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Systematic Notes on Palearctic Birds. No. 11 Sylviinae: the Genus *Sylvia*

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This paper consists of notes on 10 of the 15 usually recognized species of this genus. Evidence is offered showing that two additional forms which are not currently considered to be separate species should be so considered: *S. minula* Hume as distinct specifically from *S. curruca* Linnaeus, and *S. mystacea* Ménétries from *S. melanocephala* Gmelin.

SYLVIA HORTENSIS

In *Sylvia hortensis* the various populations of the species are currently divided into two races: a western form, nominate *hortensis* Gmelin, 1788, type locality, France, breeding from France and northern Italy south to north Africa from Morocco eastward to Tripolitania; and an eastern form, *crassirostris* Cretzschmar, 1826, type locality, Nubia, breeding from the Balkan Peninsula and Cyrenaica eastward to Baluchistan, Afghanistan, and Russian Turkestan. The eastern form differs from nominate *hortensis* through its longer bill and less buffy flanks and under tail coverts. Examination of good series from the eastern parts of the range, from Iran eastward, shows, however, that this treatment is inadequate, and in my opinion two additional races should be recognized nomenclaturally: *balkanica* Zarudny and Bilkevitch, 1918, type locality, Great Balkhan, western Transcaspia, for the populations of Transcaspia and Iran with the exception of the population of Persian Baluchistan; and *jerdoni* Blyth, 1847, type locality, southern India, for the populations breeding from Persian Baluchistan eastward which migrate into India.

The characters of the populations from Iran eastward are as follows. In comparative plumage adult males from Iran have a much more distinct

blackish cap than male *crassirostris* examined from the Balkan Peninsula, Cyrenaica, Sudan, Asia Minor, and Near East. The blackish or slaty pigments extend farther back, to the hind neck from which they are very sharply delimited. Taken as a series the population of Iran seem to be somewhat paler than *crassirostris* other than the cap; they seem to be very slightly more "sandy" or brownish gray above; they are slightly purer white below; and the under tail coverts are whitish, not tinged with grayish. These characters are, however, quite trivial in contrast to the clear-cut difference in the color of the crown. The bill in the populations of Iran is similar in length and shape to that of *crassirostris* but (see individual measurements listed below), because the wing is slightly longer in the populations of Iran, the bill is proportionately shorter. The populations of Iran differ also by having a longer tail.

The populations from Persian Baluchistan eastward differ as distinctly from the other populations of Iran as these differ from *crassirostris*. In these easternmost populations the cap is darker still, very deep black, almost pure black, and in most specimens the pigments extend farther back and their posterior border is not quite so sharply delimited, for they invade the upper border of the mantle to a slight extent. The upperparts are distinctly purer gray than in either *crassirostris* and the populations of Iran. They have a very long bill which is well attenuated, and the tail averages longer than in any population of the species. Some of these characters have already been pointed out by Ticehurst and Whistler (1929, *Ibis*, p. 673), who proposed that a third race (*jerdoni* described from winter visitors to India) should be recognized in addition to nominate *hortensis* and *crassirostris*. I agree with this proposal, although it has not been followed by the authors dealing with Palearctic birds. Breeding birds from Persian Baluchistan, eastern Afghanistan, and the Safed Koh are, I find, identical with winter visitors examined from Madras Presidency.

I propose that the populations of Iran be separated under the name *balchanica* Zarudny and Bilkevitch, although specimens from the Great Balkan and the description of *balchanica* are not available to me. According to Hartert and Steinbacher (1934, *Die Vögel der paläarktischen Fauna*, suppl. vol., p. 273) *balchanica* was described as having a short and slender bill. If this is the only character cited by Zarudny and Bilkevitch, Hartert and Steinbacher are correct in considering *balchanica* as a synonym of *crassirostris*, but until topotypical *balchanica* can be compared with specimens from Iran it seems wiser to use this name rather than to propose a new one. In this I am guided by an April specimen from Seraks in Transcaspia south of Tedjen and two breeding specimens from neighbor-

ing Khorasan which show the characters that, as mentioned above, separate the populations of Iran, other than that of Persian Baluchistan, from *crassirostris* and *jerdoni*.

The material examined throughout the range of the species is not uniform, and the following population and individual specimens may be cited. In Cyrenaica the breeding population, although correctly referred to *crassirostris* on account of its bill characters, is intermediate in the coloration of its under parts between this form and nominate *hortensis*, that is, it shows a distinct tinge of buff on the flanks and under tail coverts though not so strongly developed as in nominate *hortensis*. In *crassirostris*, Stresemann (1928, Jour. Ornith., vol. 76, p. 377) has cited two breeding specimens from the Cilician Taurus in which the bill is as short as in nominate *hortensis*, and I have examined a breeding bird from Tiflis in Transcaucasia, the only specimen available to me from this region, in which the head is almost as deep black as in *jerdoni* but in which the bill is typical of *crassirostris*. I have examined only two specimens from Mazenderan, a male and a female, which are both molting. Their bills are identical in shape and length with the bill of *jerdoni*, and in the male the head is fully as black. These individual specimens do not necessarily invalidate the division of the species proposed in this paper, but the populations ranging from Transcaucasia to the southern Caspian districts of Iran should be studied further.

