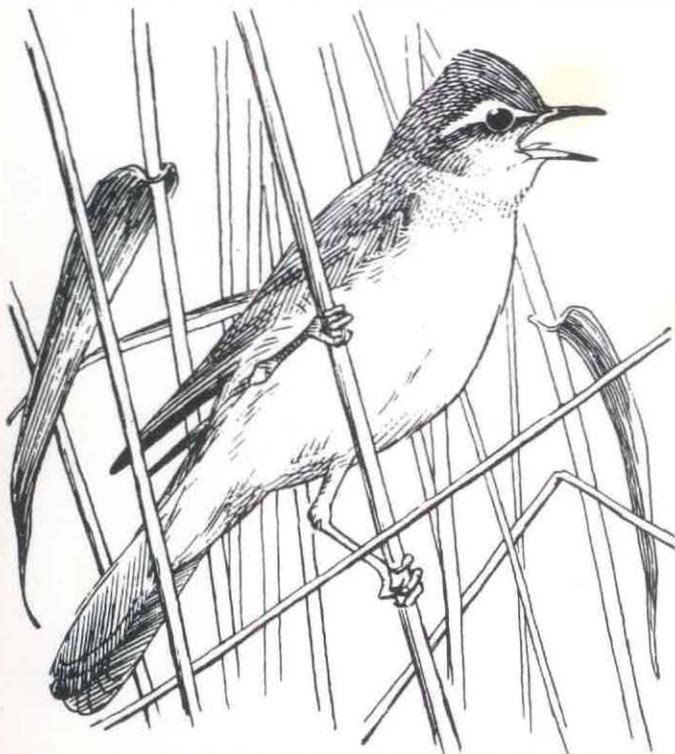


IDENTIFICATION
FOR RINGERS

1



The Genera

CETTIA

LOCUSTELLA

ACROCEPHALUS

and

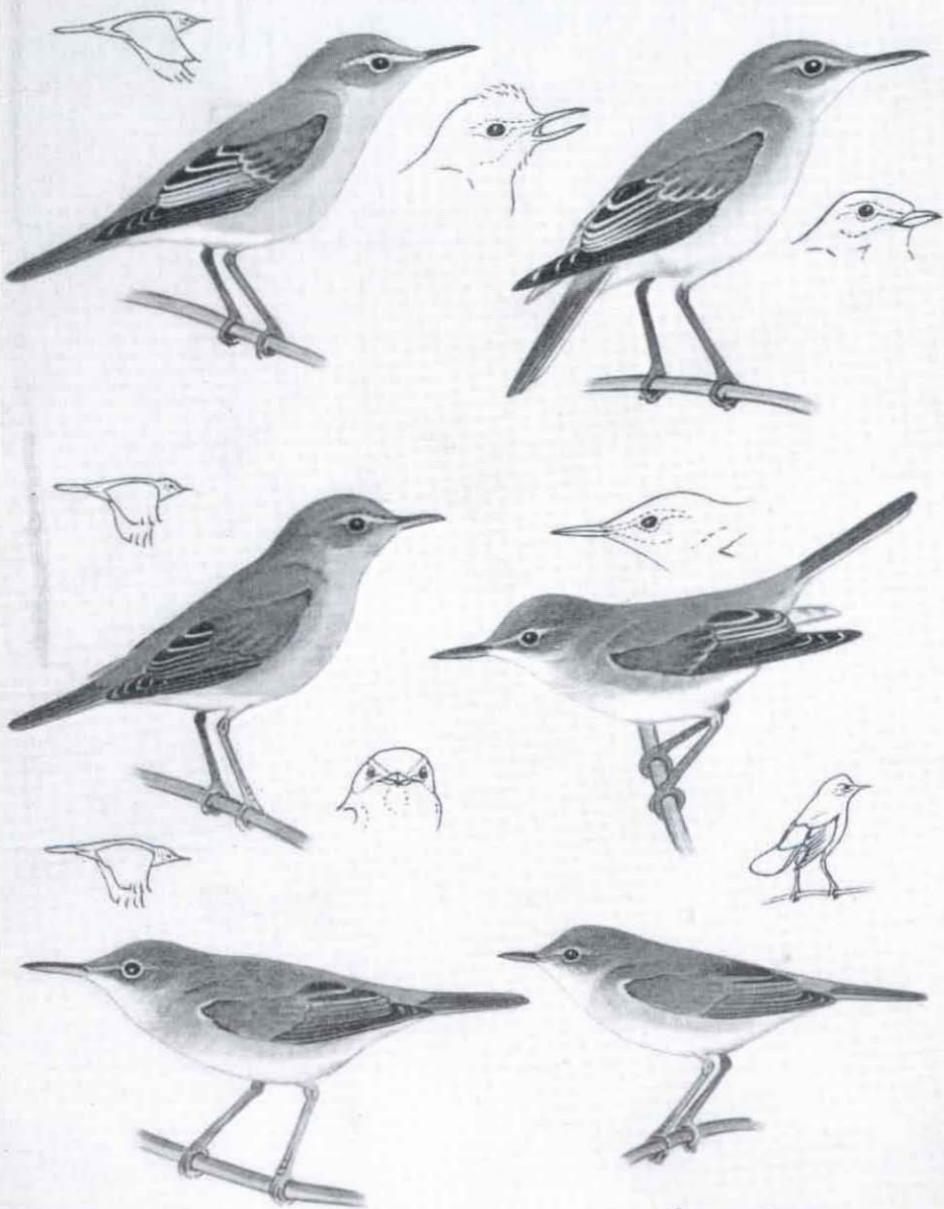
HIPPOLAIS

by KENNETH WILLIAMSON F.R.S.E.
(Population Research Officer B.T.O.)

BRITISH TRUST FOR ORNITHOLOGY
IDENTIFICATION GUIDE NUMBER ONE
FIELD GUIDE NUMBER SEVEN

OCTOBER 1976

Revised Edition



Breeding plumages of *Hippolais* warblers. Left: Icterine Warbler *H. icterina*, Melodious Warbler *H. polyglotta* and Olivaceous Warbler *H. pallida*; compare also flight silhouettes and note inset singing Icterine and head-on Melodious. Right: Olive-tree Warbler *H. olivetorum*, Upcher's Warbler *H. longuida* and Booted Warbler *H. caligata*; note also inset angled head of Olive-tree, and Upcher's with crown feathers depressed and chat-like stance.

(Drawn by D. I. M. Wallace

IDENTIFICATION FOR RINGERS

1

The Genera

CETTIA, LOCUSTELLA,
ACROCEPHALUS and HIPPOLAIS

by

KENNETH WILLIAMSON, F.R.S.E.
(Populations Research Officer, B.T.O.)

THIRD
REVISED AND ENLARGED EDITION

BRITISH TRUST FOR ORNITHOLOGY

IDENTIFICATION FOR RINGERS 1

(B.T.O. Field Guide No. 7)

by K. Williamson, F.R.S.E.

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INTRODUCTION

THERE IS LITTLE DOUBT that the next decade will see a great change in field-ornithology in this country, and the pattern of this change is already becoming clear. The growing enthusiasm for serious field-work, including migration studies along lines established by bird observatories—both at permanent observatories and at new and often temporary situations pioneered by keen amateurs—together with the increasing use of mist-nets and the development of other trapping techniques as an aid to bird-ringing, bring the rare bird within reach of every active worker, and invest him with a greater responsibility for correct identification than ever before.

No fewer than thirty new forms were added to the British avifauna between 1947 and 1959, eleven of them of Palearctic origin—an average of one new Palearctic bird a year; and, with increasing opportunities and efficiency, there is no reason why this rate should not be continued. Species and subspecies which have occurred on only one or a few occasions will come to notice more frequently, and some which have not yet been admitted to the British List (and which are not therefore described in *The Handbook of British Birds* or P. A. D. Hollom's more recent work) may be expected to appear. We have already reached the stage where the genus *Hippolais* is proving something of an embarrassment, due to incomplete knowledge of the species characters at different seasons; and there are other genera such as *Acrocephalus*, *Locustella* and *Phylloscopus* which are equally fraught with potential headaches for the man with a mist-net or a Heligoland trap.

Since the basis of all knowledge is correct identification—not only of species, but of race, age and sex where possible—the time is ripe for a publication designed to arm the field-worker with such information, in a condensed form, as will enable him to identify in the hand the rare species and 'extra-limitals' which could conceivably come his way in the course of trapping and bird-ringing.

Scope of the Work

This is not a formal taxonomic review, and my main purpose has been to ferret out points which I think will assist the identification in the hand of those birds, species or subspecies, which have even an outside chance of drifting to the British Isles. It has nevertheless been necessary to adopt a taxonomic approach, since at one or two points I have found myself in disagreement with the most recent review, Charles Vaurie's *The Birds of the Palearctic Fauna—a Systematic Reference*. This excellent work deals most competently with relationships and distribution, but has the drawback for the field-taxonomist that it lacks the plumage descriptions, wing-formulae and measurements which are fundamental to correct identification. It should, however, be in the library of every bird observatory, and access to it cannot but enhance the competence of all who trap and ring migrants on any scale. The reader is referred to this work for a full statement of distribution, since only the bare outline is given in the *Guide*.

I have kept plumage descriptions to a minimum: in the case of the more familiar birds, adequate data are given in *The Handbook* and *The Popular Handbook*, whilst illustrations can also be found in the field-guides by Peterson, Mountfort and Hollom, and Fitter and Richardson, to mention a few recent works. For this reason, more space is allotted to a discussion of the unfamiliar extra-limital forms, and those in which confusion with a commoner species could arise. In these genera the sexes are alike in plumage; in general, 1st-winter birds are separable from adults, and the main points of distinction are given. The information on the colours of bill, legs, inside of mouth and iris has been culled partly from the literature, and partly from collectors' notes on the labels of museum specimens, written when the birds were freshly killed. Since the work is intended for the use of those who *handle* birds, I have not added to its bulk by setting down field-characters (except in a few special cases) but have included references to notes on this subject in the journals.

Many of these birds have narrow, dark 'fault-barring' across the tail; such bars arise during the growth of the feathers, resulting from their irregular protrusion from the protecting sheaths, and their presence is not therefore mentioned under the separate species. In some cases, where it may aid identification, the wing/tail ratio (or tail-length expressed as a percentage of wing-length) is given under 'Measurements'.

Measurements

Under each species is given in standard form, for ♂ and ♀, the measurements (in millimetres) of wing, tail, bill and tarsus in the samples examined. The size of each sample can be found on reference to the appropriate Table, together with the means and standard deviation and a calculated theoretical range based on the means \pm three times the standard deviation, within which virtually any example of the particular category might be expected to fall.

In these genera the tail is more or less graduated or rounded, and a final note under this section gives the range of millimetres by which the outermost feathers (and sometimes the penultimate ones) fall short of the longest middle pair.

Wing-formula and Moult

Two methods of numbering the remiges are at present in use. The convention with which field-workers in this country, and in Europe generally, are familiar numbers the primaries 1-10 ascendantly, i.e. from the outside of the wing towards the body; while in the other, widely used in America, the primaries are numbered descendantly, i.e. from mid-wing outwards. By this system the minute 'first primary' of the one system becomes the 'tenth primary' of the other in Palearctic passerines. The latter convention accords better with scientific thought and practice; for whenever loss of primaries has occurred in the course of evolution it is the outermost digital set that has been affected, so that only by numbering descendantly can lost feathers be ignored and the rest charted as a homologous series in all families and orders. Moreover, since the primaries are replaced descendantly, this convention follows the orderly sequence of moult in all but a few species. Taxonomists and morphologists have usually regarded this convention as the more logical and practical alternative, and probably the day is not far distant when its use will be universal.

Meanwhile, the other convention has the authority of most books and papers which deal with identification, including Hartert (1910), *The Handbook of British Birds*, C. B. Ticehurst's *The Genus Phylloscopus*, and now Vaurie (1959), and since the purpose of a *Guide* of this nature is to make matters easier for the user, not to

introduce difficulties and increase the risk of misidentification, it has seemed better to keep to the 'traditional' convention for the statement of wing-formulae. For the most reliable method of measuring a live bird, and noting the wing-formula, see B.T.O. Field Guide no. 6, *The Bird in the Hand*, by R. K. Cornwallis and A. E. Smith.

In the sections dealing briefly with moult, however, the opposite system of numbering has been used, not only for the very good reason that the moult of primaries is descendant, but also because practically all writers on the subject have followed this system, and it seems best to fall into line. This duality introduces a seeming inconsistency into the present work, but should satisfy both those whose main concern is easy and accurate identification, and those whose interests lean towards morphological studies. As an additional safeguard against the possibility of confusion, a reminder as to which system is employed, ascendant or descendant, is given in appropriate places in the text.

I have set out the wing-formula data in such a way as to facilitate comparison of one form with another, and for ease of reference the same scheme has been maintained throughout. In this section it will be understood that '+' and '-' are shorthand for 'longer than' and 'shorter than', that 'p.' and 's.' represent 'primary' and 'secondary' (with 'pp.' and 'ss.' as the plural), and that 'p.c.' means 'primary coverts'. The figures (unless otherwise stated) express a value in millimetres shorter than the wing-point or tip of the longest primary in the closed wing. In the absence of a statement to the contrary, the wing-formula given is good for all the races mentioned under the species.

The time of the post-nuptial moult of remiges and rectrices is often important in enabling the trapper to determine the age of his bird. Moult in Palearctic passerines has been surprisingly little studied, and this is a field in which those who handle live birds for ringing can make a valuable contribution to our knowledge. The statements given in *The Handbook* are unfortunately not always reliable and often conflict with one's findings after studying museum material. Partly for this reason, and partly to emphasize the value and importance of this aspect of ornithology, I have dealt with moult in some detail, giving an account of how and when this takes place, in so far as I have been able to determine the facts from skins. As the B.T.O. Moult Enquiry (see Corn-

wallis and Smith, 1960) gets under way, our knowledge in this field will increase. Meanwhile, it will be clear from the little information available for most species that a full statement will not be possible for many years to come—indeed, perhaps not until trapping and ringing in Africa, India and S.E. Asia undergo a similar revolution to that which is apparent in Britain today.

British Trust for Ornithology

KENNETH WILLIAMSON
(Migration Research Officer)

PREFACE TO THE SECOND EDITION

IN REVISING *Identification for Ringers no. 1* the opportunity has been taken to enlarge and re-cast the material so that this new edition will be more nearly a companion-volume to guide no. 2, which deals with the genus *Phylloscopus*.

As in that guide, I have arranged the birds of the 'reed-marsh' group of warblers in accordance with primary plumage characters and size, and this has meant sinking two monotypic genera, *Luscinola* and *Phragamaticola*. The genus *Acrocephalus* is a very varied one in so far as wing-formula and structural characters are concerned, and I can see no grounds which seem to me to justify the separation of the Moustached Warbler *melanopogon* from the streaked members of *Acrocephalus* in a genus of its own. Indeed, this almost traditional arrangement has tended to obscure the bird's true relationship, for Dresser (1902), Hartert (1910), *The Handbook of British Birds* (1938) and many other works interpose the genus *Locustella* between the Moustached and the closely similar Sedge- and Aquatic Warblers. Colin Harrison and Shane Parker, working independently on this group at the British Museum (Natural History), hold similar views, and recommend that *Luscinola* should be synonymized with *Acrocephalus* (*Bull. B.O.C.*, in press).

There might be more justification for upholding the monotypic genus *Phragamaticola*, in view of the Thick-billed Warbler's exceptionally rounded wing, long rounded tail, and short bill;

but a number of taxonomists have recently merged this genus with *Acrocephalus*, which is certainly not too restricted to contain it, and this step has been followed here.

I have added to each species a paragraph dealing with habitat and voice, and have given details of the better-marked geographical races under separate headings. There is an additional species, CETTI'S WARBLER, since this has occurred several times in recent years well to the north of its normal limit in Central France. There are four new plates—two from unique photographs of GRAY'S GRASSHOPPER and THICK-BILLED WARBLERS, obtained in Amurland by Miss Irene Neufeldt of the Leningrad Academy of Sciences; and two of British breeding birds, GRASSHOPPER and SEDGE WARBLERS, kindly supplied by Eric Hosking.

Finally I have prepared three keys—one to the genera, the others to the species and better-marked geographical races—and instructions as to how these keys should be used will be found in an introductory note on p. 70.

KENNETH WILLIAMSON

Oxford

31 October 1962

PREFACE TO THE THIRD EDITION

THIS IS almost a straight revision of the one published in March 1963, with certain sections—particularly those on song, habits, and distribution—amplified in the light of knowledge gained in recent years. For this information I am grateful to many workers whose contributions are acknowledged in the text. For a short additional section on the field characteristics of the *Hippolais* warblers, and the excellent drawing which accompanies it, I am grateful to my friend D. I. M. Wallace. My thanks are due to the journal *British Birds* for kindly making available the block, which appeared with his paper 'Field Identification of *Hippolais* warblers' in vol 57, pp. 282-301.

Beech Grove,
Tring, Herts.

KENNETH WILLIAMSON

22 February 1968.

Genus CETTIA

CETTIA CETTI (Temminck)

*Cetti's Warbler**C. cetti cetti* (Temminck)

Upper parts dark chestnut-brown, becoming rufous on lower mantle, rump and upper tail-coverts. Straight greyish-white supercilium, dark lores, pale greyish-brown cheeks, ear-coverts and sides of neck. Chin and centre of throat white, rest of under parts dull white suffused with greyish-brown on sides of breast, darker brown on flanks. Sometimes a faint primrose wash on centre of breast and belly. Under tail-coverts dark brown with prominent whitish fringes, reaching half-way along tail. Wings and tail blackish-brown in fresh plumage, the feathers with chestnut fringes (especially tertials and coverts). Axillaries and under wing-coverts greyish-white mixed with pale brown.

Inhabits thickets and tangled vegetation along woodland streams or close to more open water, or reed-beds; also bushes in marshy areas: in Near East haunts oleanders etc. in marshy gullies, rarely appearing on dry hillsides. Call-note a startling *chik-chik* or *chi-wik* repeated, 'like a Blackbird but smaller in compass' (H. Lynes). Song a brief, abrupt outburst of loud notes, *chee, che-wee* etc. or *chee, che-weechoo, weechoo* with minor variations (*The Handbook*, ii, 28). For additional observations, and a good series of photographs by M. D. England, see I. J. Ferguson-Lees, *Brit. Birds*, 57: 357-9.

Ageing. Juveniles are less rufous above, greyer below, than adults.

Colours of soft parts. Bill: upper mandible and tip of lower dark purplish-horn, rest of lower mandible pinkish. Legs: amber, pale flesh, pinkish. Mouth: pinkish to orange-yellow. Iris: dark sepia.

Measurements. Wing, ♂♂ 58-64, ♀♀ 51-57 (a few ♀♀, 59-61, are probably wrongly sexed). Tail, ♂♂ 54-65, ♀♀ (48) 50-56. Bill, 13-15. Tarsus, 20-23½, mostly 21-22½. See Tables on pp. 66, 68.

Tail, often as long or longer than wing (wing/tail ratio of over 60 birds is mostly 94-105), comprises ten broad, round-tipped feathers. Strongly rounded, outer feathers 10-15, penultimate feathers 5-8. Underside of shafts white, outermost pair slightly curved.

Wing-formula (pp. ascendant). Emarginated 2nd-6th. 1st p. about half length of 2nd, 9-13 + p.c.

Wing-point 5th, usually = 4th, occasionally = 6th; otherwise 4th and 6th to 2 shorter. 3rd, $1\frac{1}{2}$ -4; 7th, 2-4 $\frac{1}{2}$; 8th, 4-6; 10th, 8-10.

2nd, 8-12, is only rarely as long as 10th p. Rather indistinct notch on inner web falls about opposite shortest tertial. Ss. about 5 shorter than 10th p.

Moult (pp. descendant). No moulting material seen, but it is apparent from the worn appearance of spring birds that a complete moult takes place after breeding, probably late July—early September. According to *The Handbook* (ii, 29) there is a body-moult, including wing-coverts and apparently the tertials, in March (cf. *albiventris*).

