or at the western end of the *milvipes* group, are very interesting, as they show a reduction of the barred pattern. Dementiev (1947a, p. 14) states that, although *coatsi* is well barred, the barring is less regular and does not attain the perfection of *hendersoni*. We see that *coatsi* shows a tendency towards nominate *cherrug*, but it is a montane form and clearly derived from the barred populations of the *milvipes* group, not from the uniform and lowland nominate *cherrug* from which it is isolated by a very wide gap in the drier steppes and deserts of Russian Turkestan where the species does not breed. The ranges of *coatsi* and *hendersoni* are continuous, and the two forms probably grade into each other.

Falco rusticolus

The geographical variation of the Gyrfalcon has been discussed by many authors, with very little agreement concerning the subspecies that can be recognized. Its plumage sequence is complicated, and the individual variation is very great, but the chief complicating factor consists in the fact that in certain regions the birds may present two or three different types of coloration, a white, a gray, or a brown plumage. These populations are said to be dimorphic or trimorphic, or to exhibit color phases, but I prefer to avoid these terms, which seem misleading in this case, as the large series of about 240 specimens that I have seen shows a perfect gradation from one type of coloration to another. Size varies geographically, but, as the range of this variation seems too narrow to be of taxonomic importance, the various "subspecies" (of which it is more or less conventional to recognize four or five) are based on the relative abundance of certain types of coloration in certain regions. However, as many individuals from northern Scandinavia, Iceland, Greenland, North America, and Siberia are identical, it seems illogical and arbitrary to me to call them by four or five different scientific names. I believe it is wiser to explain such geographical variation as exists without resorting to trinomials, and I therefore consider the following to be synonyms of *Falco rusticolus* Linnaeus, 1758, type locality, Sweden: *islandus* Brännich, 1764, type locality, Iceland; *obsoletus* Gmelin, 1788, type locality, Hudson Strait;

candicans Gmelin, 1788, type locality, Greenland; *intermedius* Gloger, 1834, type locality, Urals; *uralensis* Severtzov and Menzbier, 1882, type locality, former gouvernement of Vladimir, central Russia; and *grebnitzkii* Severtzov, 1885, type locality, Bering Island.

The measurements listed below show, I believe, that the differences are too slight in such a large bird to warrant nomenclatural separation. As far as the coloration is concerned, the white type is said to be the only one found on the coast of northeastern Greenland from Scoresby Sound northward, and it predominates on the coast of northwestern Greenland south to the region of Umanak and also in high arctic America from Ellesmere Island south to Baffin Island. The three types are found during the breeding season in low arctic and subarctic Greenland, Ungava, Labrador, Melville Peninsula, Victoria and Banks Islands, the arctic coast of the mainland in western Canada, and Alaska, and probably also in the eastern half of Siberia, where the populations ranging westward to the Lena are said to be equally divided between "white" and "dark" birds. In fact, white birds are found as far west as the Pechora in northeastern Russia and are said to number about 4 per cent of the birds collected between the Lena and Pechora, 4 and 50 per cent representing the two extremes in the ratio of white to dark birds. Among the dark birds, the gray type seems to dominate, but many authors fail to distinguish between gray and brown birds. The white type is not found in Iceland and northwestern Europe, the gray type predominating. White, gray, or brown birds from any part of the range cannot be identified with certainty, although we may note the following trends: young birds in brown plumage from Ungava and Labrador are usually darker, and gray adults from Europe are, on an average, darker on the crown and less conspicuously marked with white on the mantle than gray adults from Iceland and Greenland. However, gray birds from Europe and North America are identical, and, as stated by Hartert (1913-1922, p. 1067), gray adults from Iceland and Greenland are identical. I have seen 10 immature birds in brown plumage from North America, which include three from Labrador and Ungava and one winter visitor to New York. These four are darker, more blackish brown, than the other six from America which can be matched with specimens in the same plumage from Greenland, Iceland, Europe, and Siberia, although one from Europe is virtually as dark as the four dark birds. The fact that the young birds of Labrador have a very dark plumage is well known. Todd and Friedmann (1947), who have seen more birds from Labrador, state: "This plumage phase appears to be confined to Labrador birds, not all of which, however, are of this type," but these authors do not consider this character to be of taxonomic importance. They state ". . . if

we were to keep '*candicans*' (Greenland) and '*obsoletus*' (Labrador) as separate races, we would have to admit that only one plumage out of six of '*obsoletus*' would be identifiable [but not always, see above] and none of '*candicans*.' It seems to us, therefore, better to consider them as one form (for which the name *obsoletus* must be used), explaining that there is a geographical variation in the frequency of white and dark phases and that the darkest immature birds occur only in Labrador." I share the opinion of Todd and Friedmann.

Differences in the wing formula have been used for subspecific separation, for instance, by Friedmann (1950, p. 646) who recognizes *uralensis* and states that it differs from *obsoletus* by having the fourth primary equal to or longer than the outermost instead of shorter. The specimens that I have seen show that this character varies individually throughout the range of the species, although, generally speaking, the outer primary is longest in birds from Iceland and Greenland and shortest in those from eastern North America. Hartert (1920, p. 148) and Dementiev (1931, p. 502; 1939, p. 291) have shown already that the relative length of these feathers is not a subspecific character in the Gyrfalcon, and the validity of *uralensis*, which Friedmann (*loc. cit.*) states ranges from Alaska westward across arctic Eurasia to the gouvernement of Archangel in northern Russia, has been denied by many authors. Bailey (1948, p. 185), working with Alaskan material, states that "All the specimens I have examined prove to be *obsoletus*."