Individual measurements of adult males are as follows :

Nominate *hortensis* from France and Italy: wing, 78, 80, 82, 82, 84 (81.2); tail 59, 62, 62, 64, 65 (62.4); wing/tail index, 77; bill from skull, 17, 17, 17, 17.5, 18 (17.3); wing/bill index, 20, 20.5, 21.5, 22, 22.5 (21.3).

S. h. crassirostris from Sudan, Cyrenaica, Dalmatia, Palestine, Asia Minor, and Transcaucasia: wing, 78, 78, 78, 78, 79, 80, 80, 81, 82, 86 (80.0); tail, 59, 60, 60, 61, 62, 62, 62, 62, 63, 65 (61.6); wing/tail index, 77; bill, 18.5, 18.5, 19, 19, 19, 19.5, 20, 20, 20, 20 (19.3); wing/bill index, 23, 23, 24, 24, 24.5, 24.5, 24.5, 24.5, 25, 25.5 (24.2).

S. h. balchanica from Transcaspia (1 specimen) and Iran: wing, 80, 80, 81, 81, 81, 81, 82, 83, 83, 84, 85, 85, 85, 85 (82.6); tail, 62, 62, 62, 62, 64, 64, 65, 66, 66, 66, 67, 69, 69, 69 (65.2); wing/tail index, 79; bill, 18, 18, 18, 18, 18.5, 19, 19, 19, 19, 19, 19.5, 19.5, 20, 20.5 (19.0); wing/bill index, 21.5, 21.5, 22, 22, 22, 22, 22, 22, 22, 23, 23, 24.5, 24.5, 24.5, 24.5 (22.7).

S. h. jerdoni from Persian Baluchistan, eastern Afghanistan, and winter visitors collected in India: wing, 79, 79, 80, 80, 81, 82, 82, 83 (80.8); tail, 65, 67, 67, 68, 69, 70, 70, 70 (68.2); wing/tail index, 85; bill, 20.5, 21, 21, 21.5, 21.5, 22, 22, 23 (21.5); wing/bill index, 25.5, 26, 26.5, 27, 27.5, 27.5, 28, 29 (27.0).

SYLVIA BORIN

In *Sylvia borin* a very gradual cline of decreasing saturation in the coloration of the upper parts and a change from brownish to grayish pig-

ments runs from west to east from western Europe to Iran and Siberia. The eastern populations are also slightly larger. In specimens that I have measured, 15 adults from western Europe have a wing of 74–80 (77.0) and 15 adults from easternmost Russia and migrants collected in Iran have a wing of 78–85 (81.0). The eastern populations have been separated as *pallida* by Hermann Johansen, in 1907, type locality, Barnaul, western Siberia. Most authors do not accept the validity of this race, but in good series the difference is apparent though relatively slight.

Whether or not *pallida* is accepted is a matter of opinion, but at any rate the difference separating it from nominate *borin* is much too slight to allow the nomenclatural recognition of two intermediates, one of them (*pateffi*) based on only two specimens. The names of these two forms, which I consider to be synonyms of nominate *borin*, are *S. b. kreczmeri* Dunajewski (1938, Acta Ornith. Mus. Zool. Polonici, vol. 2, p. 159, eastern Poland) and *S. b. pateffi* von Jordans (1940, Mitt. K. Naturwiss. Inst. Sofia, vol. 13, p. 105, Bulgaria).

SYLVIA ATRICAPILLA

This species varies geographically, and five races differing slightly in depth of coloration are more or less generally recognized. I have examined close to 400 specimens of four of these races, and this material suggests that some small changes are desirable in the current treatment of the species. The race not examined is *riphaea* Snigirewski, 1931, type locality, Miass, south [eastern] Urals. This race, which apparently is similar in size to nominate *atricapilla*, is said to be darker above in both sexes. Its range extends from the eastern Urals eastward to about the Irtysh.¹ The other four races are as follows:

Sylvia atricapilla dammholzi Stresemann, 1928, type locality, Gilan, southern Caspian districts of northern Iran. A large series shows that this race is paler in both sexes than nominate *atricapilla*. The males are grayer above, with only a very faint trace of olive-brown on the mantle, and are purer white on the belly; the females have a distinctly paler rufous cap. It is about similar in size or very slightly larger than the populations of nominate *atricapilla* from northern Europe (see below). The wing length of 10 adults of each sex taken at random measures in males 75–80 (77.5),

¹ After the present study was completed, some notes were published on *riphaea* by Johansen (1954, Jour. Ornith., vol. 95, p. 106). Johansen, who refers the populations of western Siberia to nominate *atricapilla*, states that *riphaea* is a very local form which requires further study. He doubts that it is valid, for Snigirewski's specimens, which he has examined, fall within the range of individual variation of nominate *atricapilla* from other parts of Russia.

and in females 74–81 (77.0). The breeding range of *dammholzi* extends from the Caucasus eastward to the southern Caspian districts of Iran.