Distribution. Spain, Portugal, France (in 1961, north to S. Morbihan, Haute-Marne, Ardennes, Somme), Italy, Greece and Aegean coast to Bulgaria, Rumania, Ukraine and Crimea; also Mediterranean islands and North Africa from Morocco to Tunisia. Accidental in Channel Is (Jersey 16.x.1960, 10.xii.1961, 22.x.1967) and south coast of England (Titchfield Haven, Hants., 4.iii-8.iv.1961; Crumbles, Sussex, 9.x.1962; earlier Sussex records are now discredited).

C. cetti albiventris Severtzov.

The eastern form (synonym *cettioides* Hume) is larger and dispenses with the spring moult, so that the plumage shows considerable fading by spring, the dark brown of upper parts, flanks and under tail-coverts having become pale grey-brown, and the under parts appearing whiter in consequence.

Measurements. Wing ♂♀, 62-73, mostly 66-70. Tail, (58) 60-72 (74). Bill, (13) 14-16. Tarsus, 21-25, mostly 23-24. See Tables on pp. 66, 68.

Tail rounded as in typical race.

Moult (pp. descendant). Apparently there is a complete moult after breeding, as in *cetti*, but no corresponding spring body-moult (see above).

Distribution. Kirghiz Steppes east to Tarbagatai and Russian Turkestan, south to Transcaspia, N. and W. Iran and N. Afghanistan. Winters in E. Iran, S. Afghanistan, Baluchistan and N.W. India south to Sind.

NOTE. In Asia Minor and the Near East, including Iraq, populations are intermediate in size, and while some birds apparently have the spring moult, others do not. There seems little point in giving birds from these areas a separate name *orientalis* Tristram, as has been done.

Genus LOCUSTELLA

LOCUSTELLA LUSCINIOIDES (Savi)

*Savi's Warbler**L. luscinioides luscinioides* (Savi)

Upper parts uniformly rufous-brown, head slightly darker and rump lighter. Short pale supercilium, grey-brown ear-coverts, white chin. Under parts whitish with side of breast and flanks suffused warm brown, under tail-coverts the same with buff tips. Bastard-wing pale brown contrasting with rufous greater coverts and dark-tipped primary coverts. Outer web of long outermost p. dusky white. Broad tail often with indistinct 'fault-barring'. (See page 6.)

A marshland species inhabiting reeds, sedges and low bushes. Not shy, often singing in full view. Scolding-note like thin *tzwik*; also a liquid *puitt*, and a harsh chatter. Song pitched lower than GRASSHOPPER WARBLER'S and typically in shorter bursts; preceded by rapid, erratic succession of ticking notes not unlike *tzwik* alarm, which gain in tempo and merge with trill. For field-notes see F. M. Boston, *Brit. Birds*, 49: 326-7, and R. G. Pitt (1967); and for a comparison of songs of Savi's, Grasshopper and River Warblers see W. H. Thorpe, *Brit. Birds*, 50: 169-171. See plate 1.

Ageing. 1st-winter birds have fresh wings and tails; autumn adults are very worn. Birds from Albania in April either have the whole wing comparatively fresh (adults) or the inner pp. very ragged at the tips (1st-summer).

Colours of soft parts. Bill: dark brown above, paler below, pale dull yellowish along cutting-edges. Legs: bright olive-brown or light flesh-brown. Mouth: puce. Iris: dark brown. Bill: medium pinkish-brown. Legs: light flesh-brown. Mouth: chrome yellow. (F. M. Boston, *op. cit.*)

Measurements. Wing, ♂♂ 65-73, ♀♀ 63-70. Tail, ♂♂ 52-62, ♀♀ 52-60. Bill, (14) 15-17. Tarsus, 20-23. See Tables on pages 66, 68. A cline of increasing wing and tail length runs eastwards through Europe: thus, twenty from England, Holland, France and Spain average wing 66.75, tail 55.81; and fifteen from Serbia, Rumania, Albania and W. Russia average wing 69.00, tail 58.13. Five

Cambridgeshire birds, both sexes, measure wing 68-71, tail 53-56 (61).

Tail markedly rounded, 15-18. Wing/tail ratio of 54 birds, 76-90. Under tail-coverts extend beyond outermost tail feathers.

Wing-formula (pp. ascendant). No emargination. 1st p. = p.c. to 3— p.c.

Wing-point, 2nd, rarely = 3rd; otherwise 3rd, $\frac{1}{2}$ -3; 4th, 4-6; 5th, 6-9; 6th, 9-11; 10th, 17-19.

2nd without notch. Outer pp. distinctly curved. Longest tertial = 10th p. or to 4 shorter.

Moult (pp. descendant). Adults moult in Africa. In a collection from Darfur, Sudan, wing and tail had just started in early October. Birds dated 16.x. and 23.x. have the wing-moult well advanced and the whole tail growing. A bird dated 9.xi. has finished the tail and pp. 1-3 and has pp. 4-10 all growing together in both wings. Thus the moult appears to progress with remarkable rapidity and must leave some birds flightless for a time.

Distribution. Local in Europe east to Riv. Volga, from Holland south to the Mediterranean and N. Africa. Regular breeding England (E. Anglia) ceased about 1856, since when accidental until re-established in N. Kent 1960 or earlier, increasing to 12 singing males by 1967: see R. G. Pitt (1967). Has also occurred in recent years in Somerset, Wiltshire, Sussex, Suffolk, Norfolk, Lincolnshire. Once Scotland (Fair Isle), 14.v.1908. Once Sweden, 12.vi.1947. Denmark, one in May 1949, 8 in four localities 26.v.—15.vii.1964, and one in May 1965 (Niels Otto Preece, D.O.F.T. 61:164-7).

L. luscinioides fusca Severtzov.

The race *fusca* from Turkestan is decidedly olive-brown, not rufous, above, and whiter beneath, with the brown of flanks and under tail-coverts paler. Measurements and wing-formula are as in the typical race.

Weight. Oxford Univ. Exped. N. Iran, August 1963, average of 14 birds, 15.3 (11.6-18.4) gm.

Distribution. W. Siberia across Kirghiz Steppes south to Transcaspia and the Tian Shan range.

LOCUSTELLA FLUVIATILIS (Wolf)

River Warbler

Uniform olive-brown mantle contrasting with warm brown tail. Dark brown mottling on white throat and duller breast, centre of belly whitish, sides of breast and flanks olive-brown. Under tail-coverts buffish-brown broadly tipped white. Under-

side of shafts of tail-feathers and outer web of long outermost p. white.

A variable species. Occasional specimens are dark earth-brown rather than olive-brown above, and in some the throat is suffused with yellow. A note on the species is given by P. Davis, *Brit. Birds*, 55: 137-8.

A frequenter of beech, alder and other thickets in wet wooded districts rather than marshes; also pastures dotted with scattered bushes. Shy and secretive. Call-note low and harsh. Reeling song distinct from SAVI'S and GRASSHOPPER WARBLERS, a succession of notes in which two are in quicker succession than the next two. 'A moderately short musical metallic jingle rather than a trill' (F. C. R. Jourdain).

Ageing. Neither juveniles nor recognisably 1st-winter birds were available for examination. The latter are said to be more rusty above, tinged ochreous below.

Colours of soft parts. Bill: horn-colour with slight fleshy tinge near cutting-edge, lower mandible pale flesh or pinkish-horn darker towards tip. Legs: flesh-pink, paler behind and on soles. Mouth: pale yellow. Iris: hazel, dark mud-brown (P. Davis, G. K. Martin).

Measurements. Wing, ♂♂ 67-78, ♀♀ 71-77. Tail, ♂♂ 53-62, ♀♀ 55-61. Bill, 14½-17. Tarsus, 20-24. See Tables on pp. 66, 68.

Tail rounded, 8-15. End of under tail-coverts to tip of tail, 10-15. Wing/tail ratio of 28 birds, 73-83 (cf. *fasciolata*).

Weight. Kluz (1943) gives one ♂ 19.7, one ♀ 22.1 gms. One at Fair Isle (Shetland), 24.ix., 17.1 gm.

Wing-formula (pp. ascendant). No emargination. 1st p. minute, about half p.c.

Wing-point 2nd, or 2nd = 3rd; otherwise 3rd, ½-1½; 4th, 3-5½; 5th, 6½-8; 6th, 9-11; 10th, 18-20½.

2nd rather pointed, other pp. rounded. No notch on inner web. Longest tertial = 10th p. or slightly longer, about 5+ ss.

Moult (pp. descendant). No moulting material seen. One from Rustenburg, S. Africa, 17.i., is more worn than birds from the breeding grounds in May, so the complete moult probably takes place late in the winter.

Distribution. Baltic countries across Russia to Ural Mts at 60° N.; E. Germany and locally on Riv. Rhine; Poland, Hungary, N. Yugoslavia, Ukraine, Crimea and lower Volga. Winters E. Africa south to Transvaal. Vagrant to Scotland (Fair Isle), 24-25.ix.1961, S. Norway, Heligoland, Holland and Cyprus (Akrotiri, 12.viii.1962). Range evidently expanding northwest: over 40 records in Sweden since the first in 1937, mostly June-July; several recent records in Denmark, latest 21.x.1966.

LOCUSTELLA FASCIOLATA (Gray)

Gray's Grasshopper-Warbler

Like a large RIVER WARBLER. Above olive-brown; lores and ear-coverts grey; white superciliary stripe, eye-rim yellowish. Adults have white throat contrasting with greyish breast, belly suffused buffish, and buffish-olive wash on sides of breast and flanks. Under tail-coverts orange-brown. Outer web of long outermost p. dusky white.

Haunts dense alder and willow thickets of lowland river banks. Song (recorded by Miss Irene Neufeldt in Amurland, U.S.S.R.) is entirely different from the reeling of other *Locustella* and perhaps more similar in pattern to PALLAS'S GRASSHOPPER WARBLER (q.v.), though it is musical throughout: a series of loud emphatic, liquid notes of varying pitch, with a definite interval between the early ones, but quickening to a rapid, descending trill, each stanza lasting 3-4 seconds. *See plate II.*

Ageing. 1st-winter birds have upper parts a warmer brown, under parts sulphur yellow suffused with olive on breast and flanks, and reduced eyestripe. (One from Isle d'Ouessant, Finistère, France, 26.ix.1913, is like this; another from the same lighthouse, 17.ix.1933, is an adult in fresh plumage.)

Colours of soft parts. Bill: upper mandible blackish-brown, cutting-edges yellowish, lower mandible chrome yellow at base, brownish at tip (Swinhoe). Bill: upper mandible blackish, lower pink, suffused plumbeous. Legs: pale brownish-horn, or dark flesh. Iris: rich brown, or slaty-brown. (Ex labels and La Touche, 1925-30.)

Measurements. Wing, ♂♂ 74-83, ♀♀ 75-81. Tail, ♂♂ 67-75, ♀♀ 63-72. Bill, 19-22. Tarsus, 26½-30. *See Tables on pages 66, 68.*

Tail markedly rounded, 22-25. Wing/tail ratio of 29 birds, 83-94 (cf. *fluviatilis*).

Wing-formula (pp. ascendant). Emarginated 3rd. 1st p. minute, about half p.c.

Wing-point, 3rd. 4th, 2-3½; 5th, 6-8; 6th, 8-12; 10th, 17-19.

2nd usually falls between 3rd-4th. Notch on inner web 9-12 from tip, falls between 6th-8th.

Moult (pp. descendant). A November bird from the Moluccas is very worn. Migrants in mid-May and June birds from the breeding grounds are comparatively fresh, so that the complete moult probably takes place late in the winter.

Distribution. Central and E. Siberia north to 60° N. on Tunguska Riv., east across Transbaikalia to Amurland, Ussuriland, N. Manchuria, Sakhalin, Kurile Is, Hokkaido, Korea. Migrates through E. China and Ryukyu Is to Philippines, New Guinea, Celebes and other islands of S.E. Asia. Vagrant to N.W. France (see above).

LOCUSTELLA NAEVIA (Boddaert)

Grasshopper-Warbler

L. naevia naevia (Boddaert)

Upper parts warm olive-brown with broad blackish streaks. No supercilium. Dimorphic, under parts whitish in some, yellowish in others, irrespective of age or sex. Sides of breast washed buff; often a row of brown spots across lower throat. Flanks and under tail-coverts pale brown, the latter with dark brown shaft-streaks. Outer web of long outermost p. brownish-white.

Haunts dry as well as marshy localities—heaths, dunes, young conifer plantations—where there is sufficient scrub or growth of bushes. Occasionally in crops; also on chalk-grassland and heather-moors. Call-note a sharp, hard *tchik* (repeated in alarm) or more liquid *whit*. Song a peculiarly ‘mechanical’ high-pitched trill of up to 2 mins. duration, not unlike the noise made by an angler’s reel; often crepuscular or nocturnal. See *plate III*.

Ageing. It is unlikely that adults moult the remiges and rectrices before autumn migration, so that birds with fresh wing and tail feathers are 1st-winter.

Colours of soft parts. Bill: dark brown, lower mandible pale yellowish-brown. Legs: pink (not ‘pale yellowish-brown’ or ‘pale brown’ as stated in *The Handbook* and other works—see

Scot. Nat., 60: 130, and *Brit. Birds*, 48: 235). Mouth: pale flesh. Iris: brown.

Measurements. Wing, ♂♂ 60-66, ♀♀ 57-63. Tail, ♂♂ 47-55, ♀♀ 46-55. Bill, 12½-15½. Tarsus, 19-21½. See Tables on pp. 66, 68.

Tail markedly rounded, 13-18. Wing/tail ratio of 52 birds, 77-92.

Weight. Average of 32 at Skokholm Bird Observatory, 12.9 (11.0-15.6) gm. (Browne and Browne, 1956). From other bird observatories, average of 20 spring, 12.87 (10.6-15.3) gm. Average of 13 autumn, 14.6 (13.0-16.9) gm.

Wing-formula (pp. ascendant). Emarginated 3rd. 1st p. from 2— to 3+ p.c.

Wing-point, 3rd. 4th, ½-3; 5th, 3-5; 6th, 5½-8; 10th, 12-15½.

2nd, ½-4, falls between 3rd-5th. Notch on inner web 10-12 from tip, falls between 7th-10th.

Moult (pp. descendant). *The Handbook* (ii,39) states that a complete moult takes place in August-September, followed probably by another in February-March, but no moulting material is available in the British Museum to check this. There is an extremely worn bird from Algeciras, Spain, 14.ix., and Rintoul and Baxter (1914) examined two very worn birds—Isle of May, Forth, 21.ix., with all wing and tail feathers abraded, head feathers old, but most of the body plumage new; and Fair Isle, Shetland, 22.ix., with the whole plumage very old and worn. An adult trapped at Portland Bill, Dorset, 23.viii., was replacing the tertials and middle pair of tail feathers only. Thus the available evidence strongly suggests that adults do not undergo their complete moult until they reach winter quarters.

Distribution. From Britain and Ireland, France and N. Spain across Europe to S. Finland, Baltic countries and W. Russia, south to N. Italy, Yugoslavia, Crimea; wintering in Mediterranean basin. A marked northwestwards extension of range has taken place in recent decades; in Sweden scarce, but more regular in the 1950's, especially 1957 (A. Enemar, *Vår Fågelvärld*, 16: 269-76), and in Norway over 20 observations of singing males, 1949-66, though no formal proof of breeding (T. Nielsen, *Sterna*, 7: 153-64).

L. naevia straminea Seebohm

The eastern race, *straminea*, is smaller and paler olive, and wears much greyer in breeding dress, so that the black markings stand out more boldly.

Colours of soft parts. Bill: dark brown, lower mandible flesh, yellowish at base. Legs: pale flesh-brown, though 'whitish-

flesh' and 'whitish-yellow' are also given. Mouth: yellow. Iris: brown. (H. Whistler, ex labels.)

Measurements. Wing, ♂♂ 54-61, ♀♀ 54-59. Tail, ♂♂ 44-58, ♀♀ 45-56. Bill, 12½-15. Tarsus, 18-21. See Tables on pp. 66, 68.

Tail markedly rounded, 15-25 (usually 19-21). Though shorter in the wing, *straminea* is relatively longer in the tail than the typical race; wing/tail ratio is mostly 80-97.

Wing-formula (pp. ascendant). As in *naevia* except that some show emargination on 3rd and 4th.

Moult (pp. descendant). *The Handbook* says that *straminea* has a complete moult in March-April; but a specimen from Skeinjuck, N. India, 9.ix., presumably just arrived in winter quarters, had already started, with innermost primaries, tertiaries and greater coverts in sheath. The tail was very worn.

Distribution. E. Russia across Kirghiz Steppes to Altai Mts, south to Transcausia, Turkestan and Sinkiang; wintering Iran, Afghanistan and India.

NOTE. A slightly larger, more olive form, *obscurior* Buturlin, has been described from N. Caucasus: Vaurie (1959, p. 236) gives wing-length 60-68 in ten ♂♂. Another form, *mongolica* Sushkin, greyer above and whiter below than *straminea*, has been described from N.W. Mongolia, wintering in N. Afghanistan and W. Pakistan.

LOCUSTELLA LANCEOLATA (Temminck)

Lanceolated Warbler

Like a small GRASSHOPPER-WARBLES above and equally variable in colour of under parts, but usually much more spotted below, though occasionally the spotting is reduced to a narrow pectoral band. Indistinct buffish-white supercilium. Under tail-coverts and flanks rufous-brown with dark brown shaft-streaks, though in a few these feathers are immaculate or nearly so. Outer web of long outermost p. brownish-white.

A bird of undergrowth in wet, marshy fields; also in reeds and willows on the margins of pools. Secretive, running rapidly along the ground. Call-note described as *chi-chirr*. Song, a vibrating trill, has been likened to the stridulation of a locust; it has a ventriloquial quality and is apparently uttered mainly by day. For a note on field-characters etc. see P. Davis, *Brit. Birds*, 51: 243-4.

Ageing. 1st-winter birds appear to be more tawny above and yellow below. Autumn adults have wings and tail much abraded.

Colours of soft parts. Bill: upper mandible blackish, lower pale flesh or pinkish-horn. Legs: pinkish-brown. *The Handbook* (ii,41) says 'legs and feet pale yellowish-flesh'. A bird at Fair Isle had the upper mandible dark brown, lower mandible pale flesh, and the legs pink (P. Davis, *op. cit.*). Iris: pale or dark brown.

Measurements. Wing, ♂♂ 52-61, ♀♀ 51-59. Tail, ♂♂ 39-49, ♀♀ 42-48. Bill, 12-14. Tarsus, 18-21. See Tables on pages 66, 68.

Tail markedly rounded, 13-15. Wing/tail ratio of 60 birds 74-87, mostly 77-85.

Weight. Autumn birds at Fair Isle (Shetland), 7.6 and 11.4 gm. A ♀ at Noord-Hinder Lightship, Holland, mid-ix., 9 gm. Shaw (1936) gives 11, 12 and 13 gms.

Wing-formula (pp. ascendant). Emarginated 3rd. 1st p. = p.c. or is shorter.

Wing-point, 3rd, occasionally = 2nd. 4th, 1-2½; 5th, 2½-4; 6th, 5-6; 10th, 11-14.

2nd occasionally = 3rd or 4th, but usually falls between 4th-5th. Notch on inner web 6½-8½ from tip, falls between 6th-10th.

Moult (pp. descendant). There is a complete moult on the wintering grounds in the spring, worn birds being found in Burma until into March. The earliest is a ♀ from Malay Peninsula, 22.i., lacking a tail. Birds from Andaman Is, 23.iii. and 9.iv., have pp. 7-10 growing, the latter also the tail, and a ♀ from Cochin-China, 28.iii., has the inner pp. new and outer pp. old. One from Burma, 8.iv., is more advanced with pp. 7-9 growing. A ♂ from S. Annam, 26.iv., has pp. 1-6 and the tertials new, pp. 7-9 growing and the tail partly renewed.

Distribution. E. Russia eastwards across Siberia to Kamchatka, south to Altai and Sayan Mts, across Transbaikalia to Amurland and Ussuriland; also Sakhalin and Kurile Is, Japan, Korea. Winters over much of India and S.E. Asia. Accidental in W. Europe in Denmark, Sweden, Holland, Germany (Heligoland), Scotland (Fair Isle and Orkney), England (Lincolnshire).