Dementiev (1939, 1951) has recognized *intermedius* (of which *uralensis* is a synonym), not because of the alleged difference in wing formula, but as a race intermediate in coloration between the populations of northwestern Europe and those (*grebnitzkii*) of eastern Siberia from the Lena eastward, that is to say, paler gray than the population of northwestern Europe, slightly darker on an average than *grebnitzkii*, and with fewer individuals of the white type, 4 per cent as against 50 per cent in *grebnitzkii*. However, the gray birds from Siberia are not separable from those of Iceland and Greenland, and, as stated above, I cannot agree that the relative frequency of white birds in any population can be used for subspecific separation. I have seen 11 specimens from Bering and one from neighboring Medny Island which were collected during the winter but probably represent *grebnitzkii*. They were mentioned by Hartert (*loc. cit.*), who quite correctly rejects the validity of *grebnitzkii*, stating: "These birds are indistinguishable from Greenland specimens." Four are white, one is intermediate between white and gray, three are gray, and four are brown.

One could compile a very long list of papers that discuss the geographical variation of the Gyrfalcon, but, in addition to those mentioned, it is

sufficient, I believe, to cite Hartert (1915), Koelz (1929), Krabbe (1934), Salomonsen (1950), and Manning (1956). Salomonsen recognizes two races in Greenland (*candicans* and *obsoletus*) and takes strong exception to the statement made by Hartert (1915, p. 184) that the "dark form" is not restricted to southern Greenland ". . . because it ranges as far north as any Falcons have been shot, and that during the breeding season," and to the paper of Todd and Friedmann (*loc. cit.*) on the ground that these authors, according to Salomonsen, ". . . having examined the mixed assemblage of all three phases in southern Greenland, are not aware that the dark and grey birds are residents there while the white ones are usually migrants from the north." But Todd and Friedmann do not state anywhere that their specimens were only from southern Greenland, and I find that Hartert's statement is substantially correct. The localities mentioned by Todd and Friedmann are not all restricted to southern Greenland by any means, the northernmost locality from which they had specimens being Etah at about latitude $78^{\circ} 20' N.$, and out of four adults seen by Hartert that were collected very far north during the breeding season, on July 2-10, 1894 and 1896, between 77° and $78^{\circ} N.$, I find that only one is white, the others being a gray and two brown birds. North of latitude 78° and Etah, the Gyrfalcon becomes rare, according to Salomonsen, the only records being apparently four birds seen at Washington Land, Hall Land, Newman Bay, and Sherard Osborn Fjord. One of these birds was seen in 1917, and the others are older records which were probably unknown to Hartert. Presumably, these birds were white.

Salomonsen (*loc. cit.*) would restrict the range of *candicans*, which he says consists "exclusively of white birds," to the northeastern coast south to the region to the north of Scoresby Sound, and to the west coast south to the district of Umanak, or at about latitude $70^{\circ} 40' N.$, *obsoletus* from Godthaab southward, the long stretch from Umanak south to Godthaab forming, according to Salomonsen, "an intermediate zone in which all three phases occur in varying numbers." The specimens that I have seen from this intermediate zone, which were collected during the breeding season, consist of two white birds, four that are intermediate to a varying degree between white and gray, one bird intermediate between gray and brown, and two brown birds. One specimen collected south of Godthaab is intermediate between white and gray. White birds have been collected during the breeding season in southern Greenland, as three from Frederikshaab are mentioned by Salomonsen, and Todd and Friedmann (*loc. cit.*) make the very interesting report that one of their correspondents informs them that of two young birds born to "rather dark" parents that "were taken from a nest in Tissaluk Fjord, north of Ivigtut, and raised by hand"

one “. . . is light, the other dark.” Ivigtut is far south in Greenland.

In short, we see that the population is not homogeneous in Greenland, where the situation is most complex, and that young from the same nest can be light or dark. To be sure, one could argue that a distinct subspecies could be recognized in northeastern Greenland, where “only white birds have been observed and obtained” according to Salomonsen, but birds from that region cannot be distinguished on any morphological ground from white birds taken elsewhere. It seems wiser not to recognize any subspecies, as I have emphasized above.

The specimens that I have examined from Greenland and North America that were collected during the breeding season are listed below, together with some specimens reported by other authors.

High arctic northwestern Greenland from Etah south to Upernavik (or about between latitudes 78° 20' and 72° 30' N.): Four white, one intermediate between white and gray, three gray, and two brown. These include four specimens reported by Koelz (1929, p. 215) which consist of three white birds collected at Etah in August and one “rather dark” bird taken at Upernavik in the “summer”; he identifies the latter as “*islandus*,” and I judge it is of the gray type.

Ellesmere Island: Three white, according to Manning (*loc. cit.*).

Devon Island: One brown.

Baffin Island: Fifteen white and one “dark”; the dark bird and eight of the whites are reported by Manning (*loc. cit.*).

Low arctic western Greenland (Kangamiut and Sukkertoppen): Two white, four intermediate between white and gray, one intermediate between gray and brown. Koelz reports seven specimens from these localities, two white and five dark, but all but one were not collected during the breeding season.

Labrador: Three white and 18 “dark” reported by Todd and Friedmann (1947, p. 141). They state that these birds were collected near Fort Chimo in September and believe “The chances greatly favor their having been birds reared in northern Labrador,” but “. . . as a special effort was made to secure light birds, the actual proportion . . .” of white birds is probably smaller in Labrador. Three immature birds that I have seen are brown.

Melville Peninsula, northern Keewatin: One white.

Western Canadian arctic, mainland coast, and south coast of Victoria Island: Two white, six “dark” collected from September 10 to January 21, reported by Manning (*loc. cit.*).

Banks Island: One white, two “dark” reported by Manning (*loc. cit.*).

Alaska: Two white, two gray, five brown.

Specimens from the Commander Islands are reported above.