Sylvia atricapilla pauluccii Arrigoni, 1902, type locality, Sardinia. I unite under this name the populations of Sardinia and the Balearic Islands. These populations differ from nominate *atricapilla* by being grayer above in both sexes, the females having a duller and paler rufous cap. They differ from *dammholzi* by being darker and smaller. The population of the Balearic Islands was separated as *koenigi* by von Jordans in 1923, type locality, Mallorca. According to von Jordans (1924, Jour. Ornith., vol. 72, p. 156) *koenigi* differs from *pauluccii* by being paler in males, especially on the neck. It is possible that in large series such a difference can be demonstrated. However, two male topotypes of *koenigi* that I have examined are identical with a good series of males examined from Sardinia. According to von Jordans, *koenigi* is apparently smaller than *pauluccii*, though this is not shown by his comparative measurements. The two males that I have measured from Mallorca have a wing of 68 and 71 and males measured by me from Sardinia, 69, 70, 70, 71, 71, 72, 73, 74.

According to Hartert (1909, Die Vögel der paläarktischen Fauna, p. 585) *pauluccii* is not separable from nominate *atricapilla*, but in the material that I have examined the difference between the populations of Sardinia and the Balearic Islands and topotypical nominate *atricapilla* from Sweden are as stated above. This difference, however, is less clear when the populations of Sardinia and the Balearic Islands are compared with the southern populations of nominate *atricapilla*, and *pauluccii* is, I believe, a rather poorly differentiated race.

Sylvia atricapilla heineken Jardine, 1830, type locality, Madeira. This race is similar (in its normal variety) to nominate *atricapilla* but more saturated throughout, especially in females in which the back, being distinctly darker and more rufous, contrasts less sharply with the rufous of the crown. Hartert united under this name the populations of the Canaries with those of Madeira, but I agree fully with Volsøe (1951, Vidensk. Meddel. Dansk Naturhist. For., vol. 133, pp. 93–94) that the former are not separable nomenclaturally from nominate *atricapilla* and that *heineken* must be restricted to Madeira. The wing length of the population of Madeira is 67–73 (71) in 12 males and 67–74 (70.5) in seven females.

Sylvia atricapilla atricapilla Linnaeus, 1758, type locality, Sweden. In my opinion, the remaining populations of the species all belong to nominate *atricapilla*, but they vary slightly geographically. In coloration the populations of the British Isles and northern Europe (examined from East Prussia, Sweden, and Pskov in western Russia) are brightest in both sexes, and in them the brownish olive tinge of the upper parts is best

indicated. Specimens from northern Italy and Corsica, though still closer in characters to nominate *atricapilla*, approach *pauluccii* by being slightly grayer in both sexes and by having the crown duller rufous in females. Specimens from the southern Balkan Peninsula, Asia Minor, Cyprus, and the Near East are slightly duller and paler than the populations from the British Isles and northern Europe. The populations of the Azores and the Canaries average slightly but distinctly more saturated and more richly colored throughout, especially in females, than the preceding populations and though still closer in characters to nominate *atricapilla* approach *heineken* from Madeira. In these populations the melanistic variety of Madeira (for which the name *heineken* was originally proposed) also occurs but apparently less often than in Madeira. In the Azores, however, this variety is seen often enough, according to Murphy and Chapin (1929, Amer. Mus. Novitates, no. 384, p. 17) to be recognized by a distinct vernacular name.¹

The population of the Cape Verde Islands is similar to that of the Azores and that of the Canaries but averages very slightly duller. Unfortunately I did not examine breeding specimens from north Africa, but it may be mentioned that one male collected at Algiers on September 9 is, in comparative plumage, the darkest of all the specimens that I have examined. It is as deeply saturated below as the normal variety of *heineken* but is still darker above (a deep brown).

A cline of decreasing size running from north to south can be demonstrated in Europe, and the insular populations are somewhat smaller. In adult males, seven from East Prussia, Sweden, and western Russia have a wing length of 72–79 (76.1); six from England, 72–76 (73.5); 10 from Italy, 70–74 (71.6); and five from Corsica, 67–76 (71.2). I have restricted my measurements of birds from the British Isles to specimens collected in May. I cannot be sure that my specimens from Italy and Corsica were local birds, as they were not collected during the breeding season, but they differ in coloration as stated above from specimens in

¹ I have not been able to find adequate information on the relative frequency of this melanistic variety for the various islands. According to the specimens cited in the literature and those that I have examined, the melanistic variety occurred three times out of 81 specimens from the Azores, seven times out of 22 specimens (all examined by me) from Madeira, and was lacking in 17 specimens from Tenerife and La Palma, the only two islands in the Canaries where it seems to occur. It is said, however, to be "not uncommon" on La Palma but is apparently less common there than in Madeira. Although admittedly more abundant in Madeira, the proportions indicated here for this island seem to me to be too high in view of the various reports in the literature.

comparative plumage taken in England at the same time of the year. The populations of the Atlantic islands are small, the population of the Azores averaging slightly the largest. These populations measure: Canaries, 11 males, 68–76 (71.8), six females, 68–74 (70.7); Azores, 20 males, 70–76.5 (73.7), 12 females, 70–77 (73.6); Cape Verde Islands, seven males, 70–74 (71.3), six females, 69–72 (70.5).