NOTE. A race *L. l. gigantea* has been described (Johansen, 1954, *Jour. Ornith.*, 95:92), but is not acceptable. It was founded on four winter migrants from Shaweishan Is, E. China, with wing 57-62; but seven autumn migrants of both sexes from this locality in the British Museum measure only 53-55, and Johansen's figures are equalled by a number of freshly-moulted spring birds from various parts of the range (see also Vaurie, 1954 and 1955).

PALLAS'S AND MIDDENDORFF'S
GRASSHOPPER-WARBLEDERS

Some authors unite the several races of *L. certhiola*, Pallas's Grasshopper-Warbler, with *L. ochotensis*, Middendorff's Grasshopper-Warbler, in one species, on the grounds that intermediate forms occur occasionally in the winter range. This view is not taken here, and I follow Austin and Kuroda (1953) in keeping the two distinct.

The alleged intermediates are very rare and might be the result of interspecific hybridization. Middendorff's Grasshopper-Warbler (including the race *pleskei*) appears to be largely confined to islands of the Sea of Okhotsk and Yellow Sea, while Pallas's Grasshopper-Warbler has a much wider continental distribution. However, the latter extends to islands off Hokkaido, Japan, and as Hokkaido falls within the range of *ochotensis* there may be some overlap in this area. Another explanation may be that a few *ochotensis* retain a juvenile type of dress into 1st summer. An intermediate ♀ from Wei-hai-wei, N. China, in May, is similar in plumage of upper parts to a juvenile from the Kurile Is; the dark streaking is confined to crown and mantle and is absent from nape, lower back and upper tail-coverts.

Typically *ochotensis* differs from *certhiola* in a number of characters. The black feather-centres so prominent on the upper parts in *certhiola* are entirely suppressed in *pleskei*, but only partly so in *ochotensis*. The uniform rump is tawny but not rufous. The wing is longer and the tail more rounded and differently marked in *ochotensis*.

LOCUSTELLA CERTHIOLA (Pallas)

Pallas's Grasshopper-Warbler

L. certhiola rubescens Blyth

Like GRASSHOPPER-WARBLEDER, but decidedly rufous on rump and upper tail-coverts, the latter marked with black. Slight yellowish supercilium. The tail has black spatulate patches near the tip of the shaft region of the middle feathers (cf. *L. ochotensis*), and the others have large white spots at the tips, most obvious

when viewed from below. Under tail-coverts buff with whitish tips.

Frequents marshes, damp meadows and bushy areas along riversides, and rank grass and undergrowth in swampy places. Haunts rice-fields in winter. Call-note a harsh *chir-chirr*. Song quite different from the usual reel, and more acrocephaline in character, though each stanza lasts only 4-5 seconds: opens with two separated notes, followed by 'a fast changing string of chatterings and harsh notes of varying pitch, including perhaps some musical ones, but always ending up distinctively with a musical trio of notes'. (J. Boswall, *Brit. Birds*, 60: 523-4). For notes on field-characters see K. Williamson, *Brit. Birds*, 43: 49-51 and 50: 395-7.

The darkest and brownest race is *rubescens*. Witherby in *The Handbook* (ii, 34n) thought that the specimen from Rockabill, Co. Dublin, 28.ix.1908, was referable to this form, and the Fair Isle birds, 8-9.x.1949 and 2.x.1956, may well have been; they were certainly much too saturated to be *centralasiae* or the typical race.

Ageing. 1st-winter birds have pale yellow under parts and a gorget of brown spots.

Colours of soft parts. Bill: blackish-brown, base of lower mandible flesh. Legs: brownish-flesh, pink posteriorly; claws, pale horn. Iris: brown (K. Williamson, *op. cit.*).

Measurements. Wing, ♂♂ 61-71, ♀♀ 58-68. Tail, ♂♂ 50-56, ♀♀ 48-55. Bill, 15-17. Tarsus, 20-24. See Tables on pages 66, 68.

Tail rounded, 10-15 (less so than in *L. ochotensis*).

Weight. 1st-winter vagrant, Fair Isle, 15.7 gm. Nisbet (1967) discusses weight in relation to moult of birds wintering in Malaya: five moulting birds were between 17.3-18.2 gm., significantly heavier than non-moulting birds, slightly over 14 gm. The heaviest record, from 21.v., was 22.4 gm.

Wing-formula (pp. ascendant). Emarginated 3rd, sometimes slightly 4th. 1st p. 1-3 + p.c.

Wing-point, 3rd. 4th, 1½-3½; 5th, 4-7; 6th, 6-10; 7th, 8-12; 10th, 14-19.

2nd, 2½-6, falls between 4th-6th. Notch on inner web 8½-11 from tip falls between 7th-9th.

Moult (pp. descendant). Wing and tail feathers are moulted March-April in Malaya, finishing about two weeks before spring migration. The entire tail, up to four pp. and three ss. in each wing are moulted simultaneously. For fuller details see Nisbet (1967). However, in some birds there is an autumn moult, perhaps only partial. Several from Burma, mid-x. to mid-xi., are moulting tail-feathers, wing-coverts and tertials; two dated 20.ix. and 11.x. are completing the two innermost ss.; a ♂, 7.xi., has pp. 7-10 growing together, and one, 13.xi., has p. 8 (only) growing in both wings.

Distribution. For full distribution of the various races see Vaurie (1959, pp. 233-4). The species ranges over Central Asia and Siberia north to about 64° N. from Riv. Irtysh eastward across Transbaikalia, Mongolia, Manchuria to Amurland and Ussuriland; also islands off N.W. Hokkaido, Japan. Winters in India, Ceylon, Burma, Thailand, Malaya, S.E. China. Vagrant to Scilly Is (St. Agnes), 7.x.1961; Ireland (Co. Dublin) and Scotland (Fair Isle) as detailed above; also Germany (Heligoland, 13.viii.) and Afghanistan.

L. certhiola centralasiae Sushkin

L. certhiola certhiola (Pallas)

The race *centralasiae*, compared with *rubescens*, is a paler, brighter rufous with a good deal more contrast in the plumage, and has the fringes of the head feathers grey, especially on the hind-crown, contrasting sharply with the black centres. The typical race is the most heavily streaked, and is more similar to *centralasiae* but lacks the greyish fringes on crown and nape and has broader black feather-centres.

Measurements. Both races. Wing, ♂♂ 56-66 (69), ♀♀ 58-66. Tail, ♂♂ 44-56, ♀♀ 45-52. Bill, 13-16. Tarsus, 20-24. See Tables on pp. 66, 68.

Tail rounded as in *rubescens*.

Weight. Shaw (1936) gives average of 6 ♂♂, 16 (14-20) gm. and 4 ♀♀, 16 (11-20) gm. for *certhiola*.

Wing-formula (pp. ascendant). As for *rubescens*, but in ten *centralasiae* 1st p. from 3— to 1+ p.c.; and in five *certhiola* = p.c. or shorter. In some *centralasiae* 2nd p. = 9th or 10th.

NOTE. The above three races appear to reflect the main trends of divergence within the species; they are undoubtedly connected by intermediates, but there seems little justification for other races that have been described, such as *minor* David and Oustalet and *sparsimstriata* Meise.

LOCUSTELLA OCHOTENSIS (Middendorff)*Middendorff's Grasshopper-Warbler**L. ochotensis ochotensis* (Middendorff)

Upper parts olive-brown, with obscure dark mottling on the mantle. Rump and upper tail-coverts uniform and brighter olive-brown. Head darker, more greyish-brown, lightly streaked. Supercilium off-white. Under parts whitish with an olivaceous wash, especially strong on sides of breast and flanks, whitest on chin and throat and down middle of belly. Under tail-coverts brownish-buff with white lunate tips. Broad white tips to all tail feathers except the two middle pairs, which are without black spatulate markings (cf. *L. certhiola*). Outer web of long outermost p. brownish-white.

Breeds almost exclusively on small offshore islands, in open wet swales of thick grasses, reeds and low bushes. Song said to resemble the sharpening of a scythe, *witsche* repeated, and to be uttered chiefly at night.

Ageing. 1st-winter birds, like the above-mentioned juvenile, are brownish-yellow beneath, and more rufous-brown above than adults.

Colours of soft parts. Bill: horn-colour tinged bluish, with whitish to yellowish cutting-edges and base of lower mandible. Legs: dark pinkish-flesh, more yellowish on soles. Mouth: delicate pink. Iris: clear pale umber. (Ex labels of migrants collected by H. Lynes.)

Measurements. Wing, ♂♂ 65-75, ♀♀ 62-73. Tail, ♂♂ 52-58, ♀♀ 50-59. Bill in adults, 15-18, in 1st-winter, 15-16. Tarsus, 22-26. See Tables on pages 66, 68.

Tail markedly rounded, 15-23 (cf. *L. certhiola*). Wing/tail ratio of 33 birds, 75-84 (cf. *pleskei*).

Wing-formula (pp. ascendant). Emarginated 3rd. 1st p. from 2— to 3+ p.c.

Wing-point, 3rd. 4th, 2-3; 5th, 5-7; 6th, 8-10; 10th, 15-19.

2nd, 2-5, falls between 3rd-5th. Notch on inner web 8½-10

from tip, falling between 6th-8th. Longest tertial = ss. (longer, = 10th p. in *L. certhiola*).

Moult (pp. descendant). Probably completed on the breeding ground. A ♂ from Sakhalin Is., 23.vii., is very worn, and another from the same locality, 15.viii., has a short wing with 6-9 pp. all growing.

Distribution. E. Siberia around Sea of Okhotsk from Kamchatka and Kurile Is south to Sakhalin and Hokkaido, wintering Phillipine Is, Borneo, Celebes and Malaya. Accidental in Alaska (Nunivak Is.)

L. ochotensis pleskei Taczanowski

Five migrants collected at Swatow and Foochow, S. China, are uniformly dark olive-brown on upper parts, the dark mottling suppressed, and have a different wing-formula and longer bill. These belong to the race *pleskei* (synonym, *styani* La Touche).

Measurements. Wing as *ochotensis*. The tail appears to be generally longer in *pleskei*, two ♂♂ measuring 65, 70, and three ♀♀ 55, 58, 64. The bill is also longer, 18-20½. Tarsus, 22-26.

Tail markedly rounded, 18-26 (cf. *certhiola*). Wing/tail ratio of 7 birds, 84-96 (cf. *ochotensis*).

Wing-formula (pp. ascendant). The five birds have 4th=3rd or to 1 shorter; 5th, 2½-4; 6th, 5-7; 10th, 13-16.

2nd shorter than in typical race, 4-6, falling between 5th-6th; notch on inner web falls short of tip of 9th.

Distribution. Korea and islands of Yellow Sea; Honshu, Kiushu and Seven Is of Izu in Japan, migrating to S.E. China.

Genus ACROCEPHALUS

ACROCEPHALUS MELANOPOGON (Temminck)

Moustached Warbler

A. melanopogon melanopogon (Temminck)

Superficially like SEDGE-WARBLE (but see below). Mantle reddish-brown streaked with black (but nape and rump practically unstreaked) in the typical race. Prominent white superciliary stripe broadest behind eye extends to hind-crown, terminating squarely; this contrasts sharply with black crown, the feathers of

which have small olive-brown fringes, and with dusky lores and ear-coverts above whitish cheeks and throat. Nape and sides of neck form a rufous 'shawl' contrasting with nearly black head. Under parts whitish, washed with buffish-brown on flanks and under tail-coverts. Fringes of tertiaries and secondaries olive-brown.

Frequents marshy localities, especially dense reed-beds, rarely venturing into the open. Call-note a SEDGE-WARBLER like *churr*; song similar to that species but lacking the loud rattling and jarring notes, and usually introduced by four high-pitched Nightingale-like notes.

A comparison of skins leads one to believe that an observer with good colour sense (and a close view) should have little difficulty in distinguishing the typical race from the SEDGE-WARBLER, although the claim has often been made that the two are virtually inseparable in the field. The following points should help:

Mantle: MOUSTACHED, reddish-brown; SEDGE, olive-brown.

Rump: MOUSTACHED, as mantle (though a little brighter because unstreaked); SEDGE, rufous contrasting with mantle.

Crown: MOUSTACHED, must appear almost completely black at short range; SEDGE, black streaking well-defined.

Supercilium: MOUSTACHED, clear white, broader behind eye, terminating squarely on hind-crown; SEDGE, yellowish, fairly uniform breadth, fading into hind-crown.

Ear-coverts: MOUSTACHED, dusky; SEDGE, mainly yellowish-brown.

Flanks: MOUSTACHED, rusty brown; SEDGE, yellowish-brown.

It must be emphasized that these distinctions refer to the typical race. The eastern *mimica* is an olive-brown, not russet, bird, with the black of the crown less intense and the streaking better defined, and exceedingly like an adult SEDGE-WARBLER above, though 1st-winter SEDGE is more yellowish. However, the distinctive facial pattern is there, and the flanks and under tail-coverts of *mimica* are washed with pinkish-brown, not yellowish.

The more rounded tail of *melanopogon* is sometimes noticeable when the bird flies, and it has a distinctive habit when at rest of cocking the tail above the back in the manner of a Wren (Bryan Sage). Other useful notes on field-characters of birds seen in Hampshire and Kent are given by G. E. Wooldridge and C. B. Ballantyne, *Brit. Birds*, 45: 219-20, and E. H. Gillham and R. C.

Homes, *idem*. pp. 412-3, respectively. An account of the birds which nested in Cambridgeshire in 1946 is given by R. A. Hinde and A. S. Thom in *Brit. Birds*, 40: 98-104. Photographs appear in the same journal, 47:15-16, pls. 1-4. See plate IV.

Ageing. 1st-winter birds have fresh remiges and rectrices, blackish-brown edged olivaceous, these feathers being very worn and faded in adults.

Colours of soft parts. Bill: dark brown, base of lower mandible paler. Legs: dirty blue-grey or dull brownish-horn, soles yellowish-ochre. Mouth: orange-yellow. Iris: rich medium amber.

Measurements. Both sexes, Spain and Mediterranean Is. Wing, 52-58. Tail, 44-52. Bill, 13-15. Tarsus, 18-22. Birds from Asia Minor and Palestine are larger: wing, two ♂♂ 60-61, three ♀♀ 58; tail, two ♂♂ 54, three ♀♀ 49-55. See Tables on pp. 66, 68.

Tail rounded, 9-12.

Wing-formula (pp. ascendant). Emarginated 3rd-5th, slightly near tip of 6th. Long 1st p. $5\frac{1}{2}$ -8 + p.c.

Wing-point usually 4th = 5th, occasionally = 3rd; otherwise 3rd, $\frac{1}{2}$ -2; 4th rarely, $\frac{1}{2}$ -1; 6th, $\frac{1}{2}$ -2 $\frac{1}{2}$; 7th, 2 $\frac{1}{2}$ -4; 10th, 7-10.

2nd, $5\frac{1}{2}$ -7 $\frac{1}{2}$, falls between 7th-9th (once = 10th). Notch on inner web falls far down ss., and notch on inner web of 3rd falls below ss. tips.

Ss. 2-3 shorter than 10th p., longest tertial slightly shorter than ss.

Moult (pp. descendant). One from Smyrna, Asia Minor, 31.x., is just finishing. There is no other moulting material, but the complete change is delayed until the birds reach winter quarters.

Distribution. Mediterranean Europe east to Austria, Hungary, Rumania, wintering in the Mediterranean basin, Asia Minor, Palestine. Accidental in S. England (see above, also at Wendover, Bucks., 31.viii.1965); Denmark (Kongelunden, Amager, 10.v.1963).

A. melanopogon mimica Madarasz

As explained above, the general tone of the upper parts in the eastern race is olive-brown rather than russet, with the black of the crown less intense and the dark streaking well defined, so

that confusion with SEDGE-WARBLER is more likely. Flanks and under tail-coverts washed with pinkish-brown.

Colours of soft parts. Bill: dark brown, base of lower mandible paler. Legs: greyish-plumbeous or purplish-brown. Mouth: orange-yellow. Iris: olive-brown.

Measurements. Wing, ♂♂ 59-67, ♀♀ 59-63. Tail, ♂♂ 49-60, ♀♀ 50-58. Bill, 14-16. Tarsus, 21-23. See Tables on pages 66, 68.

Tail rounded, 9-12.

Weight. There are two records (August) of 11.9 gm.

Moult (pp. descendant). One from Sind, 4.xi. is just finishing. C. B. Ticehurst records that two *mimica* collected 4.xi. were still in wing and body moult (*Ibis*, 1922, p. 552).

Distribution. Kirghiz Steppes east to Turkestan and Tadjikistan, south to Transcaspia and S. Iran, wintering from Iraq east to N.W. India. Three apparent breeders from Iraq, 13.vii., are too badly worn for racial determination.

ACROCEPHALUS SCHOENOBÆNUS (Linnaeus)

Sedge-Warbler

Mantle olive-brown, striated blackish-brown, becoming uniform rufous-olive on rump, this contrasting well with dark brown tail. Head streaked black, with creamy supercilium. Whitish under parts suffused creamy or buff.

Inhabits thickets of willow and other bushes near water, often with undergrowth of sedges, reeds and other aquatic plants. Sometimes in bushy localities away from water. Active and lively in its movements. Call-note a scolding *tuk* rapidly repeated, also a harsh *churr*. Song a loud, hurried and varied medley of notes, strongly imitative: sweet, musical passages freely interspersed with harsh, strident, chattering ones. Sings commonly at night, and has a simple song-flight. See *Plate V*.

Ageing. In 1st-winter birds the whole tone of the upper parts is brighter, more yellowish-brown; the wings are fresh, the tertials and greater coverts edged with buffish-brown. They are

more boldly marked than autumn adults, which are duller and greyer, especially on the upper mantle and nape, have the head dark with the streaks rather obscure, and the wings and tail abraded.

Colours of soft parts. Bill: blackish-brown, base of lower mandible yellowish-flesh. Legs: pale dun-grey. Mouth: orange. Iris: brown. (*The Handbook*, ii, 58.)

Measurements. All months and localities. Wing, ♂♂ 60-72, ♀♀ 59-70. Tail, ♂♂ 39-56, ♀♀ 42-52. Bill, 13½-16. Tarsus, 20-23. See Tables on pages 66, 68. There is a cline of increasing wing-length from west to east: spring birds from Britain are 60-66, from Europe 62-69, and from E. Mediterranean 63-72. 1st-winter birds, all Europe, measure 59-68.

Tail slightly rounded, 4-8.

Weight. Average of 232 migrants at Skokholm Bird Observatory 11.2 (8.1-17.9) gm. (Browne and Browne, 1956). Average of 38 spring migrants at Dungeness 11.2 (9-13) gm. Some birds at Rye Meads (Herts.), prior to autumn departure, increase to 20-21 gm. For a full discussion of weight fluctuations, see Gladwin (1963).

Wing-formula (pp. ascendant). Emarginated 3rd. 1st p. minute, about half p.c.

Wing-point, 3rd (rarely = 2nd). 4th, 1½-4; 5th, 4½-6; 6th, 7-8½; 7th, 10-11; 10th, 14-17.

2nd, ½-1 (rarely = 3rd), shorter than 4th. Notch on inner web (often indistinct) usually falls between 7th-9th.

Moult (pp. descendant). *The Handbook* (ii, 58) appears to be in error in attributing to this species a complete post-nuptial moult in July-August. Adults from Kent, 8.vii., and Dorset, 7.viii., show no signs of moult, but a migrant from St. Catherine's Lighthouse, I.O.W., 11.viii., has some new mantle plumage and four new tail feathers. Of seventeen autumn Sedge-Warblers examined by Rintoul and Baxter (1914), four August birds showed evidence of body moult, and one from Little Ross Lighthouse on the Solway, 18.viii., also had the middle pair of tail feathers growing. Birds from Rafa, S. Palestine, 20-21.viii., as well as several from N. Rhodesia between 1.x. and 10.xii., are very ragged.

In some, however, moult begins in November, and birds from Darfur, Sudan, 18.xii., and the Cameroons, 15.i., are about half-way through the wing-moult. Two others from the Cameroons at this period have finished, as have

also birds from S. Abyssinia, 5.ii., and Eritrea, 26.ii. One from the Congo, 21.ii., has only pp. 1-2 and tertials growing, and one from N. Rhodesia, 15.iii., is still in heavy moult, though birds from Portuguese E. Africa, 30.iii., and Nyasaland, 16.iv., are just finishing. In a series from Potchefstroom, Transvaal, the earliest is a February bird; two others, 20.iv., and 23.iv., have pp. 7-9 and inner ss. half grown, with tertials and tail new; while a late bird, 26.iv., has pp. 1-5 new and pp. 6-10 all growing together, with s.1 new and others growing, and the tail old. Thus the moult appears to be considerably later in the south and is only beginning when many in N.E. Africa have finished.