The wing length of adult specimens measured by me or by Dementiev (1939, p. 292) and Todd and Friedmann (1947, p. 149) is as follows:

Northern Scandinavia: Males, 353, 355, 365; females, 372, 385, 385, 387, 388,

390, 395, 395, 398, 400 (389.4). Lapland, Scandinavia, and northwestern Russia east to the Kanin Peninsula, measured by Dementiev, 19 males, 342–372 (358); 24 females, 380–407 (395.8).

Northeastern Europe and Siberia east to the basin of the Lena ("*intermedius*"), measured by Dementiev: Fifty-one males, 343–372 (360.2); 73 females, 386–415 (397.5).

Iceland ("*islandus*"): Males, 370, 370, 370, 375, 377, 378, 380, 380, 385, 385 (377); females, 385, 400, 408, 410, 410, 420, 425, 425 (410.7).

Greenland ("*candicans*"): White birds: Males, 365, 365, 370, 370, 370, 372, 378, 378, 380, 402 (375); females, 402, 405, 405, 405, 405, 408, 408, 410, 415, 420 (408.3). Gray birds: Males, 365, 370, 372, 373, 375, 375, 377, 378, 400, 406 (379.1); females, 400, 402, 405, 410, 412, 413, 415, 420, 423, 430, (413).

North America ("*obsoletus*"): Males, 363, 370, 375, 400; females, 390, 394, 395, 395, 395, 400, 402, 403 (396.7). Labrador, measured by Todd and Friedmann: Thirteen males, 342–370 (360.5); 26 females, 370–412 (393.6).

The measurements of the birds of Europe, Siberia west of the Lena, and North America are very similar and average somewhat smaller than those of the birds of Greenland and Iceland which, in turn, are virtually identical. The difference is best shown in the females. Those that I have measured from Scandinavia were relatively small, but Dementiev has measured females with a wing length of 407 and 415 and Todd and Friedmann some with one of 412, and these measurements overlap a great deal those of females from Greenland and Iceland.

It is of interest to note that the white birds of Greenland, which predominate in the higher latitudes, average smaller than gray birds. A slight difference between white and dark birds was reported also by Schiøler. His average measurements of Greenland birds are quoted by Salomonsen (*loc. cit.*) and are: Males, nine brown (365.6), 19 gray (364.4), 18 white (359.6); females, seven brown (406.3), 17 gray (402), 43 white (398).

Falco altaicus

The Altai Falcon is closely related to both the Gyrfalcon (*rusticolus*) and the Saker Falcon (*cherrug*), occupying a taxonomic position more or less intermediate between the two. Such close relationship argues for the union of *rusticolus* and *cherrug* in one species. However, although the three birds were very probably derived from a common ancestor, we know that *altaicus* and *cherrug*, at least, have reached species level, as their breeding ranges overlap completely. The breeding ranges of *altaicus* and *rusticolus* do not overlap and, in fact, are widely separated; *altaicus* is restricted to the mountains of central Asia and *rusticolus* is an arctic and circumpolar form. Dementiev, who believes, probably quite correctly, that *altaicus* is a relict, has argued persuasively that it is conspecific with *rusticolus*. He is more familiar with *altaicus* than is any other author, has discussed it in several

papers (1933a, which is very detailed, 1934, 1939, and 1947b), and shows that it is, on the whole, more similar morphologically to *rusticolus* than it is to *cherrug*. Nevertheless, some doubt must remain, as the relationship of the three birds is complex (see Dementiev, 1933a, pp. 164–166), and *altaicus* has a reddish phase which is similar to the coloration of the *milvipes* group of *cherrug*, but totally unknown in *rusticolus*. This reddish phase is well illustrated in the excellent plates drawn and published by Dementiev (1933b). I believe, therefore, that it is best to retain the three as separate species, as Stegmann (1937) and Portenko (1951) have done and as is proposed by Stresemann (MS). The most misleading treatment of all would be to combine the three into one species, as Kleinschmidt (1923–1937) has done, or Meinertzhagen (1954), who has united into one species (*rusticolus*) not only *cherrug* and *altaicus* but also the American Prairie Falcon (*mexicanus*), the Lanner Falcon (*biarmicus*), and the Laggar Falcon (*jugger*).

Falco subbuteo

The Hobby is widely distributed in the open and sparsely wooded regions of Eurasia from western Europe to the Pacific, ranging from southern Sweden and latitudes which vary from about 62° to 67° N., south to north-western Africa and western Asia, and, in the east, to China south to northern Indochina. It varies geographically, but this variation is very slight and complicated by a high degree of individual variation with the result that scarcely any two authors recognize the same subspecies, their number varying from eight to four, though Stresemann (MS) would reduce it to three (nominate *subbuteo*, *streichi*, and *jugurtha*). The disagreement is greatest concerning the populations of the Soviet Union, as Portenko (1930) would recognize six races in the Union; Johansen (1957), three; Dementiev (1951) and Stegmann (1936, 1937), only two but not the same two, and Stresemann, only one (nominate *subbuteo*). Dementiev recognizes the latter and *jakutensis* and synonymizes *centralasiae* with nominate *subbuteo*, but Stegmann believes *centralasiae* is valid and synonymizes *jakutensis* with nominate *subbuteo*. It seems quite sufficient to me to recognize nomenclaturally only two subspecies which, moreover, are rather poorly differentiated: *streichi* Hartert and Neumann, 1907, type locality, Kwangtung, which is restricted to central and southeastern China from southern Shensi south to Yunnan and northern Indochina; and nominate *subbuteo* Linnaeus, 1758, type locality, Sweden, in the rest of the range; and to synonymize with nominate *subbuteo* the following forms: *jugurtha* Hartert and Neumann, 1907, type locality, Tangier; *jakutensis* Buturlin, 1910, type locality, Aby on the Indigirka, northeastern Siberia; and *centralasiae* Buturlin, 1911, type locality, Tian Shan.