SYLVIA COMMUNIS

In *Sylvia communis* the various populations can be divided into two forms, a western and more northern form which ranges from Europe and across western Siberia to the Yenisei in which the upper parts are brownish and the edges of the upper wing coverts, secondaries, and tertials are rufous; and a more southern form ranging from Asia Minor and the Near East eastward across Iran and Turkestan to Mongolia and Sinkiang in which the upper parts are distinctly more gray than brownish, and the edges of the coverts, secondaries, and tertials are sandy or much less strongly rufous. In the second form the flanks are paler and the under parts whiter.

Clinal variations can be demonstrated, and populations intermediate in their characters between the two forms occur. The geographical variation has been expressed by the description of a number of forms, but in my opinion it is sufficient to recognize nomenclaturally but three races. In the browner western and northern form, in which a cline of decreasing saturation and of increasing size runs from west to east, two races can be recognized: nominate *communis* Latham, 1787, type locality, England, restricted to Kent by Clancey (1950, *Auk*, p. 393), and *volgensis* Domaniewski, 1915, type locality, Saratow, southeastern Russia, the two races replacing each other in eastern Russia. The following names should, I believe, be synonymized with nominate *communis*: *cinerea* Bechstein, 1803, type locality, Germany; *hoyeri* Dunajewski (1938, *Acta Ornith. Mus. Zool. Polonici*, vol. 2, p. 232, type locality, eastern Poland); and *jordansi* Clancey, 1950 (*loc. cit.*), type locality, southwestern Scotland. The first two forms show the clinal changes mentioned but to a varying degree are closer to nominate *communis* than they are to *volgensis*. I did not examine adequate material from the stated range of *jordansi*, but I doubt that the slight differences described by Clancey are of taxonomic importance.

The more grayish southern form is separated by various authors into two races: *icterops* Ménétries, 1832, type locality, Talych, eastern Transcaucasia, for the more western populations, and *rubicola* Stresemann,

1928, type locality, Kuldja, western Sinkiang, for the more eastern populations; but a large amount of material examined does not confirm the validity of the latter, which I consider to be synonymous with *icterops*.

Stresemann separated *rubicola* from *icterops* on the sole basis of size, saying that it was similar to *icterops* in coloration but larger in size. He gave no measurements for *rubicola* other than stating that its wing length "occasionally exceeds 80 mm.," his specimens of *icterops* from Iran measuring 71–74 in eight males. Johansen (1954, Jour. Ornith., vol. 95, p. 107) recognizes *rubicola* as being larger and darker than *icterops*. This is contradicted by Grant and Mackworth-Praed (1941, Bull. Brit. Ornith. Club, vol. 61, pp. 27–29) who state that there is no size difference but that *rubicola* is a valid form, being buffier above than *icterops*. The specimens that I have measured scarcely confirm that the eastern populations are appreciably larger; 30 breeding males from Iran have a wing length of 72–81 (75.0), and 12 from Russian Turkestan, 74–79 (76.3). These specimens from Turkestan were taken during May, June, and the first week in July in the Tian Shan (five specimens), and the other seven near and at Djarkent about 100 kilometers or less from Kuldja. I can see no color differences between specimens from Iran and Turkestan if compared in strictly the same stage of plumage. I believe this observation to be valid, for in addition to the specimens measured I have examined more than 80 others from Turkestan and Iran. All plumage states are represented in both sexes, adults, first year birds, and immatures, and more than two-thirds of the specimens were collected on the breeding grounds.

The populations of Asia Minor, Cyprus, and Near East are usually referred to *icterops*. I follow this treatment, but in my opinion these populations are intermediate between nominate *communis* and *icterops*. They are not gray enough nor large enough for true *icterops* but much too poorly differentiated to be separated nomenclaturally. The same is true of the population of Crete. Of five breeding specimens from this island, three are closer to *icterops* and two to nominate *communis*. Stresemann has already noted that the population of Asia Minor measures smaller than true *icterops*. He gives the wing length of four males from the Taurus as 68, 68, 72, 72; five measured by me from Asia Minor and the Near East have a wing of 69, 70, 72, 72, 73, average of nine males, 70.7. Specimens that I have examined from southeastward of the lower Volga were more or less intermediate between *volgensis* and *icterops*, and Johansen cites that other mixed populations occur in the Tarbagatai and Altai.

Winter visitors may be briefly discussed. Grant and Mackworth Praed state that nominate *communis* winters in southern Arabia as well as in tropical and southern Africa. They separate birds in their winter quarters

into nominate *communis*, *icterops*, and *rubicola* and give the distribution of these specimens. I find with Chapin (1953, Bull. Amer. Mus. Nat. Hist., vol. 75A, p. 467) that racial differences are not very clear in birds wintering in Africa. I have stated above that I cannot separate *rubicola* from *icterops*, and I find it impossible to identify with certainty all my winter visitors to Africa as either nominate *communis* or *icterops*. Specimens that appear to be the latter have not been examined by me west or south of Uganda, though I do not doubt that *icterops* penetrates farther south in east Africa. I am inclined to doubt, however, that nominate *communis* is the wintering form of southern Arabia. Ten adult specimens examined by me from southern Arabia collected from September 4 to 27 appear to me to be *icterops*, not nominate *communis*, but these specimens may have been on passage. On geographical grounds and the known distribution of the species and its migrations one would not expect nominate *communis* to winter normally in southern Arabia.