Distribution. W. Eurasia between the Mediterranean basin and about 70° N., east to Riv. Yenesei, Transcaspia, Turkestan and Altai Mts. Winters in tropical and S. Africa.

ACROCEPHALUS PALUDICOLA (Vieillot)

Aquatic Warbler

An olive or sandy-buff bird heavily streaked with black on mantle, rather less on rufous rump. Yellowish-buff supercilium with black brow-line above, and a buffish band on crown indistinctly streaked—the whole creating a very distinctive head pattern. Under parts buff.

In marshy localities with rank vegetation of sedges or flags, generally avoiding reed-beds (except on migration) and dense growth of willows etc. Call and song similar to *SEDGE-WARBLER*'s but song phrases shorter and neither so rich nor so varied. Has a similar song-flight. For notes on field-characters see *Brit. Birds*, 48: 514-5 and 49: 85, 327-8.

Ageing. 1st-winter birds have bright sandy-buff ground-colour on upper parts, whereas adults are a much greyer olive on mantle and nape. 1st-winter have wing-coverts reddish-buff streaked black and tertials blackish-brown edged rufous; but autumn adults have coverts and flight-feathers very worn and faded, greyish-brown in tone, and there is little or no rufous in the wing. 1st-winter are very buff beneath, adults paler.

Colours of soft parts. Bill: blackish-horn, lower mandible flesh becoming darker near tip. Legs: flesh, with a pinkish or yellowish tinge. Iris: brown.

Measurements. Both sexes. Wing, 57-67. Tail, 42-52. Bill, 11-15. Tarsus, 19-22. See Table on pages 66, 68. Adults after breeding season have generally shorter wings, 57-63, than 1st-winter birds, 60-67.

Rounded tail of pointed feathers, 8-12.

Weight. Average of five autumn birds at British bird observatories 12 (9-14) gm.

Wing-formula (pp. ascendant). Emarginated 3rd. 1st p. 4— to 2+ p.c.

Wing point 3rd, often 2nd = 3rd; 4th, 2-3; 5th, 5-6; 6th, 8-9; 7th, 10-11; 10th, 16-17.

2nd, usually 1-2, may = 3rd, always shorter than 4th. Notch on inner web falls between 6th-8th.

Moult (pp. descendant). September adults from France and Spain are only partially through the post-nuptial body moult and consequently greyish-olive above, especially on head and nape, the new body feathers being most noticeable on the rufous rump and upper tail-coverts. A few have renewed the middle pair of rectrices, but the rest of the tail and the flight-feathers are apparently changed in winter quarters, and not from late June to September as stated in *The Handbook* (ii, 60).

Distribution. Central Europe between the Baltic and Black Seas, extending westwards to W. Germany and eastwards through U.S.S.R. to Ural Mts. Regular as autumn vagrant to S. England; accidental Wales, Ireland, Scotland, Denmark, S. Sweden, S. Finland. Winters in tropical Africa.

ACROCEPHALUS BISTRIGICEPS Swinhoe

Schrenck's Sedge-Warbler

A. bistrigiceps bistrigiceps Swinhoe

Like a **SEDGE-WARBLER** with fairly uniform olive-brown upper parts, except for dark mottling on head and hind-crown, and pale buffish-olive rump. Distinctive head-pattern of long buffish-white supercilium with broad black band above. Dark line through eye. Throat white, breast and belly yellowish-white,

sides of breast and flanks buff. Fresh autumn dress is more rufous above and deeper buff below than in spring.

Occurs in tall grasses and brush along roadsides, so is not restricted to marshes and rivers.

Ageing. Ist-winter birds are like autumn adults after the post-nuptial body moult, but the latter have remiges and rectrices bleached and worn.

Colours of soft parts. Bill: upper mandible black, lower yellowish or flesh. Legs: brownish-olive or plumbeous-flesh, soles greenish-yellow. Mouth: yellow. Iris: greyish-hazel or dark brown.

Measurements. Wing, ♂♂ 50-58, ♀♀ 50-56. Tail, ♂♂ 44-52, ♀♀ 42-51. Bill, 12-15. Tarsus, 19-23. See Tables on pages 66, 68.

Tail rounded, 9-13. Wing/tail ratio of 41 *bistrigiceps* 81-96 (cf. *tangorum*).

Weight. Shaw (1936) gives average of 16 ♂♂, 9.4 (8-11) gm.; 8 ♀♀ 8 (7-10) gm.

Wing-formula (pp. ascendant). Emarginated 3rd-5th. Long 1st p. 3-7+ p.c.

Wing-point, 3rd = 4th, occasionally = 5th; otherwise 5th, $\frac{1}{2}$ -1; 6th, 2-3; 7th, 3-6; 10th, 7-10 $\frac{1}{2}$.

2nd, 4-6, falls between 6th-8th (usually 6th-7th). Notch on inner web 12-13 from tip, falls about middle of ss. Notch on inner web of 3rd falls opposite tips of ss. Slight notch on inner web of 4th falls opposite 10th p. Longest tertial falls short of 10th p.

Moult (pp. descendant). Apparently a body-moult on the breeding-ground is succeeded by wing and tail moult in winter quarters: I. C. T. Nisbet reports a complete moult in first half of winter in Malaya. A ♀ from Yezo, Japan, 13.ix., is finishing pp. 8-9 and ss. 5-6, and one from 24.x. is in fresh dress. Birds of the typical race in winter quarters are in fresh plumage from November-January but very worn by April-May.

Distribution. N.E. Mongolia and S.E. Siberia to Sakhalin and Japan, south to N. China and lower Yangtze Valley. Winters S.E. China and Indo-Chinese countries west to S. Burma.

A. bistrigiceps tangorum La Touche

I consider *tangorum* La Touche (Central Manchuria), which is placed by Vaurie (1959, p. 241) as a race of *A. agricola*, to be a subspecies of *A. bistrigiceps* (see page 40). Summer specimens are not separable on plumage from other populations, but the birds are brighter rufous above and more reddish-buff below in fresh autumn dress. The bill of *tangorum* is stronger and broader, $4\frac{1}{2}$ -5 wide at the base as against $4-4\frac{1}{2}$ in other populations, and it has longer and narrower rectrices.

Measurements. Wing included with *bistrigiceps*. Tail, ♂♂ 45-56, ♀♀ 49-59. Bill, 14-16 (see above). Tarsus 19-23. See Tables on pp. 66, 68.

Tail, rounded 9-13. Wing/tail ratio of 10 *tangorum* 94-106 (cf. *bistrigiceps*).

Wing-formula (pp. ascendant). As in *bistrigiceps*, except that 1st p. is shorter, $\frac{1}{2}$ -3+ p.c. (once 5+).

Moult (pp. descendant). Three ♂♂ from Chinwangtao, N. China, 1.ix., on migration, were growing new tertials and greater coverts, but had the remiges very worn. Probably the complete moult takes place in winter quarters.

Distribution. Central Manchuria(Harbin); on migration through N.E. China.

ACROCEPHALUS SORGOPHILUS (Swinhoe)

Speckled Sedge-Warbler

Like *A. bistrigiceps* even to the brow markings, but paler, almost yellowish-olive, and more or less streaked on crown and mantle. Rump and upper tail-coverts unstreaked rufous. It appears to be closely related to the last species and may be a race of it, as the breeding-range is uncertain. The only specimens in the British Museum are two from Chinwangtao, 30.v. and 6.vi., and one from Shaweishan Is, 2.vi., in N. China, and the dates suggest that they may not have been far from the breeding-ground. The rectrices are narrow and pointed as in *tangorum*.

Colours of soft parts. Bill: upper mandible blackish-brown, edge of upper and whole of lower yellow ochre. Legs: light greenish-plumbeous, soles greenish-yellow. Mouth: yellow. Iris: ochreous-brown. (La Touche, 1925-30.)

Measurements. Wing, 56-59. Tail, 46-48. Bill, 14-14½. Tarsus, 20-21. (Three only examined).

Wing-formula (pp. ascendant). Emarginated 3rd-5th. 1st p. ½-1 + p.c.

Wing-point, 4th or 3rd = 4th (in one 3rd, ½). 5th, 1; 6th, 4-4½; 7th, 6½-8; 10th, 11-12.

2nd, 4-5, in one just shorter and in the others just longer than 6th. Notch on inner web 13-14 from tip, falls about middle of ss. Notch on inner web of 3rd falls opposite 9th-10th.

Distribution. Said by La Touche (1925-30) to breed in Chihli, N. China, and Manchuria, probably wintering S.E. China. Recorded at Luzon, Philippine Is.

ACROCEPHALUS SCIRPACEUS (Hermann)

Reed-Warbler

A. scirpaceus scirpaceus (Hermann)

Olive-brown above, becoming darker—especially on head—with wear, inclining to rufous on rump. Whitish under parts suffused with buff on flanks; under tail-coverts warm buff.

Found in reed- and osier-beds and other rank vegetation and bushes near water; in central Europe regularly in dry situations in parks and gardens. Usual call-note a low *churr*. Song distinguished from SEDGE-WARBLER's by its comparative uniformity and more subdued, slower delivery; a stuttering disyllabic pattern (*chirruc-chirruc*), but the bird will often insert into this basic framework a wide variety of notes, often mimetic and often sweet. (C. M. Swaine.) Sings at night. Good-voiced birds with strongly mimetic songs, occupying atypical habitats, have sometimes been confused with MARSH WARBLER.

Ageing. Adults in autumn are dark olive-brown on head and upper mantle, and have worn wings and tail. 1st-winter birds are tawny-brown above and deeper buff below, except for white chin and throat, and have fresh wings and tail. Reddish-brown fringes to greater coverts contrast with blackish bastard-wing and primary coverts.

Colours of soft parts. Bill: dark brown, lower mandible mainly yellowish or flesh. Legs: pale brown or flesh-colour with greyish or bluish tinge (J. S. Ash); purplish-horn, basal joint and toes greenish (own notes). Mouth: orange. Iris: pale brown.

Measurements. Wing, ♂♂ 59-68, ♀♀ 61-67. Tail, ♂♂ 49-56, ♀♀ 50-56. Bill, 15-18. Tarsus, 22-25. See Tables on pages 66, 68.

Tail slightly rounded, 4-7.

Weight. Average of 49 autumn, Dungeness, 12.4 (10.0-15.9) gm. Average of 13 autumn, Sandwich Bay, 11.2 (9.5-12.8) gm. Average of 11 autumn, Fair Isle, 11.0 (9.4-13.4) gm. Average of 11 spring, Dungeness, 11.9 (10.9-12.5) gm. For an interesting study see Gladwin (1963).

Wing-formula (pp. ascendant). Emarginated 3rd. 1st p. minute, about half p.c. to = p.c.

Wing-point, 3rd. 4th, 1-3; 5th, 3-6; 6th, 6-8; 7th, 8-11½; 10th, 13-16.

2nd, 1-3, usually falls between 3rd-4th or = 4th, rarely between 4th-5th or = 5th (commoner in *fuscus*). Notch on inner web 10-14 from tip, usually = 9th or falls between 9th and ss. See CAUTION on page 36.

Moult (pp. descendant). The complete moult takes place in Africa. Adults from S. Palestine, 31.viii., and Arabia, 14.ix., are very worn, and a *fuscus* from Darfur, Sudan, 30.x., is exceedingly tattered. One from N. Cameroons, 14.x., is well advanced (with pp. 1-3 and ss. 1-3 new, p. 5 shed, p. 6 and tertials growing) and has only one old tail-feather left. There is a small series from Darfur, 2-6.xi., two of which have pp. 7-9 and 3rd s. growing (with ss. 4-5 very short), and two just finishing with p. 9 almost fully extended. January birds from N. Cameroons and Nigeria have finished, but two mid-December birds from Nigeria and Rhodesia are still in very old plumage. One from Tanganyika, 22.i., has new tertials and a growing tail, and only p. 9 and the innermost ss. remain of the old plumage. A Sudan bird, 29.i., has p. 9 and ss. 5-6 short of full length. Another Tanganyika bird, 10.ii., has finished, and one from Sudan, 11.ii., has finished the wings but is still growing the six middle tail feathers. Birds which are apparently *scirpaceus* from Tanganyika, 15.iii., and Portugese E. Africa, 21.iii., are at the stage of growing pp. 4-5, tertials and greater coverts, but another from Portugese E. Africa on the same date has finished. The moult is thus very protracted.

Distribution. Most of Europe from England and Wales east to W. Russia, between about 60°N. and the Mediterranean and Black Seas, with outposts in N. Africa. Range-expansion into Scandinavia has taken place in this century—S. Finland, S. Sweden (since 1934), S.W. Norway (since 1947). Accidental in Scotland and Ireland (but bred Co. Down in 1935). Winters in tropical Africa.

A. scirpaceus fuscus (Hemprich and Ehrenberg)

The eastern race is paler, less rufous above, whiter below, and nearer to MARSH WARBLER in coloration. 1st-winter birds also are greyer, less rufous, above.

Colours of soft parts. Bill: horn-colour above, lower mandible flesh. Legs: greenish-horn, toes decidedly green. Mouth: reddish-yellow. Iris: brown.

Measurements. Wing, ♂♂ 59-71, ♀♀ 59-68. Tail, ♂♂ 50-58, ♀♀ 48-55. Bill, 15-18. Tarsus, 22-25.

Tail slightly rounded, 4-7.

Weight. Oxford Univ. Exped. N. Iran, August 1963, average of 41 birds, 11.5 (9.5-16.6) gm.

Wing-formula (pp. ascendant). As in *scirpaceus*, except as stated in the CAUTION below.

Moult (pp. descendant). See under *scirpaceus*.

Distribution. Asia Minor and Near East, Iran, Transcaspia and across Kirghiz Steppes to Tarbagatai and Tian Shan ranges; wintering in E. Africa.

CAUTION. Separation of REED and MARSH WARBLERS is *extremely critical*. Most adults in spring and summer can be identified on the coloration of the upper parts, especially the rump (brownish-olive in Marsh, not dissimilar from mantle; rusty in Reed, contrasting with mantle); but some 1st-summer Marsh apparently have rusty rumps (N. Sischka). The notch on inner web of 2nd p. will also separate the majority: between 5th-8th pp. for *palustris*, between 9th p. and tips of ss. for *scirpaceus*; but there are occasional doubtful birds with the notch falling between 8th-9th pp.

The main problem, however, is with young birds in autumn, when Marsh is more rufous and not certainly distinguishable from Reed on plumage. Of fifty *palustris* skins (all ages) none had the notch lower down than the tip of 8th p.; of fifty *A.s. fuscus* only one, a spring bird, had the notch as high as 8th-9th pp.; while of thirty-five *A.s. scirpaceus* no fewer than twelve had the notch in this position, all being 1st-winter birds. J. Crudass and T. R. E. Devlin have confirmed, by remeasuring retrapped birds, that the notch on 2nd p. falls nearer the wing-tip in 1st-winter than in subsequent seasons; in their experience many young Reed have the notch falling between 8th-9th or =9th pp.,

the proportion being very significantly greater than in adults. It is not known if the notch also tends to fall higher in young Marsh; but in any event there is clearly a danger of overlap at the position of notch=8th p.

In examining this feature the wing *must be kept closed*, and not splayed: the 2nd p. should be drawn out from beneath the closed wing and allowed to lie on top of the next innermost so that the exact position of the notch can be 'read off' against the tips of the inner pp. (Compiled from a note by P. Davis, and a paper by J. Crudass and T. R. E. Devlin, *Rye Meads Ringing Group Rep.*)

ACROCEPHALUS PALUSTRIS (Bechstein)

Marsh-Warbler

Greenish olive-brown above, more brownish on rump, but not rufous as in REED-WARBLER. Whitish below suffused with buff, especially on flanks; slight pale supercilium. Young are identical in plumage with young REED, and adults could not be differentiated on plumage from *A. s. fuscus*.

Found in damp localities with rank undergrowth, bushes etc., but less aquatic than REED-WARBLER, and not infrequently in gardens and groves. Has a churring note of higher pitch, less grating than SEDGE-WARBLER'S, sometimes developing into a rattle. Song richer and more diversified than others in the genus, 'and beautiful by any birdy standards: has little of the basic disyllabic pattern of REED WARBLER and contains strikingly melodious passages in the upper register. The sweetness, continuity and especially the flowing quality of its delivery distinguish it from REED.' (C. M. Swaine.) Usually mimetic to a high degree. The bird is said to be bulkier-looking than REED-WARBLER (more like a Blackcap in stance) and often sings from a fair height in bushes and trees, almost always by day.

Ageing. 1st-winter birds are tawny above, tending to rufous on rump: they are distinguishable from *A. scirpaceus* only on wing-formula (see CAUTION under REED-WARBLER). Autumn adults are much worn, especially wings and tails.

Colours of soft parts. Bill: dark brown, lower mandible pale yellowish-horn or flesh. Legs: flesh, with yellowish or brownish tinge, toes with a greenish tinge, soles dull yellow. Mouth:

yellow or orange-yellow, probably not sufficiently distinct from REED-WARBLER to be diagnostic, especially in young birds. Iris: olive or olive-brown.

Measurements. Wing, ♂♂ 63-70, ♀♀ 63-69. Tail, ♂♂ 49-56, ♀♀ 48-54. Bill, 15-18. Tarsus, 22-26. See Tables on pages 66, 68.

Tail slightly rounded, 4-8.

Weight. Average of 5 spring migrants at Fair Isle Bird Observatory, 12.9 (11.6—13.8) gm., and of 3 autumn migrants, 11.8 (10.4—12.8) gm.

Wing-formula (pp. ascendant). Emarginated 3rd. 1st p. minute, about half p.c. to = p.c.

Wing-point, 3rd. 4th, 1-3; 5th, $3\frac{1}{2}$ - $5\frac{1}{2}$; 6th, $6\frac{1}{2}$ -8; 7th, $8\frac{1}{2}$ -10; 10th, 14-17.

2nd, $\frac{1}{2}$ -2, falls usually between 3rd-4th or = 4th (rarely between 4th-5th). Notch on inner web 10-12 from tip, falls between 6th-8th (fifty examined).

Moult (pp. descendant). There is a complete and apparently rapid moult of wings and tail in Africa late in the winter. Seven birds from Kenya in November-December, and six from Tanganyika and Rhodesia in January (also one dated 2.ii.) are very worn and tattered. Judging from a collection made by C. W. Benson at Fort Johnstone, Nyasaland, the moult takes place during February-March. One, 12.ii., has renewed the tertials and the tail is in pin, with pp. 1-4 growing, while another is moulting irregularly, with pp. 4-6 new in one wing and pp. 1-3 growing in both. A bird of 10.iii., has renewed pp. 1-6 and ss. 1-4 and the outer pp. and inner ss. are growing. A bird of 22.iii., has pp. 1-3 new, pp. 4-5 growing and p. 6 in sheath, with the tertials new and the tail in pin; while another collected the same day shows a similar condition except that the outer half of the wing is missing, pp. 7-10 being in sheath. Another, dated 24.iii., is even more handicapped, with pp. 6-10 in sheath and the rest full grown, and 1st s. new and 2nd growing. Four others of this date have the short p. 10 and from p. 7 inwards new with pp. 8-9 and ss. 5-6 growing: in two the tail is complete, in another half grown, and in the fourth still in pin. Two examples dated 20.iii. and 24.iii. have already finished.

Distribution. From S. England (see Parslow (1967) for details) and parts of France across central Europe, between S. Sweden, S. Finland and Baltic States in the north, and N. Italy, N. Greece, Yugoslavia and Balkan countries in the south to Russia east to the Ural Mts; thence south to Transcaucasia and Aral-Caspian region, and parts of Iran. Winters E. Africa south to Natal. Vagrant to Scotland (St Kilda and Fair Isle).

CAUTION. Misidentification of 1st-winter REED- and MARSH-WARBLED is possible—see the cautionary note under the previous species.