The populations (*streichi*) of central and southern China are identical with those of western Europe in coloration, but the wing length averages appreciably shorter, measuring 237–253 (244.1) in four males and 251–257 (253.5) in four females, as against 249–270 (255.5) in 15 males and 255–275 (268.5) in 15 females of nominate *subbuteo* from Europe. Six of these specimens of *streichi* consist of the type (a male with a wing length of 237) and five paratypes. We see that some individuals from China are indistinguishable from some from Europe, but we may grant that the difference in average measurements is sufficiently well marked to be of taxonomic importance.

In the rest of the range of the species, however, the differences in coloration or size seem much too slight and inconstant to warrant nomenclatural separation. It is customary to separate the population of northwestern Africa as *jugurtha*, which Swann (1935, p. 342) states is “barely distinguishable” from nominate *subbuteo*, but I find that the type and paratypes of *jugurtha* and the other specimens mentioned by Hartert (1923a, p. 24) differ from the population of western Europe only by averaging very slightly paler, such differences as exist being quite insignificant, Hartert notwithstanding. This tendency towards a slightly paler coloration is not peculiar to north Africa but is exhibited by all the populations that inhabit the more southern and, generally speaking, more arid parts of the breeding range from Africa to Kashmir, the Punjab, and central Asia. This was suspected by Stegmann (1936, pp. 92–95) who, although he had no specimens from Africa, remarked that *centralasiae* (Turkestan) was probably indistinguishable from *jugurtha*, and has been confirmed by the specimens that I have seen from southeastern Russia (Orenburg), Iran, Afghanistan, Turkestan, and Kashmir. *Centralasiae* is thus a synonym of *jugurtha*. As regards *centralasiae*, Kinnear (1933, p. 691) found that his specimens from Turkestan and Kashmir were indistinguishable from those of Europe and called them nominate *subbuteo*, and, as stated above, Dementiev considers that *centralasiae* is invalid (and hence *jugurtha* also) and a synonym of nominate *subbuteo*.

The populations become slightly darker, on an average, as they range farther north in more humid regions in western and northern Eurasia, but pale individuals are found breeding even in southern England and, according to Stegmann (*loc. cit.*), in Poland, the central regions of Russia and Siberia, and in Transbaicalia and Ussuriland. He states that, although the increase in color saturation reaches its limit in Karelia, the Pechora, and Yakutia, the difference between the northern and southern populations is so extremely slight that it is completely impossible (“*vollständig unmöglich*”) to recognize more than one subspecies, although the populations are not

quite uniform. He would, however, recognize *centralasiae*, but the paler populations from the southern borders of the range do not differ morphologically from the intermediate populations (typical nominate *subbuteo*) any more than do the darker populations (*jakutensis*) from the northern borders of the range. In other words, we are dealing with a poorly defined type of clinal variation which does not lend itself to nomenclatural separation. Meinertzhagen (1954, p. 339) states, "The races *centralasiae* and *jakutensis* cannot be upheld on either colour or measurement and must become synonyms of the nominate form," but apparently he did not compare *jugurtha* and *centralasiae*, taking the validity of *jugurtha* for granted.

Johansen (1957) admits that the geographical variation is slight and the individual variation great but, nevertheless, would recognize three subspecies (nominate *subbuteo*, *jakutensis*, and *centralasiae*) on the ground that not to do so conceals the geographical variation. However, I believe that it is less misleading taxonomically to call attention to the slight geographical variation mentioned than to recognize "subspecies" that cannot be identified with certainty and the ranges of which cannot be defined satisfactorily. *Falco subbuteo* is highly migratory, and it would be a sheer impossibility to identify as to "subspecies" the individuals that winter south to Cape Province in South Africa, Bombay, central India, Assam, Burma, and occasionally Indonesia.

The populations of central China require further study before the range of *streichi* can be defined, but apparently this race does not extend to central Kansu and Tsinghai, as a breeding female from the Sining region has a wing length of 261, according to Bangs and Peters (1928, p. 329), and Meise (1938, p. 180) reports that birds collected during the breeding season in the region of Sining in Tsinghai and of Liangchow in central Kansu have a wing length of 265, 266, 267.5, 269, 272 (268) in males and 278, 286, 290, 291 (286.2) in females. These measurements are larger than those of the birds that I have measured from Europe (see above), but the difference is not of taxonomic importance, as the measurements of the males overlap, and we see that some females from Sining are considerably smaller (261) than those measured by Meise. This author calls his specimens *centralasiae*, stating that they are paler in series than birds from Europe, but Bangs and Peters call their specimen and three young nominate *subbuteo*, stating that these four specimens are identical in coloration with specimens from Europe.

Falco columbarius

The geographical variation of the Palearctic populations of the Merlin is fairly clear cut, and most authors agree in recognizing the same sub-

species which Stresemann (MS) lists, as follows: *subaesalon* (Iceland), *aesalon* (Eurasia east to the Yenisei and Lake Baikal), *insignis* (eastern Siberia), *pacificus* (coastal districts of eastern Siberia), *pallidus* (steppes of western Siberia and of Kazakhstan), and *lymani* (mountains of central Asia). Stegmann (1929b), who has reviewed the species, would recognize an additional race (*regulus* Pallas, 1773, type locality, Siberia) in eastern Europe and western Siberia, but the geographical variation is clinal, and *regulus* represents a very poorly differentiated form, as Johansen (1957) states. This name has been synonymized with *aesalon* Tunstall, 1771, type locality, France, by Dementiev (1951, p. 136). The committee that prepared "A hand-list of the Japanese birds" (Ornithological Society of Japan, 1942, p. 105) has synonymized *pacificus* Stegmann, 1929 (type locality, coast of the Sea of Okhotsk), with *insignis* Clark, 1907 (type locality, southern Korea on migration), on the ground that the 30 specimens it examined from Japan, Sakhalin, and Korea all "belong to one form." However, such a statement does not prove that *pacificus* is invalid, and I agree with the Russian authors that it is valid, being clearly darker than *insignis*. Some specimens that I have seen from Japan are identical with others from Gizhiga at the northern end of the Sea of Okhotsk and show that Dementiev (*loc. cit.*) is correct in stating that *pacificus* occurs in Japan. The specimens that I have seen from Japan have no date, but their plumage shows that they were either fall migrants or winter visitors.