SYLVIA CURRUCA AND ITS ALLIES

The Lesser Whitethroats (*S. curruca* and allies) can be divided into three types which differ slightly from one another morphologically: a gray, almost ashy, and somewhat larger form (*althaea*) with a somewhat heavier bill; a form (*minula*) which is very pale and sandy above and which has a small bill; and an intermediate form (*curruca*). Two species are usually recognized, *S. althaea* on the one hand and *S. curruca* including *minula* on the other, although Dementiev (1935, L'Oiseau, pp. 317-319) treats all three as conspecific. My examination of large series recently collected by Koelz shows, however, that the breeding ranges of all three overlap over a large part of Iran and that accordingly they must be considered to be separate species.

These specimens show that all three breed in Mazenderan at the southeastern end of the Caspian as well as in the Zagros in southern Iran. According to Zarudny's list (1911, Jour. Ornith., vol. 59, p. 224) the three species also breed in Khorasan. In this list he states also that all three breed in the southern Caspian region, and that *curruca* and *althaea* breed in the Zagros, and *minula* and *althaea* in southeastern Iran. The statements of Zarudny, which may have been questioned because he called some of his sympatric forms by the same specific name, have nevertheless been confirmed by the specimens that I have examined.

The distribution in Transcaspia is not clear, but I believe that *S. curruca* and *S. minula* are probably sympatric also in parts of this region. Sushkin (1904, Bull. Brit. Ornith. Club, vol. 14, p. 43) apparently believed that *minula* bred in Transcaspia, for he states that "true" *minula*

of Hume does not breed north of the valley of the Syr Darya. Snigirewski (1927, *Ornith. Monatsber.*, vol. 35, p. 36) states that "true" *minula* has never been found to nest in Transcaspia, but in 1929 (*Jour. Ornith.*, vol. 77, p. 258) he described as *jaxartensis*, type locality, Syr Darya, a form which appears to be identical with nominate *minula* Hume. In 1927 he described as *turkmenica*, type locality, Repetek, a form from southern Transcaspia which his description shows to be clearly of the *curruca* type, because he states that it is gray and lacks the sandy coloration so characteristic of *minula*. Snigirewski states that the range of *turkmenica* is eastern Turkmenistan, but in this region *S. minula* is said to nest at Kilif on the Amu Darya by Bilkevitch and Zarudny, quoted by Ivanow (1940, *Oiseaux du Tadjikistan*, p. 232). The only specimens examined by me from Transcaspia are specimens of *S. minula* collected on April 12, 18, and 20 [April 26 to May 4] at Uch Adzhi, Peski, and Repetek, and on August 3 and 13 [August 17 and 27] at Repetek and vicinity. On these dates these specimens could have been migrants, but Transcaspia seems to be well suited ecologically to *S. minula* which appears to be chiefly a bird of the desert or arid and barren regions. *Sylvia curruca*, while breeding in almost any type of country, prefers more grassy regions with bushes and trees, such as steppes, and *S. althaea* seems to breed only in mountainous regions, on sparsely wooded or brushy slopes. These ecological preferences separating such closely related forms suggest that they are separate species.

A number of races have been separated from *S. curruca*, *S. minula*, or *S. althaea*. The following may be briefly discussed.

Sylvia caucasica Ognew and Banjkowski, 1910, type locality, Transcaucasia, is in my opinion a synonym of nominate *curruca* Linnaeus, 1758, type locality, Sweden. This has already been stated by Hartert and Steinbacher (1934, *Die Vögel der paläarktischen Fauna*, suppl. vol., p. 275) who found that specimens from northern Iran are not separable from typical nominate *curruca*. Snigirewski (1929) recognized *caucasica* and gave its range as extending from the lower Volga, Asia Minor, and Palestine eastward through the Caucasus to northern Iran. I am unable, however, to separate breeding specimens from the lower Volga, Palestine, and northern Iran from topotypical nominate *curruca*.

Sylvia curruca jaxartica Snigirewski, 1929, type locality, Syr Darya, is in my opinion a synonym of nominate *minula* Hume, 1873, type locality, Bahawalpur, and not of *S. c. halimodendri* Sushkin, 1904, type locality, Kirghiz Steppes, as stated by Hartert and Steinbacher and Dementiev. According to Snigirewski, *jaxartica* is identical in coloration with *minula* Hume but differs by having a larger bill and a longer wing

and tail. The measurements given by Snigirewski scarcely confirm an appreciable difference, the wing averaging only 0.3 mm., and the bill 0.6 mm., and the tail 1.5 mm., longer in *jaxartensis*.