ACROCEPHALUS DUMETORUM Blyth

Blyth's Reed-Warbler

Like MARSH-WARBLER. Greyish olive-brown above in spring plumage, wearing greyer; brighter, more greenish olive-brown, after autumn body moult.

Found on marshy ground with bushes and trees, but also in low bush jungle, borders of woods, neglected gardens and orchards, and in similar habitats generally to MARSH-WARBLER, though it is more arboreal and in winter at any rate almost phylloscopine in its habits. Call-note a harsh *tchik, tchik*; also a double *tup, tup*. Song rich and varied and highly imitative, like MARSH-WARBLER'S but stronger and in slower tempo, and not infrequently given at night. For a detailed note see J. Boswall, *Brit. Birds*, 61: 34-5.

Ageing. Young birds are rufous above, similar to young PADDY-FIELD WARBLER, with rust-coloured fringes on secondaries, tertials and tail feathers. The only certain distinction from this and young REED- and MARSH-WARBLERS is by wing-formula examination. Adults are very worn in autumn.

Colours of soft parts. Bill: dark horn above, paler below and on cutting edges. Legs: dark plumbeous or greyish-brown. Mouth: bright yellow. Iris: dark brown. (G. K. Martin.)

Measurements. Wing, ♂♂ 59-65, ♀♀ 58-64. Tail, ♂♂ 47-57, ♀♀ 48-55. Bill, 15½-18. Tarsus, 21-23½. See Tables on pages 67, 69.

Tail slightly rounded, 4-8½.

Wing-formula (pp. ascendant). Emarginated 3rd-4th, in many also on 5th. 1st p. from 3— to 3+ p.c.

Wing-point 3rd, usually = 4th; otherwise 4th, ½-1; 5th, ½-3; 6th, 3-6; 7th, 5½-8; 10th, 11½-14.

2nd, 4-5, falls between 5th-7th. Notch on inner web 11-14 from tip, falls below tips of ss. Notch on inner web of 3rd falls between 9th-10th or = 10th in adults, but often as high as tip of 8th in young.

Moult (pp. descendant). Wing and tail commence to moult soon after arrival in winter quarters. A bird from Bhopal, India, 13.x., has pp. 1-4 and s.1 new, pp. 8-10 and ss. 5-6 old, tertials and tail growing. An October bird from Mussoorie, and one from Etawah, 19.x., have pp. 7-9 and ss. 4-6 growing, tertials and tail new; and another from Etawah, 8.xi., is at the same stage.

Distribution. S. Finland, Baltic countries and Russia south to Ukraine, eastward across Siberia to Riv. Yenesei; Kirghiz Steppes, Aral-Caspian region, Transcaspia, E. Iran; Altai Mts eastward to N.W. Mongolia; Turkestan, W. Tian Shan range, Tadzhikistan, N. Afghanistan. Winters in India south to Ceylon, east to Assam. Vagrant to British Is at Fair Isle (Shetland), late ix. in 1910, 1912 and 1928; in 1912 there was a small influx on east coast of England, but none has occurred in recent years despite an apparent westwards spread into Scandinavia. There have been several May-June records in Sweden since 1952. Once Cyprus (Akrotiri, 14.viii.1962).

NOTE. In the first edition, p. 40, I mentioned two specimens which had been collected in Africa—the first for that continent—and misidentified as *A. scirpaceus*. They are from Zula, Somalia, 26.i.1952, and Bardai, Tibesti Highlands, French Equatorial Africa, 26.iii.1953. In recent years several birds believed to be *A. dumetorum* have been captured in spring at Lake Chad, N. Nigeria, by A. J. Hopson, J. H. Elgood and P. Ward (23.iii.1963), and by J. S. Ash, I. J. Ferguson-Lees and H. Fry in March 1967. I. J. Ferguson-Lees and I have compared one of these, together with the two specimens mentioned above, with races of the African Reed-Warbler *A. baeticatus*, one of which, *A. b. cinnamomeus*, breeds from Lake Chad north to the Sudan. This is a smaller bird, especially in tail and tarsus measurements, and is more rufous than the specimens in question, which are closest in size and wing-formula to *A. b. suahelicus* of E. Africa, though they are olive-tinged on the mantle and not foxy red as in that bird. There may well be a hitherto unsuspected wintering-ground of *A. dumetorum* in the Lake Chad region.

THE PADDYFIELD WARBLER

Vaurie (1959, p. 241) divides this species into three races, nominate *agricola*, *brevipennis* (Severtzov) and *tangorum* La Touche. The last I believe to be a race of *A. bistrigiceps* (see p. 33), and for reasons given below I regard *brevipennis* as a synonym of *agricola*. Thus, assuming there are adequate grounds for holding that *A. concinens* is specifically distinct, *A. agricola* is a monotypic species.

Vaurie says the breeding range of the 'nominated' form is unknown but is suspected to be in India, and that it has been 'examined from November to April from Sind, Kathiawar, United and Central Provinces, Southern Bombay, Mysore, Madras and Bhamo in Burma.' Over much the same range *brevipennis*, under which name he includes the breeding populations of Russia, S.W. Siberia, Turkestan etc., is also found in winter. Nominated *agricola* differs from this, he says, in being 'more rufous above, less dull and olivaceous, more rusty, less whitish below'. Confusion has arisen because there are two colour-phases at this period, as explained below.

A series of June adults from the Kirghiz Steppes and Astrakhan,

S. Russia (as well as one from Kabul, Afghanistan), are in very worn dress, a greyish olive-brown above, darker on the head, and a bleached, pale brown on the rump. A few have already begun body moult, new rufous feathers appearing on the lower mantle, and one from the Kirghiz Steppes is fairly well advanced. A bird from Baluchistan, 14.viii., and others from the United and Central Provinces of India, in September and October, have fully assumed this fresh reddish-brown (*agricola* phase) plumage, or show a rather patchy mixture of these and the old grey-brown feathers. The great majority are at some stage of wing and tail moult. The bright rufous phase does not last long, the tips soon wearing off, leaving the upper parts a duller and more olivaceous brown (*brevipennis* phase), with the head darker and only the rump retaining its tawny colour.

Since some birds moult later than others this rufous phase persists in some individuals until late in the winter. As abrasion and bleaching proceed the body plumage becomes quite worn by the end of February and in March, when a pre-nuptial moult of the contour feathers brings more rufous into the plumage. This again is a fleeting phase, the tips wearing quickly during April, so that in late spring the plumage is already approaching the flat greyish olive-brown of June breeders from the Kirghiz Steppes.

ACROCEPHALUS AGRICOLA (Jerdon)

Paddyfield Warbler

Similar to REED-WARBLER but with a more conspicuous pale supercilium and brighter coloration: one at Fair Isle appeared 'pale reddish-brown above and sandy-buff below'. Members of University College (London) S. Caspian Expedition found it jauntier, less sleek and shorter-tailed than REED WARBLER, and a warmer rufous above. (P. J. K. Burton.)

Frequents stream and lake-sides with reeds, sedges and willows, also damp localities in gardens and grassy places. Call-note *chik-chik*. Song not unlike MARSH-WARBLER'S but softer and without the harsh rattling notes.

Ageing. Six August birds from Turkestan, young of the year (judging by the condition of wings and tail), have worn body plumage of a paler brownish-olive than the adults. A body moult

to 1st-winter takes place on the breeding-ground, since a ♂ from Tchinkent, 7.ix., has a completely fresh mantle with a markedly greenish-olive tinge. As in the adults the tips appear to wear quickly so that the greenish tinge disappears, and a 1st-winter bird from Bengal, 21.ix., is similar in its dull olive-brown coloration to winter adults.

Colours of soft parts. Bill: upper mandible dark horn or blackish, lower pale flesh but brown at tip. Legs: flesh or very pale brown, soles yellow. Mouth: pale yellow. Iris: olive or greyish-brown. (C. B. Ticehurst, J. H. Stenhouse and own notes.)

Measurements. Wing, ♂♂ 53-61, ♀♀ 54-61. Tail, ♂♂ 47-60, ♀♀ 47-57. Bill, 13½-16. Tarsus, 20-23½. See Tables on pages 67, 69. Tail rounded, 8-12.

Weight. Univ. Coll. London Caspian Exped. 1963, average of 4 birds 9.8 (8.6-11.0) gm. 1st-winter bird, Fair Isle, 11.3 gm.

Wing-formula (pp. ascendant). Emarginated, 3rd-5th. 1st p. 1-4 + p.c.

Wing-point 3rd = 4th (rarely 3rd or 4th, ½), occasionally = 5th; otherwise 5th, ½-2; 6th, 1½-4; 7th, 3-6; 10th, 7½-11.

2nd, 3-5, usually falls between 6th-8th (once 5th-6th). Notch on inner web 12-14 from tip, falls about half way down ss. Notch on inner web of 3rd falls opposite tips of ss.

Moult (pp. descendant). Wing and tail moult takes place in the wintering-area, very soon after arrival. The earliest example is from Baluchistan, 14.viii., with the pp. new except pp. 9-10 (old) and p. 8 (in pin), and s.1 new and s.2 and tail growing. Birds from Etawah and United Provinces, 13.ix. and 21.ix., have innermost pp. new and tail about one-third grown (though in one or two the tail is old and tattered), and many from late September to late October show active wing and tail moult associated with the rufous mantle plumage. Most November birds have finished, but one, 29.xi., is still only half-way through wing-moult.

Distribution. S. Russia eastwards through Kirghiz Steppes, Aral-Caspian region, Transcaspia, E. Iran, Tadzhikistan, Sinkiang to W. Mongolia. Winters S. Iran, S. Afghanistan and N. India. Vagrant to Germany (Heligoland) and Sweden (Ottenby, 1.vi.1954). Twice Scotland (Fair Isle, 1.x.1925 and 16.ix.1953 —see *Brit. Birds*, 47: 297-301).

ACROCEPHALUS CONCINENS (Swinhoe)

Swinhoe's Reed-Warbler

Dark olive-brown above with dark grey tips in fresh plumage, rather rufous on rump. Whitish below, with sides of breast, flanks and under tail-coverts brownish-buff. Prominent white supercilium.

Habitat and habits are apparently much the same as those of PADDYFIELD WARBLER, but also found in more open situations among weeds and thickets in dry mountain valleys.

Vaurie (1959, p. 240) admits three races, *concinens* from N. China (wintering S. China), *stevensi* Baker from Assam (wintering Burma) and *haringtoni* Witherby from N. Afghanistan and Kashmir (wintering N.W. India). The colour differences are extremely slight, *haringtoni* being very slightly greyer above, especially on the head, than *stevensi* in series. There is considerable overlap in wing-length and wing-formulae. The Chinese bird has a slightly longer bill.

Ageing. 1st-winter birds are brighter, more rufous above, and on the fringes of the blackish-brown tertials. They are indistinguishable from young *agricola* in plumage.

Colours of soft parts. Bill: black above, yellowish or flesh below. Legs: light brown or brownish-flesh. Mouth: yellow. Iris: hazel or olive-brown.

Measurements. All races. Wing, ♂♂ 53-58, ♀♀ 52-58. Tail, ♂♂ 52-60, ♀♀ 51-58 (61). Bill, 14-16. Tarsus, 21½-22½. See Tables on pages 67, 69. Two out of twelve *concinens* had the bill 16, the rest 14½-15; eight *stevensi* measured 14½-15, whilst seventeen *haringtoni* were almost equally divided between 14-15: thus the characteristic of a 'longer and stronger bill' for the Chinese race (Vaurie, 1959) is useless for practical purposes.

Tail rounded, 10-15.

Wing-formula (pp. ascendant). Emarginated 3rd-5th, in some slightly at tip of 6th. 1st p. 1-6+ p.c. (*stevensi*), 4-8+ p.c. (*haringtoni*).

Wing-point 4th = 5th (once = 3rd); occasionally 5th, ½-1; 3rd, ½-2½; 6th, 1-3; 7th, 2½-4; 10th, 7-9.

2nd, 6½-8 (*stevensi*), 7-10 (*haringtoni*), falls between 8th-9th, occasionally shorter. Notch on inner web, 13-14½, falls well below tips of ss. Notch on inner web of 3rd falls just short of tips of ss., which are about 3-4 shorter than 10th p.

Distribution. N. Afghanistan to Kashmir, N.E. Assam and N. China south to Riv. Yangtze. Winters N.W. India, Burma, N. Thailand and S.E. China.

THE GREAT REED-WARBLEDERS

Many authors have lumped the various forms of Great Reed-Warbler under one species, *Acrocephalus arundinaceus*, the latest to do so being Meinertzhagen (1954). Stresemann and Arnold (1949) separated *A. arundinaceus* (with *zarudnyi* and *griseldis* as races) from *A. stentoreus* (with *brunnescens* and a number of other races in the Indo-Australian region). Further, being unable to decide on the proper affinity of the isolated form *orientalis*, they left this as a full species.

Here *A. arundinaceus* and *A. stentoreus* are kept separate, since Stresemann and Arnold quote Zarudny to show that *zarudnyi* and *brunnescens* overlap on the Lower Syr Darya and along the eastern shore and islands of the Aral Sea. Moreover, Meinertzhagen (*op. cit.*, p. 593) admits that the resident *stentoreus* shares the Huleh Swamp in N. Palestine with *A. a. arundinaceus*, the former mainly inhabiting *Papyrus* and the latter *Phragmites*, and this has since been confirmed by Zahavi (1957). In the southern Red Sea and N.W. India *stentoreus* is a bird of the coastal mangroves (*Avicennia*).

The form *griseldis* has a very restricted breeding range in reed-beds between Basra and Bagdad, Iraq. This smaller bird has the bill of a *stentoreus* but seems likely to be, as Stresemann and Arnold suggested, an early offshoot of *A. arundinaceus*. There is at present no evidence that *orientalis* is other than a geographical replacement of one or the other species, and in structure, plumage and wing-formula it comes closest to *arundinaceus*.

ACROCEPHALUS ARUNDINACEUS (Linnaeus)

Great Reed-Warbler

A. arundinaceus arundinaceus (Linnaeus)

The typical race is similar in plumage to a REED-WARBLER. Under parts suffused orange-buff in spring, whiter on throat and middle of belly; but this fades to a dull white in worn breeding dress. It has a pale supercilium, dusky lores, and pale brown shaft-streaks on a white throat.

Prefers dense beds of reeds (*Phragmites*) and reed-mace (*Typha*) with some open water and neighbouring trees and bushes. Occurs

in gardens on passage. Call-notes a harsh *chak* and deep churring croak. Song of REED-WARBLER type but louder, and with characteristic guttural, croaking *karra-karra-karra-keek*, *gurk-gurk-gurk* etc., interspersed with shriller piping notes. Sometimes strongly mimetic, and uttered by night as well as by day, occasionally from high exposed perch.

See photographs and notes by G. R. Mountfort, *Brit. Birds*, 44: 195-7, plates 25-9. Also field-notes in the same journal by I. Houston and W. Robinson, 44: 202-4, and R. A. W. Reynolds, 45: 220-1. See plate VI.

Ageing. Adults have under parts sullied white in autumn, 1st-winter suffused with orange-buff. In adults, tips to olive-brown scapulars, mantle and especially rump feathers are bleached and grey, giving a blotchy effect, whereas young are bright rusty-buff. 1st-winter have whitish tips to flight-feathers (abraded in adults) and a rusty-buff suffusion on tertials and secondaries.

Colours of soft parts. Bill: upper mandible dark brown, lower pinkish-flesh with dark brown tip. Legs: pale brownish-grey. Mouth: orange-red. Iris: yellowish-sepia. (*The Handbook*, ii, 44).

Measurements. Wing, ♂♂ 90-101, ♀♀ 88-96. Tail, ♂♂ 73-83, ♀♀ 72-80. Bill, 20-24. Tarsus, 28-32. Females average smaller than males (wings of 53 ♂♂, mean 95.77, s.d. 2.36; and of 19 ♀♀, mean 91.32, s.d. 2.03; tails of 51 ♂♂, mean 78.67, s.d. 2.57; and of 19 ♀♀, mean 74.32, s.d. 2.45). See Tables on pages 67, 69.

Tail rounded, 8-13. Wing/tail ratio of 94 birds, 77-88.

Weight. Kluz (1943) gives for ♂♂ 26-33 gm., one ♀ 26 gm. An autumn bird at Dungeness weighed 29.4 gm.

Wing-formula (pp. ascendant). Emarginated 3rd, sometimes slightly on 4th. 1st p. minute, about half p.c.

Wing-point 3rd, occasionally = 2nd; 4th, 2-4; 5th, 5½-8; 6th, 8-12½; 7th, 12-15½; 10th, 21-26.

2nd, 1-2½ (but occasionally = wing-point), usually longer than 4th. Notch on inner web about 15-16 from tip, falls between 6th-8th (once 8th-9th). No notch on inner web of 3rd.

The formula is the same for both *arundinaceus* and *zarudnyi* (cf. *griseldis* and *orientalis*).

Moult (pp. descendant). Post-nuptial wing and tail moult takes place in Africa. Two *arundinaceus* from Darfur, Sudan, 9.x., have just started the tertials with about half the pp. in active moult, but not the ss. or tail. A bird from Nyasaland, 21.xi., has not yet started, and one from the Congo Riv., 30.i., is about as far advanced in the wing as the Darfur birds, but has begun to grow a new tail. Two *zarudnyi* from Natal, 4.i., have only just renewed the innermost p. with pp. 2-3 growing, and others from S. Africa between 27.xi. and 12.xii., have not yet started. Two *arundinaceus* from Transvaal, 25.ii. (inner ss. growing) and 20.iii. (pp. 8-9 nearly full grown) have nearly finished. Thus the moult is very protracted and appears to be much later in the southern part of the winter range.

Distribution. Continental Europe from central Russia, S. Finland and S. Sweden south to the Mediterranean basin (including N. Africa); Asia Minor, Transcaucasia, N. Iran, Ural Mts north to about 57° N., W. Kirghiz Steppes. Winters in tropical and S. Africa. Vagrant to S. and E. England; single records for Faeroe Is, Shetland and Ireland (Co. Cork).

Occurrences in Great Britain and Ireland. As with several other marsh-loving species, the Great Reed Warbler's range has undergone some expansion to the northwest in recent years; breeding in S. Finland is relatively new, and in S. Sweden and S. Norway the species is scarce and irregular. Since the late 1950's visitations to England have been annual, and with very few exceptions have been of singing males in the summer months, between 12.v. and 17.vii., with only a handful of later occurrences down to 5.ix. (See fig. 1). In some instances, late May and early June arrivals, presumably 'overshooting' from central Europe, have stayed for long periods, e.g. an E. Sussex marsh, 35 or more days from 9.vi.; Ashby de la Zouch, Leics., 31 days from 5.vi.; Cape Clear Is., Co. Cork, 17 days from 10.vi.; E. Kent, 15 days from 26.v.; Frensham, Surrey and in E. Inverness, 13 days from 7.vi. and 8.vi. respectively.

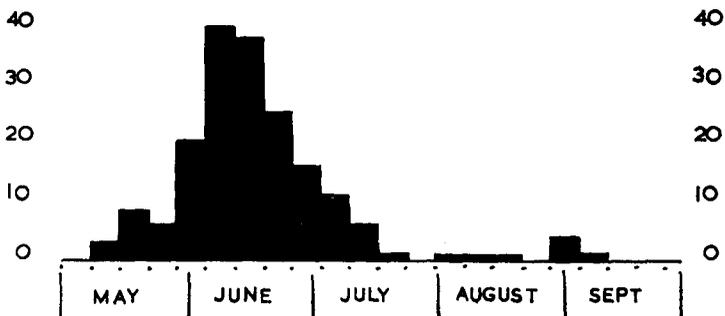


Fig. 1. GREAT REED WARBLER. Recorded 'bird-days' (weekly totals) in Great Britain and Ireland, 1958-1966. (Constructed from records in 'Report on rare birds in Great Britain', published annually in *British Birds*.)

A. arundinaceus zarudnyi Hartert.

The eastern form is more olive, less rufous (especially on the rump), and whiter below, having more the coloration of a MARSH-WARBLER. It has a pale supercilium, dusky lores and pale brown shaft streaks on a white throat.

Measurements. Wing, ♂♂ 91-102, ♀♀ 90-100. Tail, ♂♂ 72-84, ♀♀ 71-85. Bill, 20-24. Tarsus, 28-32. See Tables on pages 67, 69.