Many authors incorrectly use the name *christiani-ludovici* Kleinschmidt, 1917, for the very pale and distinct race that inhabits the steppes of western Siberia and of Kazakhstan on the ground, implied or stated, that *pallidus* Sushkin, 1900, is preoccupied. Stresemann (MS) uses *pallidus*. It has been alleged that *pallidus* Sushkin is preoccupied by *Falco pallidus* Schlegel and Susemihl, 1839–1851, but Hartert (1913–1922, p. 2200) has shown that *Falco pallidus* Schlegel and Susemihl is only a secondary homonym and refers to a form of the Pallid Harrier (*Circus macrourus*), which was described as *Circus pallidus* by Sykes in 1832. Exactly the same observation applies to the *Falco pallidus* of Schinz, 1840, which Peters (1931, p. 295) states preoccupies *Falco pallidus* Sushkin. Steinbacher (1936, p. 405) claims that the latter is preoccupied by *Falco pallidus* Lesson, 1830, but I believe Steinbacher has made an error, because I cannot trace *Falco pallidus* Lesson in Lesson's or any other work. Finally, Kleinschmidt (1917, p. 9) claims also that Sushkin's name is preoccupied by *Tinnunculus alaudarius pallidus* A. E. Brehm, 1866, but the latter is a *nomen nudum* according to Hartert (1913–1922, p. 1083).

Four races are recognized in North America: *bendirei* Swann, from

Alaska to Mackenzie south to central and eastern British Columbia, northern California, and Idaho; *suckleyi* Ridgway, in western British Columbia; *richardsonii* Ridgway, in the prairies from southern Alberta to southwestern Manitoba, south to northern Montana and northwestern North Dakota; and nominate *columbarius* Linnaeus, from northern Manitoba to Labrador and Newfoundland, south to northeastern North Dakota, Iowa, northern New York, and Maine.

Falco tinnunculus

The Kestrel is widely distributed in Eurasia and Africa, where it breeds south to southern China, India, the Iranian region, Arabia, the Mediterranean Basin south to northern Mauretania and Egypt, Madeira, the Canaries, Cape Verde Islands, and the savannas south of the Sahara east to Somaliland and south to Cape Province. It varies geographically, and many subspecies have been described. Grant and Mackworth-Præd (1934) have reviewed the African forms and recognize seven subspecies in Africa, not counting the insular races of Madeira, the Canaries, and the Cape Verdes. Two of these seven (nominate *tinnunculus* and *rupicolæformis*) breed in northwestern Africa and Egypt and are discussed below. The other five are tropical forms and were not studied by me, but Stresemann (MS) believes that two of these are not valid and recognizes only *rufescens*, ranging from upper Guinea to Abyssinia, *archeri*, from Somaliland south to coastal Kenya, and *rupicolus*, south of the other two. I believe it is sufficient to recognize seven subspecies in the Palearctic Region, which are listed and discussed below:

1. *Falco tinnunculus alexandri* Bourne, 1955, type locality, São Tiago Island, southern Cape Verde Archipelago.

2. *Falco tinnunculus neglectus* Schlegel, 1873, type locality, São Vicente Island, northern Cape Verde Archipelago.

Two races inhabit the Cape Verdes: *alexandri* inhabits the southern group of these islands; and *neglectus*, the northern group. That there are two subspecies was established recently by Bourne who, in the description of *alexandri*, states (1955a) that that race differs from *neglectus* by being larger, darker, and more rufous on the back but less heavily streaked below. A size difference between the two populations had already been reported by Alexander (1898, p. 278) but denied by Bannerman (1930, p. 214). However, the specimens measured by Bourne and by me show that those from the southern islands are indeed distinctly larger. Bourne states that his specimens from the southern islands of Maio and São Tiago have a wing length of 209–229 (218) and a tail length of 137–149 (141) in eight males, and, respectively, 224–232 (228) and 149–162 (154) in five females,

as against 190–209 (198) and 117–138 (127) in seven males and 203–213 (208), 131–142 (138) in five females from the northern islands of Santo Antão and São Vicente. He subsequently reported (1957) seven additional specimens, chiefly from the southern island of Boa Vista, with measurements similar to those he had cited two years earlier. Four males and four females each that I have measured from the islands of the southern group (Boa Vista, Maio, São Tiago, Fogo, and Brava) have a wing length of 218, 218, 221, 225 and a tail length of 144, 148, 148, 150 in males, and 230, 231, 232, 238 and 142, 155, 157, 158 in females, as against (compensating for wear) 204, 212 and 140, 145 in the only two adults of *neglectus* that I have seen, which are males, from the island of São Nicolau. We see that there is a slight overlap in some measurements, but the difference in the average wing length amounts to 20 mm. in the specimens measured by Bourne and to 22.5, 24.7 mm. when my measurements are compared to his. This difference, which is roughly 10 per cent of the length of the wing, is appreciable and appears to be of taxonomic importance. It is noticeable in the field, according to Bourne (1955b, p. 541), who remarks also that the two races differ somewhat in their ecological preferences, the larger, *alexandri*, frequenting the cultivated areas to a greater extent than *neglectus*.