Sylvia margelanica Stolzmann, 1897, type locality, Ferghana, seems to be a valid race of *S. minula*, differing from nominate *minula* by being larger. Dementiev states that the eastern populations of *minula* are larger but does not recognize *margelanica*. In adult males measured by me the wing length in four specimens from Zaidam and Kansu is 67–72 (69), in five from western Sinkiang 61–63 (62), and 15 from Iran 59–65 (62.5). *Sylvia minuta margelanica* was based on long-winged migrants taken in Ferghana.

Sylvia althaea zagrossiensis Zarudny, 1911, type locality, Zagros Mountains, appears to be a valid race, differing from nominate *althaea* Hume, 1878, type locality, Kashmir, by showing less of a contrast between the gray of the crown and mantle, by showing slightly less white in the tail, and by having a somewhat more slender bill. The validity of *zagrossiensis* or in fact the occurrence of *S. althaea* in the Zagros has been questioned, but the specimens collected by Koelz confirm that this species breeds in this region. It should be mentioned, however, that in specimens in very worn plumage it is not always possible to distinguish with certainty between *S. althaea* and *S. curruca*. The bill characters, taken by themselves, are not diagnostic, as they are slight and vary individually.

SYLVIA MELANOCEPHALA AND ITS ALLIES

The Sardinian Warbler (*S. melanocephala* and allies) consists of three forms: *S. melanocephala*, which is distributed throughout the countries bordering the Mediterranean, in its islands (Cyprus excepted), and in the Canaries, and is divided into several subspecies; *S. melanothorax*, which is restricted to Cyprus; and the monotypic *S. mystacea*, which replaces the other two forms in the east from the lower Volga, Caucasia, and Palestine to Afghanistan and Russian Turkestan. *Sylvia mystacea* is highly migratory, wintering in the Sudan, but the other two forms are chiefly sedentary.

It is customary to treat the three forms as conspecific, though Hartert and Steinbacher (1934, Die Vögel der paläarktischen Fauna, suppl. vol., p. 277) object that this treatment is open to question. They state that the morphological differences separating *melanothorax* from the other two are great and that the distribution of *mystacea* suggests that it is a separate species.

Whether or not *melanothorax* is conspecific with *melanocephala* is a

matter of opinion. To me the two forms appear to be very closely related and, being geographical representatives, can be treated as conspecific. The conspicuous difference that separates the two is one of degree only. In *melanothorax* the black pigments are better developed throughout, and on the throat and breast the black bases of the feathers show through abundantly on the surface, giving these parts a mottled appearance, whereas they are concealed in *melanocephala* in which the throat is white and the breast white slightly tinged with grayish or pinkish.

The differences in pattern or pigmentation between *melanothorax* and *melanocephala* on the one hand and *mystacea* on the other are also of degree (in male *mystacea* the "black" crown is much more reduced and not sharply defined, the sides of the face are gray not black, and the "black" of the crown is ashy or sooty but not pure glossy jet-black as in the other two), but *mystacea* has probably reached species level, for it appears to be sympatric with *S. melanocephala* (race *momus* in Palestine). *Sylvia melanocephala momus* breeds in the Near East, in the highlands as well as in the lowlands, in Syria, Lebanon, and Palestine. According to Meinertzhagen (1920, *Ibis*, p. 221) it is a common resident in the Jordan Valley, from where I have examined a specimen taken on May 7 at Jericho. *Sylvia mystacea* breeds near Jerusalem, as Hartert has shown (1925, *Jour. Ornith.*, vol. 73, p. 288). The specimens that he discusses and that I have examined are birds which were collected on May 13 and 15, with their nests and eggs, at Ain Kaniel in the Wadi Hamisch, about 10 or 11 miles north of Jerusalem.

This record of the breeding of *S. mystacea* in Palestine may represent a secondary westward expansion of this form, which breeds commonly in Iraq, but the specific distinctness of *S. mystacea* is supported by structural or other differences which separate it from *S. melanocephala*. This last form has different proportions, a distinctly bigger bill, and a different wing formula. In *S. melanocephala* the tail is absolutely as well as proportionately longer. In 10 male topotypes of nominate *melanocephala* the tail measures 60–68 (64) mm. and is as long as or longer than the wing, the wing/tail index being 100–109 (106) per cent. In 10 breeding males of *S. mystacea* from Iran the tail measures 50–56 (53.5) and the tail is always distinctly shorter than the wing, the wing/tail index being 80–92 (86). In these 10 specimens the bill measures 14.5–16 (15.2) in *melanocephala* and 12.5–14 (13) in *mystacea*, the difference in appearance being much more conspicuous than indicated by these measurements. In *S. mystacea* the wing tip is more pointed. In the 10 specimens the second primary is equal to the sixth in six specimens, slightly longer in two specimens, and falls between the sixth and seventh in two specimens;

the third and fourth are subequal and longest. In the 10 topotypes of nominate *melanocephala* the second primary is equal to the eighth in eight specimens and to the seventh in two; the third, fourth, and fifth are subequal. These differences in wing formulas may be correlated with migratory habits. *Sylvia mystacea* is migratory, and even its southernmost breeding populations, those of Iraq, leave this region from December to March, according to Ticehurst (1922, Jour. Bombay Nat. Hist. Soc., vol. 28, p. 392), whereas *S. melanocephala* and *melanothorax* are sedentary or largely so. These last two forms are similar in their structure, though the bill of *melanothorax* is about intermediate. It may be mentioned also that Hartert (1925) found the eggs of *S. mystacea* to be "much smaller than is normal in *S. melanocephala*."