Weight. Oxford Univ. Exped. N. Iran, August 1963, average of 34 birds, 27.8 (23.2-34.0) gm.

Distribution. Aral-Caspian region and W. Siberian steppes east to Altai Mts, Tarbagatai Mts, N. Sinkiang. Winters in E. Africa south to Natal.

A. arundinaceus orientalis (Temminck and Schlegel).

A far eastern form with a shorter and more rounded wing but similar in coloration to the typical race; it is found in wet thickets near reeds and in reedy marshes along rivers. Song very low and coarse, rasping *char-char-char-chee* repeated several times, with variations, and occasional high-pitched whistling notes. Call-note a harsh, low-pitched *chark*.

Ageing. 1st-winter birds are more tawny above, especially on edges of wing-coverts, secondaries and tertials, and more tawny-buff below than adults.

Colours of soft parts. As typical race, but 'legs and feet lead-grey or bluish-grey' (*The Handbook*, ii, 45). Bill: upper mandible and tip of lower nearly black, rest of lower pinkish- to yellowish-flesh. Legs: mouse-grey. Mouth: orange. Iris: brown, or yellowish-sepia. (Shaw, 1936).

Measurements. Wing, ♂♂ 75-88, ♀♀ 75-83. Tail, ♂♂ 67-77, ♀♀ 67-71. Bill, 20-24. Tarsus, 27-31. See Tables on pages 67, 69. There appears to be a similar sexual dimorphism to that in the typical race.

Tail rounded, 10-13. Wing/tail ratio of 64 birds, 79-93.

Weight. Average of 46 ♂♂, 23 (17-33) gm., 15 ♀♀, 24 (18-28) gm. (Shaw, 1936).

Wing-formula (pp. ascendant). Emarginated 3rd or 3rd-4th. 1st p. minute, about half p.c.

Wing-point, 3rd, rarely = 4th; otherwise 4th, $\frac{1}{2}$ -2; 5th, 2-5; 6th, 6-9; 7th, 7-12; 10th, 14-21.

2nd, 1-4, usually between 4th-5th but rarely a little longer, once 1 shorter. Notch on inner web falls between 8th p. and ss., which are about 5 shorter than 10th p. and = longest tertial.

CAUTION. As many birds are completing moult between August-November, with the distal pp. short of their full length, an entirely misleading wing-formula could arise. The bases of these feathers should be examined for remains of sheaths.

Moult (pp. descendant). A complete post-nuptial moult takes place, apparently, on the breeding-ground. An August ♂ from the Yangtze Valley has nearly finished, with pp. 7-10 and ss. 4-6 not fully grown. A ♀ from Hakodadi, Japan, 22.viii., and another August bird are just finishing with p.9 and inner ss. short of full length, while one reputed to have been taken in Sussex, 24.viii.1916, was also completing moult. One from Peking, China, 11.ix., is at a similar stage with the tail new. An October bird from Foochow, S. China, has pp. 1-4 and tertials new, pp. 6-7 missing and 8th growing, the whole tail not quite half grown, and the body plumage old. One from the Yangtze Valley, 23.x., has almost finished with p. 9 and ss. 4-6 nearly fully extended.

Distribution. N. Mongolia eastwards to S.E. Transbaikalia, Amurland, Ussuriland, Japan; Manchuria, Korea and China south to Yangtze Valley. Winters over much of S.E. Asia between Philippine Is and Burma. Vagrant to Germany (*J.f.O.*, 97: 342).

A. arundinaceus griseldis (Hartlaub).

Smaller, and with a slender bill similar to *A. stentoreus*. Upper parts more olivaceous than in typical race and under parts whiter, but suffused creamy-yellow in fresh plumage. Remiges and rectrices blackish-brown with greyish-white tips in new plumage. It lacks the pale brown shaft-streaks on the white throat.

Colours of soft parts. Bill horn colour, tongue bright yellow, legs plumbeous, iris brown (Ticehurst, 1922).

Measurements. Wing, ♂♂ 80-83, ♀♀ 76-83. Tail, ♂♂ 60-68, ♀♀ 59-66. Bill, 20-23. Tarsus, 24-26. See Tables on pages 67, 69.

Tail slightly rounded, 5-9.

Wing-formula (pp. ascendant). Emarginated 3rd. 1st p. minute, about half p.c.

Wing-point, 3rd. 4th, $1\frac{1}{2}$ -2; 5th, $4\frac{1}{2}$ - $5\frac{1}{2}$; 6th, $7\frac{1}{2}$ -9; 7th, $9\frac{1}{2}$ - $11\frac{1}{2}$; 10th, 17-20.

2nd, $\frac{1}{2}$ - $1\frac{1}{2}$, falls between 3rd-4th. Notch on inner web 13-15 from tip, falls between 7th-9th.

Distribution. Lower Iraq, wintering E. Africa.

ACROCEPHALUS STENTOREUS (Hemprich and Ehrenberg)
Clamorous Reed-Warbler

A. stentoreus stentoreus (Hemprich and Ehrenberg).

Similar to GREAT REED-WARBLER but with a different wing-formula and more rounded tail, and an even longer bill. The typical race is brownish-olive above, with a rufous rump and pale supercilium; throat white, sometimes with a few dark shaft-streaks, rest of under parts warm buff.

Habitat similar to that of GREAT REED-WARBLER; also in coastal mangrove swamps. Call-note a loud repeated *chak*.

Ageing. 1st-winter birds are more rufous above, more rusty-buff below. In autumn, adults are a worn greyish-olive on upper parts and show the same blotchy greyish effect as GREAT REED-WARBLER; they are whiter below and have abraded wing and tail feathers, whereas young birds are in fresh plumage.

Colours of soft parts. Bill: upper and tip of lower mandible horn, rest of lower mandible pinkish-flesh. Legs: steely grey tinged greenish, especially on toes. Iris: pale sepia.

Measurements. Egyptian birds. Wing, ♂♂ 78-82, ♀♀ 73-78. Tail, both sexes 70-80. Bill, 23½-28. Tarsus, 27-30½. See Table on page 67.

Tail markedly rounded, 13-17 for outermost and 7-10 for penultimate feathers (cf. *A. arundinaceus*).

Wing-formula (pp. ascendant). Emarginated 3rd-4th, occasionally slightly on 5th. 1st p. minute, from half p.c. to 1— p.c.

Wing-point 3rd = 4th; 5th, 1-2; 6th, 4-5; 7th, 6-8; 8th, 8-9; 10th, 12-14.

2nd, 4-6, falls between 5th-6th, or is occasionally a shade longer. Notch on inner web 16-20 from tip falls well below ss. tips.

Moult (pp. descendant). See under *brunnescens*.

Distribution. Resident in Egypt (*stentoreus*), Palestine and Eritrea (? race—see NOTE on page 51).

A. stentoreus brunnescens (Jerdon).

The eastern form is more greyish-olive in fresh plumage, the difference in coloration being similar to that between REED- and MARSH-WARBLED, or *A. a. arundinaceus* and *A. a. zarudnyi*. It is also whiter below than the typical race, but buff on the flanks.

Ageing. See under *stentoreus*.

Colours of soft parts. Bill: upper mandible blackish-brown, base of lower mandible flesh-pink. Legs: variously described as 'sooty-grey', 'steely-plumbeous' and 'greenish-horn'; soles pale greenish. Mouth: bright salmon. Iris: yellowish-brown. (Ex labels, mainly H. Whistler.)

Measurements. Both sexes (only 3 ♀♀ available). Wing, 81-93. Tail, 76-90. Bill, 22-25. Tarsus, 28-32. See Tables on pages 67, 69,

Tail markedly rounded, 12-17 for outermost and 6-9 for penultimate pair (cf. *A. arundinaceus*). Wing/tail ratio of 30 birds. 84-96.

Wing-formula (pp. ascendant). Emarginated 3rd-4th (occasionally slightly on 5th). 1st p. minute, from half p.c. to 1— p.c.

Wing-point, 3rd = 4th, occasionally one or the other a shade shorter; otherwise 3rd or 4th, $\frac{1}{2}$ -1; 5th, $\frac{1}{2}$ -2 $\frac{1}{2}$; 6th, 3-7; 7th, 7-10; 10th, 14-18.

2nd, 3-6 $\frac{1}{2}$, falls between 5th-6th, or is occasionally a shade longer. Notch on inner web 17-21 from tip, falls well below tips of ss. Slight notch on inner web of 3rd falls between 8th-10th.

Ss. 3-5 shorter than 10th p.; longest tertial slightly longer than 10th p.

Moult (pp. descendant). Wing and tail moult takes place soon after arrival on the wintering grounds. Birds from Jodhpur, N.W. India, mid-x., have tail feathers and several outer pp. (pp. 6-9 in one case) all growing together, with innermost ss. also growing and tertials new. Birds from Jodhpur, 21.x., and Punjab, 27.x., have nearly finished, with pp. 7-9 and ss. 4-6 completing growth. Birds of the resident Egyptian form in a similar condition to this are dated Port Said, 30.ix. and 31.x., and a specimen of *amyae* at the same stage is dated 18.x. An Egyptian ♀, 11.xi., is just finishing.

Distribution. Turkestan from the Aral Sea eastwards to Tadzhikistan, Transcaspia, E. and S. Iran, Afghanistan, Baluchistan, N.W. India. Winters Persian Gulf and throughout India.

NOTE. Two ♂♂ from Palestine, 14.iii. and 25.v., are more brownish above and below than Egyptian birds, and are larger: wing 84, 87; tail, 82, 85; bill, 25, 27; tarsus, 28, 29. A January ♂ from Zula, Eritrea, is also larger, wing 85, tail 79, bill 24; and so also is a February ♂ from S.W. Arabia, wing and tail 83, bill 25, tarsus 29. In plumage, the two last-mentioned match *brunnescens* from the same season, though both localities are far outside the normal winter range of that form.

According to K. D. Smith (*Ibis*, 99: 333; *Bull. B.O.C.* 81: 28-29) a species of large reed-warbler sings commonly in mangrove swamps on the Eritrean coast in late May, and as Heuglin took a nest of *stentoreus* there (J.f.O., 1868, p. 136) it may well be this species.

There are a number of other races in the Indo-Australian region, including *A.s. amylae* (Assam, Burma, S.E. China). It is noticeably bigger than *A.a. orientalis* and has a different wing-formula. Measurements: wing ♂♂ 82-89, ♀♀ 78-87; tail 75-81; bill 20-24; tarsus 29-33. Wing-formula: 1st p. minute; 3rd-4th longest; emarginated 3rd-5th, slightly on 6th; 2nd, 5-7, usually between 6th-7th or just shorter than 6th, notch 20-22 from tip falls well below tips of ss. Moults: a ♂, 18.x., has almost completed moult of remiges, tail and body plumage being new.

ACROCEPHALUS ORINUS Oberholser

This name describes a unique type in the British Museum collected by Hume in the Sutlej Valley of the Himalayas, near Rampoor, 13.ix.1867 (see Hartert 1910, p. 565; Vaurie 1959, p. 242). Its status as a full species whose breeding range is still unknown may be doubted.

Vaurie (1955, p. 9) discusses the specimen, describing the wing-formula in detail—5th p. longest, 2nd 10 shorter and 3rd-4th intermediate (ascendant numbering), but this is unhelpful since it is in moult, and all these feathers save perhaps the 5th are short of their full length (traces of the waxy sheaths can be found by parting the primary coverts). The wing and tail measure about 60 but are probably short—almost certainly the wing is, but the skin is so badly prepared that it is impossible to ascertain if the tail-feathers are still growing. The primaries are emarginated 3rd-5th; the outermost (? short) is 1 + p.c., and there is a notch on inner web of 2nd 15 from tip.

The difficult feature is the bill, which is long and strongly made, and akin to that of a small *A. stentoreus* (such as *toxopei* of the Molucca Is). It measures 19 from skull and 11 from nostrils to tip. The rictal bristles are weak. The tarsus is 23½ and the hind-claw 7. The plumage is almost identical with *A. concinens* (or with

A. s. toxopei for that matter), being a dark brown above and buffish-white below, heavily washed with fulvous on sides of breast and flanks. Perhaps the best guess is that it represents a rare and isolated form of the widely but very patchily distributed *A. stentoreus*.

ACROCEPHALUS AEDON (Pallas)

Thick-billed Warbler

Similar to GREAT REED-WARBLER but with a thicker, shorter bill and much rounder wing and tail. Tail often longer than wing. No superciliary stripe.

Haunts marshy places with bushes or low trees close to water; or on wood-edges, in gardens, by roadsides etc. Also in hazel thickets and thinned birch forests: in winter in tea and coffee plantations. Shy; raises its crown feathers into a conspicuous crest, and moves the tail in a shrike-like manner. Call-note a loud, chattering *cherr-cherr-tschok*. Song mimetic, beginning with several repeats of the *tschok* note, followed by a hurried chatter interspersed with melodious phrases and borrowings. See Neufeldt (1967). For a note on field-characters see K. Williamson *et al.*, *Brit. Birds*, 49: 89-93. See plate VII.

The form *rufescens* Stegmann, said to be darker and more rufous above, does not seem very satisfactory when birds from the same season are compared—although a critical assessment is bedevilled by the 'foxing' of many cabinet specimens. Measurements of the two forms overlap widely.

Ageing. 1st-winter birds are rufous, with fresh wing and tail feathers, adults more olive, especially on mantle, and with worn wings and tail.

Colours of soft parts. Bill: upper mandible dark brown, lower flesh. Legs: bluish, inclining to purplish at sides, toes blue. Iris: olive-brown. (Own notes). Bill: upper mandible horn, lower yellow. Legs: variously described as greyish-brown, pale plumbeous, greenish-grey. Mouth: pinkish-flesh. Iris: dark brown.

Measurements. Wing, ♂♂ 74-83, ♀♀ 73-84. Tail, ♂♂ 78-92, ♀♀ 77-87. Bill, 17-20. Tarsus, 26-31. See Tables on pages 67, 69. Width of bill at nostrils, 5-6½.

Tail very strongly rounded, 20-25 (occasionally to 29) for outermost, and 8-12 (once 14) for penultimate feathers. Wing/tail ratio of 58 birds, 102-114.

Weight. Average of 21 ♂♂, 23 (19-31) gm.; 8 ♀♀, 21 (15-28) gm. (Shaw, 1936). The Fair Isle bird, 1st-winter, weighed 22.84 gm.

Wing-formula (pp. ascendant). Emarginated 3rd-5th. Very long 1st p. 6-9+ p.c., reaching nearly midway along 2nd.

Wing-point 4th, sometimes = 3rd, rarely = 5th; otherwise 3rd, $\frac{1}{2}$, and 5th $\frac{1}{2}$ -1; 6th, $2\frac{1}{2}$ -4; 7th, 6-7 $\frac{1}{2}$; 8th, 8-10 $\frac{1}{2}$; 10th, 13-16.

2nd, 7-10, shorter than (rarely =) 7th. Notch on inner web falls about half-way down ss. Notch on inner web of 3rd falls below 10th, and on inner web of 4th between 9th-10th.

Moult (pp. descendant). The only moulting examples seen were October birds. One from Assam, 4.x., had pp. 1-4, tertials and tail growing; and a ♂ from Foochow, S. China, 24.x., was completing growth of pp. 8-10 and had tertials and tail new. A ♂ from Bengal, 8.xi., had just finished. These were wintering birds, so it seems likely that moult commences soon after arrival in winter quarters.

Distribution. S. Siberia (west to Novosibirsk on Riv. Ob) and N. Mongolia (*aedon*) east to Manchuria, Amurland, Ussuriland, N.E. China (*rufescens*). Winters in S. China, E. India and Pakistan, and much of S.E. Asia. Vagrant to Japan (Nagano, v.1957) and Scotland (Fair Isle, 6.x.1955).

Genus HIPPOLAIS

NOTES ON FIELD IDENTIFICATION

With the growth of mist-netting and observatory work some ringers are experiencing considerable difficulty in the proper identification of the *Hippolais* warblers; cases of misidentification of Olivaceous as Melodious (and *vice versa*) and of Olivaceous as Blyth's Reed have come to notice. The need to trap is often urgent, but whenever possible a doubtful bird should be observed closely in the field.

It is hoped that the following notes, summarised from an informative and invaluable paper by D. I. M. Wallace (1964), will help in this connection. A plate showing the main characteristics of the six *Hippolais* species, drawn by Wallace to illustrate his paper, is reproduced with his kind permission and that of *British Birds* as Frontispiece to this edition.

The best opportunities for recording field-notes will come to a stationary observer—'stalking a *Hippolais* is usually a fruitless manoeuvre'. They are fairly large to quite large warblers of heavy build, excepting *caligata*. In all species the body often appears plump (sometimes even pear-shaped with a belly-down appearance) and has a rather flat back and tail line extended by a

prominent head and, excepting again *caligata*, a strong and often long bill. When perched they often appear to carry more bulk forward of the legs than aft, looking sometimes short-tailed in the field.' 'All six species have a distinct, almost clumsy foraging action as they move through foliage; it is most diagnostic in a characteristic upward stretch of the neck and tug of the head when picking off fruit berries.'

Differences from *Acrocephalus*. Greener or greyer plumage (but see note on plumage variants below). Relatively longer wings and tail, *the latter square-ended not graduated*. Short under tail-coverts, contributing to the distinctive body-shape mentioned above.

Differences from Garden Warbler *Sylvia borin*. Best seen in the head, Garden Warbler lacking a supercilium and having a *short and comparatively deep bill* instead of a long one broad at the base. (Compare *Identification for Ringers*, 3, plate I, and this edition, plate VIII).

Head Shape. The least angled forehead and flattest crown belong to *pallida*; *icterina* is similar but with a tendency towards a crown-peak behind rather than just in front of the eye as in Melodious. This shows a combination of a distinctly angled forehead and fairly high, evenly rounded crown. Among non-British species, Olive-tree resembles Icterine and Upcher's resembles Melodious. The crown in Booted is quite markedly rounded with the peak behind the eye.

Wing Shape. In Icterine, Olive-tree and Upcher's the tips of the folded primaries fall at or beyond the tips of the upper tail-coverts, and 'the slim point formed by the extension of the bunched primaries beyond the secondaries represents *about a third* of the total visible wing-length'. In the other three species this feature represents only *about a quarter* (or even less) of the visible wing-length. The two largest species, *olivetorum* and *icterina*, have the most pointed wings, these being rounder in the other species and 'almost fan-shaped' in *caligata*.

Tail Shape. Longest in *olivetorum*, though the fact is sometimes obscured by its relatively massive build. Upcher's looks to have a distinctly longer tail than any of the others, 'an impression heightened by the fact that it flicks it frequently', slightly opening it at the same time, and often 'cocking' it. Icterine and Olivaceous both have longer tails than Melodious, and in *pallida* and *olivetorum* there is a suggestion of a more rounded tail than in the others.

Wing-panel. The overlapping, or close proximity of the pale fringes of the inner secondaries and tertials in the closed wing creates a 'light patch' or 'mid-wing panel', differences in the form of which help to distinguish between Icterine and Melodious. The panel is most distinct, 'a continuous light area', in spring Icterine; but (contrary to earlier statements made by me from study of skins) a marked panel may be present in spring Melodious, though generally (as noted by I. J. Ferguson-Lees) the pale feather edges are clearly separated and do not form a uniformly light area. (Occasionally, however, a *polyglotta* in spring will show as good a wing-panel as any Icterine; and it should be noted that in some *icterina* the panel is less strongly developed than in most.) In autumn, the panel is less well marked in Icterine, adults and young, than in spring, but is nevertheless noticeable, whereas this character is then absent from *polyglotta*, adults and young.

Plumage Variants. Very full descriptions of adults in spring and immatures in autumn are given by Wallace. He also discusses plumage variations in individual species. The most obvious hazard to watchers and ringers is the not infrequent occurrence of pale *icterina* in which the greenish tinge of upper parts is suppressed and the yellow pigment almost absent beneath. Adults of this kind may occur at both seasons, and immatures in autumn. Similar 'washed-out' examples occur regularly in *polyglotta* also, among breeding birds in Spain and autumn vagrants to Britain. The danger of mis-identification of such 'brown-and-white' variants as *pallida*, or even as *Sylvia borin* or some *Acrocephalus* species is obvious.