I cannot comment on the coloration of adults, as my only two specimens of *neglectus* are too badly worn for color comparison, but the difference mentioned by Bourne is confirmed by my specimens in juvenal plumage. An immature female of *alexandri* from Boa Vista and another from São Tiago are appreciably darker above than four immature specimens in the same state of plumage from the northern islands of São Vicente, São Nicolau, and Razo. The specimens from Razo consist of a male with a wing length of 192 and a female with one of 205, which were collected by Correia on May 18, 22, 1922, and were reported by Murphy (1924, p. 262) as being adults. I find, however, that they are very young birds not long from the nest and mention this lest an error be made in any comparison of these measurements (which are supplied by Murphy) with those of adults.

The two populations of the Cape Verde Islands are discussed above by me to provide an independent confirmation of the validity of *alexandri*. It can also be appropriately mentioned here that nominate *tinnunculus* occurs on migration in the Cape Verdes, at least occasionally, as the collection of the American Museum of Natural History contains a male of nominate *tinnunculus* in first winter plumage with a wing length of 240, which was collected on Sal Island on March 10, 1924, by the "Blossom" expedition. Hitherto, the occurrence of nominate *tinnunculus* in the Cape Verdes had been questioned by Bannerman (1930, p. 212, footnote) who believes that

the specimen from the Cape Verdes in the collection of the British Museum may have been labeled incorrectly. The species is also a rare winter visitor to the Azores. Hartert and Ogilvie-Grant (1905, p. 112) report that four specimens are known from São Miguel, and a fifth, an immature male of nominate *tinnunculus*, has been reported by Murphy and Chapin (1929, p. 6). It was collected by Correia on December 7, 1927, on the island of Terceira and is a bird in first winter plumage with a wing length of 245.

3. *Falco tinnunculus canariensis* Koenig, 1890, type locality, Tenerife, western Canary Islands.

4. *Falco tinnunculus dacotiae* Hartert, 1913, type locality, Lanzarote, eastern Canary Islands.

Two races inhabit also the Canaries: *canariensis* inhabits the western group of these islands, where it is known from Gran Canaria, Tenerife, Palma, Gomerra, and Hierro; and *dacotiae*, the eastern group, where it is known from Fuerteventura, Lanzarote, Graciosa, and some of the islets such as Montaña Clara and Allegranza.

These two races are similar in size to *alexandri* but are more reddish above, and are less heavily barred, spotted, or streaked, *dacotiae* differing from *canariensis* by being distinctly paler, brighter red, and less heavily marked.

The population of Madeira is very similar to that of the western Canaries and, quite properly, has always been called *canariensis*. However, I find that the birds of Madeira are a little less dull than those of the western Canaries, the females averaging more reddish on the crown and back. This difference is of interest but is not constant and is much too slight to be of taxonomic importance.

5. *Falco tinnunculus rupicolaeformis* C. L. Brehm, 1855, type locality, Egypt, with *buryi* Grant and Mackworth-Praed, 1933, type locality, Dhala, Aden Protectorate, as a synonym.

This race differs clearly from the four insular races mentioned above by being more richly colored throughout, less heavily marked above in the adult, but more densely and darkly streaked below in the juvenal plumage. It differs clearly also from nominate *tinnunculus* (as shown below), but the difference has been questioned, probably because migrant or winter visitors of nominate *tinnunculus* to Egypt have been confused with the resident population. I find, however, that the latter (*rupicolaeformis*) differs distinctly from nominate *tinnunculus* by being darker in all plumages and by averaging considerably smaller. In specimens of *rupicolaeformis* from Egypt, the wing length of 14 males measures 223–247 (235) and that of eight females 230–248 (242.2), as against 236–266 (245.7) in 20 males and

240–270 (253.8) in 20 females of nominate *tinnunculus* from Europe. In the adult plumage, *rupicolaeformis* is more richly colored above and below than nominate *tinnunculus*, especially on the “thighs,” which are much more reddish, and is more heavily spotted or barred above; in the adult male of *rupicolaeformis* the red of the back is more vinaceous, less bright and pinkish, than in male nominate *tinnunculus*. Specimens in juvenal plumage are even more distinct than adults, *rupicolaeformis* being much more densely streaked below, with broader, darker, more blackish streaks than nominate *tinnunculus* in the same plumage. Grant and Mackworth-Præd (1934, p. 78) state that the wing length of *rupicolaeformis* measures 233–272 in males and 240–263 in females (no averages given), but the measurements of the breeding birds of Egypt that I give above suggest that these authors have probably misidentified some of their specimens, combining some of nominate *tinnunculus* with others of *rupicolaeformis*.

I am very grateful to Mr. M. A. Traylor of the Chicago Natural History Museum for lending me eight specimens collected at their nesting sites in Egypt. These and other specimens of *rupicolaeformis* were compared to a series of 22 specimens of nominate *tinnunculus* from Egypt and another very large series from western Europe. The series of nominate *tinnunculus* from Egypt consists of eight birds taken during the period of migration in autumn or spring, and the others during the winter months. These birds suggest, I believe, that nominate *tinnunculus* is a common migrant and winter visitor to Egypt, although Meinertzhagen (1930, p. 380) states that its “status in Egypt [is] uncertain.”