In *S. melanocephala* the status of the populations of the Canaries is disputed (for a discussion, see Volsøe, 1951, Vidensk. Meddel. Dansk Naturhist. For., vol. 113, pp. 98-99). Some authors question the validity of *leucogastra* Ledru, 1810 (type locality, Tenerife, western Canaries), which is said to differ from nominate *melanocephala* Gmelin, 1788 (type locality, Sardinia), by being smaller, by showing less white at the tips of the outer tail feathers, and by being grayer above in the female. Other authors state that *leucogastra* breeds throughout the Archipelago, while other authors restrict this form to the western islands, stating that it is replaced by *leucogastra* in the eastern islands.

Volsøe explains these contradictory statements by stating that it is "very likely" that winter visitors occur "in appreciable numbers" in the eastern islands, but I doubt that this is so, in view of the fact that *S. melanocephala* is not truly migratory. I find, at any rate, that specimens collected in the eastern islands (Fuerteventura and Lanzarote) during and before or after the breeding season are identical. These specimens are similar to specimens collected in the western islands and to the large majority of the specimens examined in a series of breeding birds from Morocco and Algeria. A very slight cline of increasing saturation runs from east to west on the continent and in the islands, and all these populations taken as a whole differ from topotypical nominate *melanocephala* as to color, as mentioned above, but the differences are very slight as stated by Bannerman. This author upholds the validity of *leucogastra*, but the characters of this form are much too slight in my opinion to warrant nomenclatural separation or the extension of the range of this very poorly defined form to the continent. Some of these slight characters are shown also in most of the specimens from southern Algeria which Hartert believed to be winter visitors but which may have been local birds or birds that had bred near by.

No separation is possible on the basis of size, although a very slight cline of decreasing size may accompany the cline in saturation. In adult males measured by me the wing length is as follows: 10 males from Sardinia 57–62 (60); southern Morocco (breeding specimens only), seven specimens 57–61 (59.3); eastern Canaries, four specimens 57–60 (58.3); western Canaries, five specimens 55–59 (57.0).

SYLVIA CANTILLANS

In this species, Orlando (1937, Riv. Italiana Ornit., vol. 7, p. 213) has separated as *moltonii* the population of Sardinia. In his diagnosis and again in the long discussion of this form (1939, Riv. Italiana Ornit., vol. 9, pp. 148–177) the author does not seem to take into account the high degree of individual variability in the coloration of the under parts of this species. For instance, in nominate *cantillans* the under parts of the male vary from pinkish to terracotta, and the distribution of the pigment is very variable; in some specimens the pigments are restricted to the throat and in others invade the belly. As far as I can judge from Orlando's account, for I did not examine adult males from Sardinia, the coloration in this population seems to fall within the range of individual variation in nominate *cantillans* or *inornata* from north Africa. Two specimens examined by me from Sardinia, a fledgling just out of the nest and a male in first winter plumage, do not differ from specimens in similar plumage from Italy, and I consider *moltonii* to be synonymous with nominate *cantillans*.

SYLVIA CONSPICILLATA

In this species, Gyldenstolpe has stated (1925, Bull. Brit. Ornith. Club, vol. 46, p. 48) that *bella* Tschusi, 1901 (type locality, Madeira), is "a pure synonym" of *orbitalis* Wahlberg, 1853 (type locality, Cape Verde Islands), because he found that Wahlberg's types "are perfectly identical both as regards size and colour" with a series that he has examined from Madeira and the Canaries. I do not know the extent of the material available to Gyldenstolpe from the Cape Verde Islands other than the two specimens (an adult of each sex) mentioned by Wahlberg, but the material that I have examined does not support Gyldenstolpe. I agree that the populations do not seem to differ in size, but the population of Madeira differs distinctly in both sexes and in all stages of plumage by being darker and more richly colored above and below than specimens in comparative plumage from the Cape Verde Islands and the Canaries. The males have a darker gray crown, are more rufous, less gray on the mantle, the rufous edges of the secondaries and coverts are darker, the

lower throat and upper breast grayer, and the rest of the under parts are more saturated. The females are a darker, more rufescent brown above and are more saturated below. Specimens from the Canaries are about intermediate in their degree of saturation between those of Madeira and the Cape Verde Islands but on the whole are closer to the latter. The material examined by me consists of 12 specimens from the Cape Verde Islands, 18 from Madeira, and 19 from the Canaries.

I do not propose, however, that a separate subspecies be recognized nomenclaturally for the population of Madeira, for, because the population of the Canaries is about intermediate in characters between toptypical *bella* and *orbitalis*, it seems best to combine the three insular populations under the latter name which is older.