HIPPOLAIS ICTERINA (Vieillot)

Icterine Warbler

Uniform brownish-olive upper parts and yellow under parts, sides of breast and flanks slightly tinged brownish. Short yellow supercilium and ring round eye, and yellowish at bend of wing. Wing and tail feathers dark brown in fresh plumage, fringes of secondaries and tertiaries golden-yellow (adult in spring) or whitish (1st-winter), which together with fringes of greater coverts form a pale panel in the closed wing, contrasting markedly with the rest of the wing (see K. Williamson, *Brit. Birds*, 49: 119-20). This pale panel provides the best character for separation in the field from MELODIOUS WARBLER (but see page 54). As there is a complete moult late in the winter this feature persists well into the breeding season.

Frequents hedgerows, woods with lush undergrowth, gardens, town parks etc. in both damp and dry situations. Call-notes a liquid, melodious *diderid*, a harsh *Sylvia*-like *tek, tek* and a churr of alarm; also a *Phylloscopus*-like *hooeet* recorded in autumn. Song much like MARSH-WARBLER'S, loud, vehement and varied, with rich musical notes freely interspersed with a discordant chatter and other grating noises. Often markedly imitative; occasionally heard by night. See plate VIII.

Ageing. Young birds in autumn show the pale mid-wing panel, whereas adults do not, the remiges and coverts being very abraded.

Colours of soft parts. Bill: upper mandible dark brown, lower mandible flesh, both being yellow along cutting edges. Legs: blue at front, purplish-flesh at sides. Mouth: bright orange. Iris: dark or olive-brown. (Own notes.)

Measurements. Wing, ♂♂ 72-83, ♀♀ 71-78. Tail, ♂♂ 49-57 (60) ♀♀ 47-55. Bill, $14\frac{1}{2}$ - $17\frac{1}{2}$. Tarsus, 20-23. See Tables on pages 67, 69.

Tail almost square, in some slightly rounded. Wing/tail ratio of 80 birds, 65-73 (cf. *polyglotta* and *olivetorum*).

Weight. Average of 27 at Fair Isle and Isle of May, 12.4 (10.8-15.1) gm. Average of 14 at Irish Sea and Channel coast observatories 14.9 (12.1-22.4) gm. The last clearly include more 'off-passage' birds: one at Copeland, 12.1 on 14.ix, increased to 17.0 after 4 days and to 22.4 gm. after 14 days.

Wing-Formula (pp. ascendant) Emarginated 3rd-4th, occasionally near tip of 5th, though this is slight. In western examples, 1st p. is between 3— and 3+ p.c., but in five eastern examples = p.c.

Wing-point, 3rd in sixteen western examples, but 3rd = 4th in four out of five eastern birds examined, the difference in the other being $\frac{1}{2}$. 4th, $\frac{1}{2}$ -2 $\frac{1}{2}$; 5th, 3 $\frac{1}{2}$ -6; 6th, 8-10; 7th, 12-15; 10th, 20-25.

2nd, 1 $\frac{1}{2}$ -4, falls between 4th-5th; but in five eastern birds 2-4 shorter than 4th. Notch on inner web slight, 18-19 from tip, falls between 9th-10th. See note under *H. polyglotta*.

Moult (pp. descendant). I can find no evidence in this species or *polyglotta* to support the statement in *The Handbook* (ii, 63, 66) that new plumage is acquired by a complete post-nuptial moult from July to October. The moult takes place in winter quarters late in the year: thus autumn adults in Europe, and for some time after reaching Africa, have extremely worn remiges and rectrices. Two early December birds from N. Rhodesia have not yet started, but one from Zambesi Riv., 14.xii., has shed the innermost p. and tertials, while one from Nyasaland, 12.xii., has p. 5 and tertials missing, p. 4 very small and pp. 1-3 new. Others from Nyasaland, 7.i., and S.E. Congo, 18.i., have reached the stage of growing pp. 8-9 and ss. 1-2 and tertials. Examples from Uganda and Damaraland, 31.iii., have finished, and one completing ss. 4-6 on 10.iv. is probably a late bird. The only moulting example seen in Europe is from Warsaw, Poland, 9.v., finishing the tail.

The moult is clearly much later in the year than in *polyglotta* (q.v.), with the consequence that adults reach Europe in spring in much fresher plumage and can usually be identified by the yellow panel in mid-wing (see page 54).

Distribution. Continental Europe from about the Arctic Circle south to N. and E. France, Italy, Yugoslavia and the Balkans; Transcaucasia and N. Iran eastward across W. Siberian steppes. Winters tropical and S. Africa. Fairly regular migrant E. and S. Britain, less so in the Irish Sea basin. Probably bred Wiltshire, 1907.

NOTE. Races have been described (*borisi* von Jordans, Bulgaria; *alaris* Stresemann, Iran,) but are not generally recognised (see Vaurie, 1954.)

HIPPOLAIS POLYGLOTTA (Vieillot)*Melodious Warbler*

Like ICTERINE, though brighter olive above and yellower beneath in new plumage. Fringes of secondaries, tertials and greater coverts buffish-brown, not white or yellowish, so that the pale mid-wing panel is never so conspicuous as in ICTERINE in 1st-winter, while it has sometimes disappeared from spring adults by the time they reach Europe. Pale yellow at bend of wing.

Haunts trees and bushes along streamsides and roadside verges; open woodland, especially with dense growth of oak, alder, acacia etc., more rarely in gardens except after breeding season. Call-note a sparrow-like twitter or chatter quite different from ICTERINE WARBLER'S—a harsh, rattling *kurr*—but on passage also has a leaf-warbler like *hooeet*. Song more subdued and less vehement than ICTERINE WARBLER'S, more musical and varied and lacking the harsher passages. Rapid in delivery, and often imitative.

A number of notes on field-characters have appeared in *Brit. Birds*, the most useful being, 48: 284-5; 49: 94-6, 119-20, 232-3 and 50: 124.

Ageing. Adults are extremely worn by autumn, so that birds in fresh plumage with brownish-buff fringes to ss. and tertials are 1st-winter. Occasionally these are deficient in olive and yellow pigments and could be confused with OLIVACEOUS WARBLER; they are without white in the tail, however.

Colours of soft parts. Bill: dark brown, lower mandible yellowish-flesh. Legs: bluish-grey, grey tinged olive. Mouth: bright orange. Iris: dark brown.

Measurements. Wing, ♂♂ 62-69, ♀♀ 61-66. Tail, ♂♂ 46-56, ♀♀ 46-51. Bill, 14-17. Tarsus, 20-23. See Tables on pages 67, 69.

Tail nearly square. Wing/tail ratio of 85 birds, 74-83 (cf. *icterina*).

Weight. In autumn 1962, 43 weighings at Irish Sea and south coast observatories averaged 12.7 (9.8-17.3) gm. Clearly these include new arrivals and 'off-passage' birds. Birds at Bardsey showed 'off-passage' gains of 4 on 12.6 gm. after 11 days, and 5 on 10.9 gm. after 8 days.

Wing-formula (pp. ascendant) Emarginated 3rd-5th. Long 1st p. 3-8+ p.c., broader and rounder than in *icterina*.

Wing-point, 3rd = 4th (rarely = 5th; 3rd occasionally 1-1½). Otherwise, 5th, ½-1½; 6th, 2-5; 7th, 5-7; 10th, 13-15.

2nd, 4-9½, falls between 6th-7th or shorter. Notch on inner web, slight, 18-19 from tip, falls midway along ss.

It will be seen that MELODIOUS has a much rounder wing than ICTERINE. From the proximal part of the pale panel to wing-tip measures about 25 in ICTERINE, and the distance between tip of longest tertial and wing-point equals the distance between wing-point and tip of tail. In MELODIOUS the comparable buffish-brown panel (if it exists) measures about 12, while the distance from tip of longest tertial to wing-point is only half that of wing-point to tip of tail.

Moult (pp. descendant). September and October birds from Italy and S. France are very worn, and so is one from Uganda, 26.x. However, a bird from Timbuctu, 18.x., is well advanced, with pp. 8-9 growing and the rest, plus ss. 1-2, tertials and tail, new. (This is at the same stage as an *icterina* from S.E. Congo dated 18.i., indicating a difference of some three months in the timing of the moult.) One from Nigeria, 15.xii. is complete except for short ss. 4-6. Other December birds from Ivory Coast round to Nigeria are in fresh plumage, and the moult is obviously very early, in all probability beginning as soon as the birds reach the wintering area. March examples are already looking rather worn, and many (though not all) spring migrants are well worn by the time they arrive on the breeding-grounds (cf. *H. icterina*).

Distribution. Iberian Peninsula, France (except N. and E.), S. Tyrol, Italy and N. Africa, wintering W. Africa from Senegal to Cameroons. Of regular occurrence S. England and Irish Sea basin, twice only Scotland (Is. May, 27.ix.1913; Fair Isle, 16.ix.1955). There was a remarkable number of occurrences—over 50—at Irish Sea and English Channel bird observatories in autumn 1962.

HIPPOLAIS PALLIDA (Hemprich and Ehrenberg)

Olivaceous Warbler

H. pallida opaca Cabanis

H. pallida elaeica (Lindermeyer)

The two races most likely to occur in Britain are *opaca* (southern: Spain and N. Africa) and *elaieica* (eastern: Balkans, Asia Minor,

Turkestan etc.). They should be separable in the hand, and for better comparison are here dealt with together.

They have olive upper parts, with a greyish tinge in *opaca* and a greenish one in *elaieca* in 1st-winter, but *vice versa* with adults in fresh plumage in Africa. Both wear to a greyish-olive on the breeding-ground. Wings and tail are brown; outer and penultimate tail-feathers are brownish-white with whitish tips, prominent in new plumage but persisting even in worn birds. There is no pale patch in mid-wing, and no yellow at the bend of wing. Under parts creamy or suffused pale buff, throat often whiter.

The race *opaca* inhabits gardens and orchards, preferring tall trees to bushes, and is said to be active, tame and fearless, in contrast with *pallida*, which is described as shy and skulking. The form *elaieca* occurs in bush-covered places from wet valley-bottoms to c. 6,000 feet. Call-note a sharp *tchak-tchak*; song acrocephaline in character, rather loud and harsh.

For notes on field-characters see I. C. T. Nisbet and T. C. Smout, *Brit. Birds*, 50: 203; also K. E. L. Simmons, *Ibis*, 94: 203.

Ageing. Young in autumn incline to buffy-olive on the rump and creamy-white beneath. The only birds in fresh plumage in Europe in autumn are 1st-winter.

Colours of soft parts. Bill: dark brown above, yellowish-horn below. Legs: blue-grey or grey-brown. Mouth: orange-yellow. Iris: sepia.

Measurements. *Opaca*: Wing, ♂♂ 65-72, ♀♀ 64-69. Tail, ♂♂ 54-63, ♀♀ 54-58. Bill, 17-19. Tarsus, 22-24½. *Elaieca*: Wing, ♂♂ 63-71, ♀♀ 62-66. Tail, ♂♂ 49-59, ♀♀ 50-55. Bill, 14½-17. Tarsus, 20½-23. See Tables on pages 67, 69.

The tail is longer in *opaca* and any with 60 or over could safely be referred to this subspecies. A useful criterion is the bill measurement: width at base of nostrils in *elaieca* is usually 4-5 (rarely to 5½), and in *opaca* 5-6 (rarely to 6½).

Tail slightly rounded, 5-8.

Weight. 1st-winter *opaca* at Skokholm, 12.3 gm.; 1st-winter *elaieca* at Tory Is., Co. Donegal, 9.15 gm.

Wing-formula (pp. ascendant) Emarginated 3rd-5th. Long 1st p. 3-7½ + p.c. in *elaeica*, 6-8 + p.c. in *opaca*.

Wing-point, 3rd = 4th (once = 5th, both races). 5th, ½-2; 6th, 3-4½; 7th, 5-7; 10th, 10½-13.

2nd, 3½-6, = 7th or longer (between 6th-7th) in *elaeica*; 6-8½, = 7th or shorter (between 7th-8th) in *opaca*; but there are probably exceptions in both races. Notch on inner web falls about middle of ss.

Moult (pp. descendant). Both races moult in winter quarters, and the change appears to be protracted. An *opaca* from French Sudan, 24.xii., has only pp. 1-4 and the middle pair of tail-feathers new, whereas another from the same locality, 25.xii., has practically finished, only ss. 4-6 remaining of the old plumage. January birds from French Sudan and Gambia have all finished except for one, 29.i., which still has to replace ss. 4-6. The earliest *elaeica* showing moult are birds from British E. Africa, 2.xi. and 14.xi., the latter with pp. 1-5 and ss. 1-2 new, as well as tertials and tail; but two other November birds, and two dated 16.xii. and 18.xii., show no sign. Other birds from E. Africa dated 2.xii., 8.i. and 10.i., and one from Abyssinia, 16.i., are at approximately the same stage as the above November birds, but one from Mongala, White Nile, 31.xii., is not so far advanced. Another from this locality and date has finished, while one from E. Africa dated 6.xii. has absolutely fresh wings and tail. At the other extreme a Tanganyika bird is just finishing on 17.iii. Some specimens from Arabia have much fresher-looking wings than others, which may be 1st-summer.

Distribution. Central and S. Spain to S. Morocco, N. Algeria and N. Tunisia, wintering W. Africa (*opaca*). S. Hungary, Greece, Yugoslavia and Balkan countries to Near East, eastwards through Transcaspia and Turkestan to Tadzhikistan and W. Tian Shan, south to Iran and N. Afghanistan, wintering E. Africa (*elaeica*). Both races have occurred at British bird observatories, *opaca* at Skokholm (Wales), 23.ix.—3.x.1951, *elaeica* at Portland Bill (S. England), 16.viii.1956, Tory Is (Ireland), 29.ix.1959, and Isle of May (Scotland), 24-26.ix.1967. There have been recent sight-records (? race) at St. Agnes, Scilly Is, 3-4.x.1961; Portland, Dorset, 5.ix.1962 and 20.viii.1967; and Sandwich Bay, Kent, 27.ix.1967.

NOTE. The typical race is Egyptian; another, *reiseri* Hilgert, is found in oases of S. Algeria and S. Tunisia; and a fifth, *laeneni* Niethammer, confined to Lake Chad, may not be worthy of separation from *pallida* (C. M. N. White, *Bull. B.O.C.* 80: 21).

HIPPOLAIS CALIGATA (Lichtenstein)*Booted and Sykes's Warblers**H. caligata caligata* (Lichtenstein)*H. caligata rama* (Sykes)

A small edition of OLIVACEOUS WARBLER with a finer bill more akin to *Phylloscopus* than *Hippolais*. Greyish-brown above and white below in breeding dress, faintly washed with buff on breast, flanks and under tail-coverts. Fairly distinct buffish-white supercilium and narrow ring round eye. Outer tail-feathers brownish-white becoming white at tips, penultimate feathers also tipped white.

Found in bush covered localities close to water and on the dry steppe; also birch woods and tamarisk thickets. Among high herbaceous vegetation in agricultural country, and around shores of salt lakes in dry steppes. (Hans Johansen.) Extremely skulking. Call-note a sharp *click*. Song, uttered by night as well as day, said to be powerful and sweet.

The two races are best considered together. The BOOTED WARBLER *caligata* from S. Russian steppes and Siberia is less grey, more olive above, than SYKES'S WARBLER *rama* from Turkestan etc. The former has a finer bill and generally shorter tail than *rama* and is buffer below. There are slight differences in wing-formula but these show too much overlap to be of value for identification.

For field-characters etc. and discussion of the affinities of a bird trapped at Fair Isle see P. Davis, *Brit. Birds*, 52: 123-5.

Ageing. 1st-winter *caligata* is a greyish-olive bird, whereas adults in autumn are warm brownish-olive above, inclining to buffy-olive on the rump, having completed a body moult in late summer on the breeding-grounds. 1st-winter birds are less buffy below, and their tails often show fading and wear.

A 1st-winter bird from the Tian Shan range, labelled *annectens* (and others from Turkestan, Punjab and Gilgit with a similar, unusual, wing-formula) incline to sandy-brown, with the fringes of secondaries and tertiaries warm buffish-brown.

Colours of soft parts. Bill: dark brown, basal half of lower mandible pale pinkish or yellowish-horn. Legs: pale brown tinged

blue-grey, soles olive. Mouth: bright yellow. Iris: olive-brown. (P. Davis, *op. cit.* and ex labels.)

Measurements. *Caligata*. Wing, ♂♂ 57-61, ♀♀ 57-62. Tail, ♂♂ 44-52, ♀♀ 43-51. Bill, 12-14, mostly 13-13½. *Rama*. Wing, ♂♂ 59-64, ♀♀ 57-61. Tail, ♂♂ 50-57 (very exceptionally shorter), ♀♀ 46-56. Bill, 13-16, mostly 14-15. Tarsus, both races and sexes, 19-22. See Tables on pages 67, 69.

Tail almost square. Wing/tail ratio of 50 each, 77-84 in *caligata*, 82-98 in *rama*.

Weight. Oxford Univ. Exped. N. Iran, August 1963, average of 4 birds 9.8 (8.6-11.0) gm. One at Fair Isle, 8.4 gm.

Wing-formula (pp. ascendant). Emarginated 3rd-5th, occasionally 6th, especially in breeding *rama* examined. Long 1st p. 3-10+ p.c., usually longer in *rama* than *caligata*, but there is considerable overlap.

Wing-point, 3rd = 4th (once 4th, ½), occasionally = 5th; otherwise 5th, ½-2; 6th, 1-2½; 7th, 3-5½; 10th, 9-12.

2nd, 4½-7½, falls between 6th-8th in *caligata* and 7th-9th in *rama*.

Four 1st-winter birds matching the *annectens* from the Tian Shan range have a slightly different formula with 6th, 3-4; 7th, 5½-7; 10th, 11-14½; and 2nd, 4-5, = 6th or between 6th-7th.

Moult (pp. descendant). Both races appear to moult very early, probably renewing body plumage before migration and wings and tail immediately on reaching wintering grounds in India. A bird from Punjab, 13.viii., has finished the body and is renewing tertials, tail and pp. 1-4. Another dated 11.ix., is half-way through wing moult, with the tail new but tertials old, whilst two dated 12.ix. and one 17.ix. are already finishing the innermost ss. One from United Provinces, 27.ix., and two from the Punjab, 3.x., have practically finished; but a late bird from Bombay, 1.x., has only pp. 1-4 new and p. 5, together with s.1, tertials and tail, growing.

Distribution. Russia eastwards to Yenesei, south to Kirghiz Steppes and S. Ural Mts, wintering in the northern part of peninsula India (*caligata*). Iran, Afghanistan, Transcaspia, Turkestan east to Tadzhikistan, Tian Shan range and Sinkiang, wintering S. Arabia and India to Ceylon (*rama*). The species has occurred in Germany (Heligoland, 28.ix.1851), Sweden (Ottenby, 1.vi.1954), England (St. Agnes, Scilly Is, 23.x.1966), and Scotland (Fair Isle, 3.ix.1936, 29-31.viii.1959 and 28.viii-17.ix.1966).

NOTE. A very large region in central Asia is inhabited, apparently, by heterogeneous populations that are hybrid to a varying degree between *caligata* and *rama*. 'They have received many names . . .' (Vaurie, 1959, p. 251). One such, *annectens* Sushkin, is accepted as a valid subspecies by the *Handbook of Birds of the Soviet Union*, 1954, vol. 6.

HIPPOLAIS OLIVETORUM (Strickland)

Olive-Tree Warbler

Brownish-grey above, with slight whitish supercilium and eye-ring. Under parts white, suffused with pale yellow on the breast and greyish on the flanks. White fringes to tertiaries and secondaries form a light mid-wing panel as in 1st-winter ICTERINE: this persists in adults until about mid-June. Outer tail-feathers have white margins, and these and the penultimate feathers a white crescent at tip.

Frequents open canopy oak-woods, olive groves, orchards. Shy and secretive. Song resembles SEDGE-WARBLER's in loudness and rapidity but is superior in tone.