Meinertzhagen (*loc. cit.*; 1954, p. 345) acknowledges the validity of *rupicolaeformis* but remarks that it is “a most unsatisfactory race,” because he says that he has examined specimens that were similar to it from many regions ranging from Great Britain and the Mediterranean all the way to Turkestan, Mongolia, and India. Meinertzhagen’s conclusions are not confirmed by the abundant material that I have seen. I find that *rupicolaeformis* is well differentiated. Five specimens that I have seen from the Yemen and Aden do, however, confirm Meinertzhagen’s belief (1954, p. 345) that *buryi* is a synonym of *rupicolaeformis*. He states that he has not seen breeding birds from the Yemen but that “Aden birds are certainly *rupicolaeformis*.” Among the five available to me are three collected by Bury himself in 1901 or 1902.¹ One of these is a topotype of

¹ Bury’s collection was never reported in the literature, and he failed to indicate the year on many of his labels, but he collected during 1901 and 1902, and also 1900, as he mentions these dates in his account (1917) of a collection he made subsequently in the Yemen in 1912 and 1913. Meinertzhagen (1954, p. 579) states that the specimens collected during the first trip “came to the British Museum,” but a substantial part of that collection

buryi collected on March 13 at Dhala (or Dthala), two days later than the specimen from the same locality that was selected for the type of *buryi* by Grant and Mackworth-Praed. These specimens match perfectly the coloration of the birds of Egypt and have the same wing length, measuring 235, 236, 238 in three males and 241, 246 in two females. Meinertzhagen (1954, p. 346) has included Palestine in the breeding range of *rupicolaeformis* but without comment, and I am reluctant to follow him, as a specimen that I have seen that was collected in Palestine during the breeding season is typical nominate *tinnunculus*. Eight other specimens from Palestine collected between September 19 and November 30 and between February 23 and April 25, and four collected by Bury in the Yemen between December 18 and January 29, are all nominate *tinnunculus*.

6. *Falco tinnunculus tinnunculus* Linnaeus, 1758, type locality, Sweden, with the following synonyms: *perpallidus* Clark, 1907, type locality, southern Korea; *dörriesi* Swann, 1920, type locality, southern Ussuriland; and *stegmanni* Portenko, 1931, type locality, Chinese Turkestan.

I agree with Hartert (1913–1922, pp. 1083, 2201) and Steinbacher (1936, p. 406) that the forms synonymized above are invalid. Stegmann (1937, p. 273) synonymized *perpallidus* and *dörriesi* with nominate *tinnunculus* but recognized *stegmanni*, while Dementiev (1951, p. 147) synonymized *stegmanni* with nominate *tinnunculus* and recognized *perpallidus*, synonymizing *dörriesi* with it. The names *perpallidus*, *dörriesi*, and *stegmanni* represent an eastern form which is said to be paler and larger than nominate *tinnunculus*, but the individual variation of the western populations is great, and the differences mentioned represent only a slight tendency. Many specimens from the west or east are identical in coloration, and the overlap in measurements is virtually complete. For instance, Dementiev (*loc. cit.*) states that the wing length of nominate *tinnunculus* measures 230–253 (242.5) in 62 males and 242–275 (254.5) in 64 females, and 235–255 (247) in five males and 250–275 (262.9) in 10 females of *perpallidus*, which he restricts to eastern Siberia. In the 20 males that I measured from western Europe the wing length was 236–266 (245.7), the measurements of my females being almost identical with the measurements taken by Dementiev. I fail also to find any appreciable difference in the length of the tail, although Swann (1922, p. 134) believed that his own *dörriesi* had a much longer tail than nominate *tinnunculus*. Stegmann would restrict *stegmanni* to Dzungaria, Chinese Turkestan, and apparently

southern Mongolia, but the few specimens that I have seen from these regions are indistinguishable from specimens from Europe.

Nominate *tinnunculus* has such a vast breeding range, extending from northern Eurasia south to northwestern Africa, Asia Minor, the Near East, the Iranian region, northwestern Himalayas, Tibet, and Manchuria, that it would be surprising to find that it does not vary geographically. However, although the degree of differentiation is not sharp enough for nomenclatural recognition to be warranted, it is more strongly marked in northwestern Africa than elsewhere. The fact that this population differs from that of western Europe has been denied by Hartert (1923b, p. 123), who quoted a statement of Vaucher that the birds of Africa are "*très foncés d'un roux vif*" only to refute it. He writes: "[This statement] appears to be erroneous; nor are they paler as has been suggested: the brighter, darker, and paler coloration being due to the individual variation and age of plumage." However, I find that virtually all the 49 specimens in the Rothschild Collection from northwest Africa are, indeed, brighter and more rufous than nominate *tinnunculus* from Europe, but the difference is relatively slight and I do not consider it to be of taxonomic importance. In order not to be misled by possible migrants or winter visitors from Europe, I have compared only birds collected at their breeding sites or during the breeding season. I find that the latter are more buffy and more rufous below (they are "*roux*" as Vaucher stated), especially on the lower abdomen and "thighs," and, on an average, are more heavily and darkly streaked and spotted below. The coloration of the under parts shows a very definite tendency towards that of *rupicolaeformis* from Egypt, but above they are indistinguishable from nominate *tinnunculus* from Europe. Possibly the African birds are very slightly smaller, as nine males have a wing length of 233, 239, 240, 241, 244, 247, 248, 248, 250 (243.4), but four females measure 252, 253, 255, 260 (255) and are not smaller than the birds of Europe.

Whistler and Kinnear (1936, pp. 420-422) state that nominate *tinnunculus* breeds in Ladak, Kashmir, and the outer Himalayas down to 2500 feet and, if I understand them correctly, that *interstinctus* occurs in India only as a winter visitor. However, these statements are certainly incorrect, as nominate *tinnunculus* appears to be restricted as a breeding bird only to the northwestern Himalayas eastward to Ladak and is replaced farther east by *interstinctus*, which is made very clear by the material that I have seen and an earlier report of Whistler (1926, p. 765) which is confirmed by my specimens. In that report Whistler states very definitely that the birds that breed in Kangra in northern Punjab are *interstinctus* and that nominate *tinnunculus* occurs in that region only from October to

March. He says that *interstinctus* breeds "from about 1500 feet upwards, apparently to 12,000 feet . . . [and] seems to be strictly resident, though perhaps exhibiting some altitudinal movements." A series of 12 specimens that I have examined from northern Punjab and that, with the exception of two birds, were collected during the breeding season, are all quite unmistakably *interstinctus*. They were taken at altitudes varying from about 6300 to 13,000 feet in Chamba, Kulu, and in Lahul north of the Rohtang Pass. One breeding bird from Garhwal and two from central Nepal are also *interstinctus*. I can only conclude, therefore, that *interstinctus* is the breeding race in the Himalayas east of Kashmir and Ladak, and that nominate *tinnunculus* occurs in India only as a winter visitor, with the exception of the northwestern Himalayas (see above) where it replaces *interstinctus* as a breeding bird. I may add that nominate *tinnunculus* winters as far south as Ceylon, a country from which it has been reported by Whistler (1944, p. 241), and from which I have two specimens.