The degree of saturation of the various populations is apparently correlated with the rainfall or general degree of humidity of the various islands, and the population of the arid eastern Canaries might be expected to be paler than that of the western islands of this group. Volsø (1951, Vidensk. Meddel. Dansk Naturhist. For., vol. 113, p. 96) remarks that Hartert refers the population of Fuerteventura to nominate *conspicillata* without giving reasons. The Rothschild Collection contains only two specimens from Fuerteventura, both taken in March. One of these specimens (not included in the 19 specimens mentioned above) is distinctly paler and appears to be a winter visitor of nominate *conspicillata*. The other, which belongs to the insular form, is identical with toptypical *orbitalis* and is therefore slightly paler than specimens from the western islands.

SYLVIA UNDATA

This species has been divided into seven races, which vary slightly in depth of coloration. According to the material that I have examined, which includes adequate toptypical series of six of these races (the one which I have not examined is *naevalbens* Clancey, 1948, Ibis, p. 597, type locality, Taranto, southeastern Italy), only three races, possibly four if the validity of *naevalbens* is confirmed, are sufficiently well differentiated to warrant nomenclatural recognition. They are:

1. *Sylvia undata dartfordiensis* Latham, 1790, type locality, Dartford, southern England, of which I consider *aremorica* Palluel, 1899, type locality, Brittany, to be a synonym. *Sylvia u. dartfordiensis* is a dark form with brownish upper parts, locally distributed in southern England and northwestern France. The birds of France are said to average not quite so brown above as the birds of England, and *aremorica*, while it may be somewhat intermediate between nominate *undata* and *dartfordiensis*, is

generally admitted to be much closer to the latter. Four specimens examined by me from Brittany are identical, however, with a series from England.

2. *Sylvia undata undata* Boddaert, 1783, type locality, Provence, from which *corsa* Laubmann, 1913, type locality, Corsica, is not separable. *Sylvia u. undata* is paler and grayer than *dartfordiensis* and ranges from southern France to central Spain, Italy, Corsica, Sardinia, and Sicily. Although *corsa* has been separated on the basis of being darker above and smaller than nominate *undata*, I cannot confirm any difference in color or size. In eight adult topotypes each of *corsa* and of nominate *undata* the wing measures 52–55 (53) and the bill 12.5–14 (13.4) in *corsa*, and 52–57 (53.5) and 12.5–13.5 (13.3) in nominate *undata*. Clancey (1948) states that *corsa* is not stable, but he recognizes it as a valid form intermediate between nominate *undata* and his *naevalbens*. If so, *naevalbens*, described as “appreciably darker” and more vinaceous than nominate *undata*, may not be found to be sufficiently well differentiated from this last form to warrant recognition.

3. *Sylvia undata toni* Hartert, 1909, type locality, Biskra, of which *tingitana* Rothschild, 1932, type locality, Spanish Morocco, is I believe a synonym based on individual variants. The specimens in the Rothschild Collection from north Africa studied by Hartert and by Rothschild do not show convincing evidence of geographical variation, although the type of *tingitana* is abruptly darker throughout than the type of *toni*, but these two specimens represent the extremes in the range of individual variation of the series. This series consists of 10 specimens taken from January 14 to March 17 at Biskra in southern Algeria on the edge of the Sahara and south of Biskra, eight breeding specimens taken from May 19 to 31 at Hamman R'hira near Algiers, and five specimens taken in Spanish Morocco at the end of March and April, plus two or three other isolated specimens. The series from Biskra and Spanish Morocco on which *toni* and *tingitana* were respectively based vary individually. Most of the specimens in the series from Biskra (which consists probably of winter visitors) are relatively pale, the type of *toni* being one of the palest specimens. Some specimens are darker and match the breeding specimens from Hamman R'hira, while these match four of the five specimens from Spanish Morocco in the coloration of the upper parts and three of these five specimens in the coloration of the under parts, the darkest specimen of all being the type of *tingitana*. While it is possible that the population of Morocco may be found to differ from that of Algeria, the adequate series examined by me vary too much individually

for the existence of a constantly darker race in Morocco to be established with certainty.

Witherby (1928, *Ibis*, pp. 599-600) found that the population of central and southern Spain approached *toni* in characters and that the population of Portugal was darker than the population of Spain and perhaps referable to "*aremorica*." I have examined only one specimen from Portugal, two from central Spain, and three from southern Spain. The Portuguese specimen is identical with the paler and grayer birds of *toni* from Algeria. The specimens from central Spain are not separable from nominate *undata*, and those from southern Spain, while intermediate, are perhaps nearer to *toni* in characters. I would then define the range of *toni* as extending from Portugal and southern Spain to northwest Africa from Morocco to Tunisia. This race may be characterized as being darker, more slaty, less grayish above and darker, more vinaceous, below than nominate *undata*; colder in tone, more slaty, less brownish above than *dartfordiensis*. It is always said to be smaller than these two forms, but this is scarcely confirmed by my measurements, the wing length in 22 adults from north Africa being 50-54 (52), in eight topotypes of nominate *undata* 52-57 (53.5), and in eight *dartfordiensis* from southern England 51-54 (53). I am unable also to confirm appreciable differences in the length of the tail.