In size and tone of plumage this bird resembles 1st-winter BARRED WARBLER *Sylvia nisoria*. However, I. J. Ferguson-Lees, P. A. D. Hollom and R. Spencer, who met with both species in Bulgaria, emphasize that its greyness, large size and heavy build, and especially its enormous bill, make *olivetorum* a very distinctive species. Compared with BARRED WARBLER it has a proportionately shorter tail and noticeably larger body, whilst the long dagger-like bill (thick with curved culmen in *nisoria*) recalls that of GREAT REED-WARBLER; also 1st-winter BARRED has buff tips to greater and median coverts. In the hand, wing-formula and bill-measurement should suffice, and a further difference is that the white mark at the tip of the outer tail-feathers is half-moon shaped in *olivetorum* and wedge-shaped in *nisoria*.

Other features stressed by the above observers (*in litt.*) are: secondaries with pale whitish outer webs forming a prominent whitish panel on closed wing at rest (but not noticed in flight); pale supercilium extending behind eye; crown slightly peaked at rear; under parts greyish-white, not noticeably buff on breast.

Ageing. 1st-winter birds are rather more olive above than adults, and have fresh wings with the whitish mid-wing panel. There is no yellow on under parts or at bend of wing as in ICTERINE.

Colours of soft parts. Bill: upper mandible dark brown, lower yellowish. Legs: bluish-grey. (Ex labels.) Bill: pale horn-brown, yellowish at base and along cutting-edges. Legs: dull pale bluish-grey. Eye: dark. (Above-named observers.)

Measurements. Both sexes. Wing, 82-90. Tail, 62-72. Bill, 18-21½. Tarsus, 22-27. See Tables on pages 67, 69.

Thus measurements fall within the same range as BARRED WARBLER except for bill, which is (14) 16-17½ in *nisoria*.

Tail slightly rounded, 5-8. Wing/tail ratio of 32 birds, 74-84 (cf. *icterina*).

Wing-formula (pp. ascendant). Emargination, 3rd-4th. 1st p. minute, about half p.c.

Wing-point, 3rd, occasionally = 4th; otherwise 4th, 1½-3; 5th, 5-7; 6th, 9-11; 7th, 11-14; 10th, 20½-24.

2nd, 1½-3½, = 4th or slightly shorter, between 4th-5th. Notch on inner web about 17-18 from tip, falls between 8th-10th. Slight notch on inner web of 3rd falls between 6th-7th.

In BARRED WARBLER the 10th is 17-20; 2nd = 4th or is slightly longer, between 3rd-4th; and the notch on inner web of 2nd falls between 8th-9th.

Moult (pp. descendant). Two from Nyasaland, 20.iii. and 16.iv., are in fresh plumage, the former very new: this, coupled with the persistence of the pale mid-wing panel into May and early June, suggests that the complete moult takes place in Africa early in the year.

Distribution. Greece, Yugoslavia and Bulgaria to Asia Minor and the Levant. Winters E. Africa south to Transvaal.

HIPPOLAIS LANGUIDA (Hemprich and Ehrenberg)

Upcher's Warbler

This stands in the same relation to *olivetorum* as MELODIOUS does to ICTERINE. Brownish-grey above, with a faint white supercilium and eye-ring; whitish below, suffused with pale buff on flanks and under tail-coverts, and occasionally also on breast. The fringes to tertiaries and secondaries are white in freshly-moulted birds, buffish-olive in young, and therefore not conspicuous in birds in Near East since the wing-panel effect has disappeared by the time adults reach the breeding grounds. Outer webs of outer tail-feathers brownish-white, broadly tipped white on inner web, the penultimate feathers narrowly tipped white.

Frequents gardens, bush-covered plains and wooded ravines to 6,000 feet; commoner than *H. pallida* in open and semi-desert country. Call-note a sharp *chik, chik*.

On size and colouring this species could be confused with GARDEN WARBLER *Sylvia borin*, which however is more olive-brown in 1st-winter plumage, lacks the distinctive tail markings, and has a different wing-formula.

Ageing. Adults in autumn are without buffish-olive fringes to the wing-feathers, and their remiges and rectrices are very worn. Adults are then browner above, more infuscated below, than the fresh-looking 1st-winter birds.

Colour of soft parts. Bill: upper mandible dark brown, lower mandible flesh. Legs: light brown or flesh. Iris: hazel or light brown.

Measurements. Wing, ♂♂ 73-79, ♀♀ 72-77. Tail, both sexes, 58-65. Bill, 16-18. Tarsus, 22-24. See Tables on pages 67, 69.

Tail only slightly rounded, 4-6: it is longer than in GARDEN WARBLER (51-57 in *borin*) and the bill is considerably longer (11½-14 in *borin*).

Wing-formula (pp. ascendant). Emarginated 3rd-5th. 1st p. from 4— to 2+ p.c.

Wing-point, 3rd = 4th, rarely = 5th; otherwise, 5th, ½-2; 6th, 2½-5; 7th, 6-9; 10th, 14-17.

2nd, 2½-7, falls between 5th-7th. Notch on inner web 15½-18 from tip, falls well below tips of ss. Notch on inner web of 3rd falls between 9th-10th.

In GARDEN WARBLER only 3rd is emarginate (with occasionally a slight emargination on 4th); 2nd falls between 3rd-4th, and notch on inner web falls between 6th-7th.

Moult (pp. descendant). The moult period appears to be remarkably protracted. Birds from Somaliland, 15 and 25.viii. and 20.ix., are very ragged, but one dated 13.viii. has pp. 1-2 half-grown. Another from Abyssinia, 11.viii., has pp. 1-2 new with pp. 3-4 growing, but the tail and tertials are old. A ♂ from S. Arabia, 20.ix., has pp. 1-3 new but no moult of tertials or tail. A bird from British E. Africa, 14.i., has pp. 1-4 new, p. 5 growing and p. 6 just out of sheath; moult of distal ss. has started, there are new tertials in one wing, and the tail is new except that the outer feathers are half-grown. A 'March' specimen from Kenya has a new tail but old tertials and pp. 7-9 old with the remainder and ss. 1-2 new.

Distribution. Near East across N. Iran, Afghanistan, Aral-Caspian region and Turkestan to Tian Shan range and Tadzhikistan, wintering in Kenya and Tanzania.

TABLE I
MEASUREMENTS—WING AND TAIL

SPECIES/RACE	WING				TAIL			
	n.	mean	s.d.	theoretical range	n.	mean	s.d.	theoretical range
<i>ceffi</i>	50	59.04	3.80	48—70	50	58.30	4.18	46—71
<i>albiventris</i>	22	67.32	3.24	58—77	24	66.29	4.02	54—78
<i>fluviatilis</i>	47	73.64	2.66	65—82	45	57.58	2.84	49—66
<i>fasciolata</i>	35	78.29	2.50	70—86	34	68.41	3.42	58—79
<i>luscinioides</i>	59	67.64	2.21	61—75	64	56.42	2.65	48—65
<i>naevia</i>	58	61.98	1.75	56—68	60	52.62	3.80	41—64
<i>straminea</i>	48	57.67	1.92	52—64	47	51.85	3.35	42—62
<i>lanceolata</i>	75	54.71	2.00	48—61	74	44.55	2.05	38—51
<i>rubescens</i>	30	64.13	3.50	54—74	28	51.96	2.30	45—59
<i>centralasiae</i>	20	61.65	3.11	52—71	18	49.72	2.16	43—56
<i>certhiola</i>	50	61.16	2.82	53—70	49	49.22	2.81	40—58
<i>ochotensis</i>	46	69.11	2.91	60—78	38	54.24	2.16	48—61
<i>melanopogon</i>	13	55.15	1.82	49—61	14	48.64	2.13	42—55
<i>mimica</i>	48	61.81	1.79	56—67	43	54.30	2.74	46—63
<i>schoenobaenus</i>	289	64.73	2.22	58—72	245	48.08	2.63	40—56
<i>paludicola</i>	63	61.46	2.07	55—68	63	46.95	2.26	40—54
<i>bistrigiceps</i>	60	53.65	1.82	48—58	45	47.64	2.60	40—56
<i>tangorum</i>	..	..	..	..	11	51.73	4.27	39—65
<i>scirpaceus</i>	117	64.80	2.03	58—71	117	52.32	2.29	45—59
<i>palustris</i>	51	66.94	2.10	60—73	49	52.24	2.33	45—59

TABLE I—continued
MEASUREMENTS—WING AND TAIL

SPECIES/RACE	WING				TAIL			
	n.	mean	s.d.	theoretical range	n.	mean	s.d.	theoretical range
<i>dumetorum</i>	117	61.22	1.56	56—66	116	51.94	2.09	45—58
<i>agricola</i>	66	57.18	2.00	51—63	67	54.36	3.10	45—64
<i>concinens</i>	35	55.17	1.65	50—60	34	56.09	2.37	49—63
<i>arundinaceus</i>	96	94.61	3.03	85—104	97	77.59	3.08	68—87
<i>zarudnyi</i>	39	95.59	2.74	87—104	36	78.22	3.53	67—89
<i>orientalis</i>	52	81.98	3.37	72—92	51	70.75	3.04	61—80
<i>griseldis</i>	10	80.60	2.55	73—88	9	63.67	3.12	54—72
<i>stentoreus</i>	14	78.14	2.57	70—86	15	74.60	3.16	65—84
<i>brunnescens</i>	32	86.88	2.54	79—95	33	79.33	3.70	68—91
<i>aedon</i>	77	78.66	2.41	71—86	66	84.26	3.23	74—94
<i>icterina</i>	85	76.87	2.48	69—85	85	52.82	2.23	46—60
<i>polyglotta</i>	88	64.69	1.68	59—70	88	50.65	1.85	45—57
<i>opaca</i>	55	68.18	2.16	61—75	52	57.37	2.55	49—65
<i>elaeica</i>	86	65.86	1.92	60—72	84	52.99	2.00	47—59
<i>caligata</i>	50	59.60	1.62	54—65	50	47.90	2.07	41—54
<i>rama</i>	54	60.61	1.65	55—66	49	53.16	2.47	45—71
<i>olivetorum</i>	31	85.71	2.18	79—93	31	67.55	2.73	59—76
<i>languida</i>	32	74.81	2.09	68—81	30	61.63	2.03	55—68

TABLE II
MEASUREMENTS—BILL AND TARSUS

SPECIES/RACE	n.	BILL			TARSUS			
		mean	s.d.	theoretical range	n.	mean	s.d.	theoretical range
<i>cetti</i>	66	14.07	0.76	12 —16	43	21.97	1.19	18 —26
<i>fluviatilis</i>	46	15.26	0.51	13½—17	34	21.91	1.06	18½—25
<i>fasciolata</i>	36	20.54	0.78	18 —22½	28	28.14	0.93	25½—31
<i>luscinioides</i>	57	15.52	0.65	13½—17½	42	21.33	0.95	18½—24½
<i>naevia</i>	58	13.86	0.65	11½—16	35	20.37	0.57	18½—22
<i>straminea</i>	47	13.53	0.55	11½—15½	25	19.64	0.71	17½—22
<i>lanceolata</i>	68	12.67	0.49	11 —14½	47	19.02	0.75	16½—21½
<i>rubescens</i>	29	15.78	0.62	14 —17½				
<i>centralasiae</i>	23	14.70	0.85	12 —17	45	22.24	1.00	19 —25½
<i>certhiola</i>	48	14.98	0.71	12½—17				
<i>ochotensis</i>	29	16.48	0.66	14½—18½	41	24.18	1.00	21 —27
<i>melanopogon</i>	25	14.48	0.59	12½—16½	12	20.33	1.07	17 —23½
<i>mimica</i>	40	15.25	0.49	13½—17	21	21.67	0.66	19½—23½
<i>schoenobaenus</i>	39	14.58	0.61	12½—16½	14	22.07	0.76	19½—24½
<i>paludicola</i>	47	13.30	0.72	11 —15½	32	21.00	0.84	18½—23½
<i>bistrigiceps</i>	45	14.04	0.82	11½—16½	32	21.31	1.00	18½—24½
<i>tangorum</i>	12	15.16	0.72	13 —17½	11	22.00	1.00	19 —25
<i>scirpaceus</i>	73	16.68	0.65	14½—18½	69	23.36	0.87	20½—26
<i>palustris</i>	47	15.98	0.85	13½—18½	29	23.31	0.93	20½—26

TABLE II—continued
MEASUREMENTS—BILL AND TARSUS

SPECIES/RACE	n.	BILL			TARSUS			
		mean	s.d.	theoretical range	n.	mean	s.d.	theoretical range
<i>dumetorum</i>	43	16.65	0.62	14½—18½	22	22.50	0.65	20½—24½
<i>agricola</i>	34	14.67	0.18	13½—16	17	21.68	0.96	18½—24½
<i>concinens</i>	31	14.69	0.18	14 —16	10	21.85	0.13	21 —22½
<i>arundinaceus</i> ..	95	22.35	1.03	19 —25½	69	29.88	1.18	26 —33½
<i>zarudnyi</i>	39	22.26	0.94	20 —25	32	29.81	1.00	27 —33
<i>orientalis</i>	47	21.77	1.20	18 —25½	33	28.85	1.20	25½—32½
<i>griseldis</i>	10	21.80	0.79	19½—24	9	25.22	0.83	22½—28
<i>brunnescens</i> ..	24	23.83	0.96	21 —27	17	29.88	1.11	26½—33½
<i>aedon</i>	73	18.45	0.53	16½—20	50	28.18	1.26	24½—32
<i>icterina</i>	61	16.20	0.73	14 —18½	19	21.32	0.75	19 —23½
<i>polyglotta</i> ..	35	15.54	0.83	13 —18	15	21.33	1.00	18½—24½
<i>opaca</i>	68	17.90	0.46	16½—19½	25	23.32	0.63	21½—25½
<i>elaeica</i>	47	15.93	0.81	13½—18½	13	21.85	0.83	19½—24½
<i>caligata</i>	44	13.15	0.51	11½—14½				
<i>rama</i>	51	14.69	0.70	12½—16½				
<i>olivetorum</i> ..	31	19.47	0.81	17 —22	21	21.05	0.86	18½—23½
<i>languida</i>	29	17.60	0.57	15½—19½	31	24.08	0.91	21½—27
					12	22.92	0.67	21 —25

USING THE KEYS

Two main keys are given below, one for the genera LOCUSTELLA and ACROCEPHALUS combined, the other for the genus HIPPOLAIS. Before using them it is therefore necessary to be sure to which genus one's bird belongs, and to facilitate this decision an introductory key to all the genera has been provided. It will also help the user if he bears in mind that *in general* the tail is much more rounded in LOCUSTELLA than in the streaked ACROCEPHALI (though *melanopogon* is an exception); and that the tail is almost square in most HIPPOLAIS. The monotypic genera LUSCINIOLA and PHRAGAMATICOLA are here included with ACROCEPHALUS (see p. 9).

Because the plumage differences between species, in many cases, are less marked than the variations within species due to age or season, geographical distribution and even individual variation, it has been necessary to base the keys primarily on structural characters, particularly wing-formula. In some cases the distinctions are very fine, and always the greatest possible care must be taken in measuring. Even so there are undoubtedly a few cases (e.g. young REED- and MARSH-WARBLERS, perhaps small GRASSHOPPER- and large LANCEOLATED WARBLERS) for which the keys will not work.

Because of the fine degrees of difference usually involved I have often cited several characters (in order of usefulness) where such exist; nevertheless, it is necessary to warn the user that *no bird should be determined from the keys alone*. When an opinion has been formed on the basis of the keys, the user must turn to the appropriate species in the text and check the result against the wider range of information available there.

KFY to the genera CETTIA, LOCUSTELLA, ACROCEPHALUS and HIPPOLAIS

A. Tail with ten rectrices	.. .. .	CETTIA
B. Tail with twelve rectrices		
B.1 Upper parts streaked or mottled		
No head-pattern, supercilium indistinct	.. .. .	LOCUSTELLA
Pronounced head-pattern, supercilium well-marked	.. .. .	ACROCEPHALUS
B.2 Upper parts uniformly some shade of brown or olive		
Outer and penultimate rectrices with white spots	., .. .	HIPPOLAIS
Outer and penultimate rectrices without white spots		
Bend of wing with yellow	.. .. .	HIPPOLAIS
Bend of wing without yellow	.. .. .	ACROCEPHALUS

KEY to the genera LOCUSTELLA and ACROCEPHALUS

- A. Uniformly dark-brown or olive-brown upper parts
 3rd-4th (sometimes also 5th) pp. emarginate
 Wing longer than 70
 Bill slender, 22-25, 1st p. minute; tail 84-96% of wing-length *stentoreus*
 Bill robust, 17-20; 1st p. very long; tail 102-114% of wing-length *racces*
 Wing shorter than 70
 Supercilium slight; notch inner web 3rd p. = 8th/10th *aedon*
 Supercilium prominent; notch inner web 3rd p. = ss. tips
 2nd p. = 5th/8th; 6th p. not emarginate *dumetorum*
 2nd p. = 8th/10th; 6th p. sometimes emarginate *agricola*
 3rd p. only emarginate *concinens*
 Wing longer than 75
 Throat feathers with pale brown streaks
 Notch inner web 2nd p. = 6th/8th; legs brownish *arundinaceus*, *zarudnyi*
 Notch inner web 2nd p. = 8th/ss. tips; legs bluish-grey *orientalis*
 Throat feathers without brown streaks
 Tail markedly rounded, 22-25 *fasciolata*
 Tail slightly rounded, 5-9 *griseldis*
 Wing shorter than 75
 2nd p. = 5th/6th *pleskei*
 2nd p. = 3rd/5th
 Notch inner web 2nd p. higher than 8th *scirpaceus*, *fuscus*
 Notch inner web 2nd p. lower than 8th *palustris*
 pp. not emarginate
 Under tail-coverts buff-brown tipped white; throat mottled dark brown *fluviatilis*
 Under tail-coverts whitish tipped buff; throat uniformly white *luscinioides*, *fusca*

B. Streaked or mottled blackish-brown on upper parts		
3rd-6th pp. emarginate, 1st p. at least 5 + p.c.		
Mantle rufous-brown	.. .. .	<i>melanopogon</i>
Mantle olive-brown	.. .. .	<i>nimica</i>
3rd-5th pp. emarginate; 1st p. less than 5 + p.c.; black 'eye-brow'		
Mantle yellowish-brown, streaked as head and nape	.. .. .	<i>sorgophilus</i>
Mantle dark olive-brown, not streaked as head and nape		
Tail 81-96% of wing-length	.. .. .	<i>bistrigicep</i>
Tail 94-106% of wing-length	.. .. .	<i>tangorum</i>
3rd (sometimes also 4th) pp. emarginate		
Supercilium prominent, creamy or buff		
Crown with buffish median band	.. .. .	<i>paludicola</i>
Crown without buffish band	.. .. .	<i>schoenobaenus</i>
Supercilium indistinct or absent		
Mantle with obscure dark mottling	.. .. .	<i>ochotensis</i>
Mantle with prominent dark streaking		
Tail with white spots; rump rufous	.. .. .	<i>certhiola races</i>
Tail without white spots; rump brown		
Mantle olive-brown to grey-brown; tail well rounded, 16-21; wing under 60	.. .. .	<i>straminea</i>
Mantle dark olive-brown		
2nd p. 6-9 less than wing-point; wing usually under 60	.. .. .	<i>lanceolata</i>
2nd p. 10-12 less than wing-point; wing usually over 60	.. .. .	<i>naevia</i>

KEY to the genus HIPPOLAIS

- A. Outer and penultimate tail-feathers with white tips; no yellow at bend of wing
- pp. 3rd-4th emarginate
- 2nd p. = 4th/5th; notch on inner web 2nd p. = 8th/10th; wing 82-90. *olivetorum*
- 2nd p. = 5th/7th; notch on inner web 2nd p. falls below ss. tips; wing 72-79. *languida*
- pp. 3rd-5th emarginate
- Bill strong, 15-19; wing 62-72.
- 2nd p. = 6th/7th, bill-width at nostrils 4-5½ *elaieca, pallida*
- 2nd p. = 7th/8th, bill-width at nostrils 5-6½ *opaca*
- Bill weak, 12-14; wing 57-64 *caligata, rama*
- B. Outer and penultimate tail-feathers without white tips; yellow at bend of wing
- Tail 65-73% of wing-length; 2nd p. = 3rd/5th; 1st p. less than 3 + p.c. *icterina*
- Tail 74-83% of wing-length; 2nd p. = 6th/8th; 1st p. more than 3 + p.c. *polyglotta*

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