Falco tinnunculus interstinctus differs from nominate *tinnunculus* by being darker throughout in both sexes, and by being more heavily spotted, barred, and streaked, but its wing length is similar, measuring in 10 breeding males and 10 breeding females from India and Yunnan 235–252 (244.4) and 240–265 (250), respectively. It resembles *rupicolaeformis* in general coloration but is less bright below in the adult, less densely and darkly streaked in the juvenal plumage, and is a larger bird.

Some authors include Manchuria in the range of *interstinctus*, but, although I have seen no specimens, the birds of that country seem to be pale and probably are nominate *tinnunculus*. Yamashina (1939, p. 515) states that specimens collected in northern Manchuria during the breeding season are similar to birds from Europe, and Meise (1934, p. 58) says that some taken in May and June in northern and southern Manchuria are *perpallidus*, which I consider to be a synonym of nominate *tinnunculus*. I believe that nominate *tinnunculus* will also prove to be the race that breeds in northern Korea.

7. *Falco tinnunculus interstinctus* Horsfield, 1840, type locality, Assam, with the following synonyms: *saturatus* Blyth, 1859, type locality, Tenasserim; and *japonensis* Ticehurst, 1929, new name for *Falco tinnunculus japonicus* Temminck and Schlegel, 1844, type locality, Japan, preoccupied by *Falco japonicus* Latham, 1790, a synonym of *Falco peregrinus japonensis* Gmelin, 1788.

This race is discussed in part above, and its breeding range extends from Japan, northern China, and probably southern Korea, southward to Yunnan and probably Burma (where the status is uncertain), Assam, and the Himalayas west to northern Punjab (see above). It is partly

migratory, wintering in southern Japan, central and southern Korea, the Ryu Kyus, Formosa, eastern China, Indo Chinese countries and Hainan, and India south to Ceylon, occasionally reaching the Philippines, Borneo, and Malaya.

Whistler and Kinnear (*loc. cit.*) discussed *saturatus* and, after examining the type of *interstinctus*, reached the conclusion that it is a synonym of *interstinctus*. I believe they are correct, although, to be sure, I have examined two specimens collected in northwestern Yunnan on June 22 and November 24, one at Rangoon on December 28, and another at Chinkiang, southern Kiangsu, on December 8 which are much darker than *interstinctus* and presumably represent "*saturatus*." These four specimens are females and are heavily barred above, more so than breeding females from the Himalayas and females from Japan, but they vary individually, and in two the bars and also the crown are very blackish, and in one of the last two the blackish bars coalesce on the upper back. I have also examined an adult male collected on the Salwin Divide in northwestern Yunnan on September 22 which was labeled *saturatus*, apparently by Rothschild, but it is only slightly darker than males from northern Punjab and Japan.

I believe that these five dark birds represent individual variants and not a geographical form, as the darker form (*saturatus*) and the paler one (*interstinctus*) are apparently both found in northwestern Yunnan during the breeding season. Rothschild (1926, pp. 231–232) states that "the very dark Yunnan bird is *saturatus*," whereas *interstinctus* is only a winter visitor. Such an assertion is not made clear by his list of specimens in which only a few dates are given and in which one finds both forms listed from the same localities. I have therefore reexamined the specimens in his collection, and, in my opinion, they can be identified as follows: *Interstinctus*, Likiang Range, August (no date and identified as "*int.*" by Rothschild), September 30, October 22 (two specimens), and December 10; Shweli Valley, December 24; Salwin Divide, September 9; Tengyueh, August 25, and December 25 (two specimens). "*Saturatus*," Likiang Range, June 22; Shweli Valley, November 24; Salwin Divide, September 22. This last specimen is mentioned above and may not represent "*saturatus*." The specimens collected in October and December in the Likiang Range are apparently those listed by Rothschild in "*saturatus*," although one of the two October birds has the notation "*int.*" on the label, apparently in Rothschild's handwriting. These two birds were probably local birds, as they are molting the primaries. We see that only one specimen was actually taken during the breeding season (June 22) and that it is a "*saturatus*." However, it is possible that all the birds listed had bred

in northwestern Yunnan, as *interstinctus* is resident at the same altitudes in the Himalayas according to Whistler (1926, p. 765). Further study is required, but it seems probable that *saturatus* represents a color variant of *interstinctus* and not a valid subspecies. Another color variant, "a bright foxy phase," of *interstinctus* is mentioned by Whistler and Kinnear (*loc. cit.*), of which I have seen a specimen collected in Mysore on February 7, 1940.

Nominate *tinnunculus* occurs also in northern Yunnan during the winter, as stated by Rothschild, and his collection contains four specimens of this race collected on November 24 and December 24, 1924. Altogether, I have examined 83 specimens of *interstinctus*, including the five "*saturatus*" mentioned.

In southern India and in the Western Ghats north to about latitude 20° N. (Nasik), *interstinctus* is replaced by a distinct race (*objurgatus* Baker, 1927, type locality, Nilgiris) which differs from it by being brighter red above and more richly colored below, and also by being slightly smaller, according to Whistler and Kinnear (*loc. cit.*), who state that the wing length of *objurgatus* measures 221–242 in 10 males and 234–258 in 12 females, no averages being given. The only two adults of *objurgatus* that I have seen measure 244 in one female and 243 in one male.

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