Eurasian Reed Warbler:
the characters and variation
associated with the Asian form fuscus

David J. Pearson, Brian J. Small
and Peter R. Kennerley

ABSTRACT  This paper discusses the characters of and variation within Reed Warblers Acrocephalus scirpaceus of the Asian form fuscus. Compiled from extensive data from the wintering and breeding grounds, and on migration, it provides an in-depth treatment of this taxon. Morphological and biometric variation, together with taxonomic status, range, migration patterns, moult and voice, are discussed. The identification of fuscus, along with comparable plumages of the western form scirpaceus and those of Marsh Warbler A. palustris, is discussed in detail. There is considerable variation in both colour and size of Asian populations of fuscus, which is also apparent on the wintering grounds in East Africa, and we have identified ‘typical fuscus’, ‘warmer fuscus’ and ‘greyer fuscus’ as groups within the population which show constant plumage characters. Nevertheless, only freshly moulted adults in the wintering areas, adults which have recently returned to the Palearctic breeding grounds and first-winters in early autumn, up to November, are likely to be separable from the western form scirpaceus. In western Europe, it is essential that any putative fuscus be examined in the hand, as well as in the field; even then, using conventional means, it is unlikely that geographical provenance will be established with certainty.
The small, unstreaked warblers of the genus *Acrocephalus* have long presented identification challenges for birdwatchers and ringers alike. Recent studies and publications enable many of the species which occur in western Europe to be identified with confidence, although some individuals remain problematic. Criteria for the identification of Reed Warbler *A. scirpaceus* (hereafter referred to as Eurasian Reed Warbler), Marsh Warbler *A. palustris*, Blyth’s Reed Warbler *A. dummerorum* and Paddyfield Warbler *A. agricola*, both in the hand (e.g. Svenson 1992) and in the field (e.g. Harrap & Quinn 1989; Harris et al. 1995), are now well established, using a combination of plumage characters, biometrics, structure and vocalisations. With the exception of Eurasian Reed Warbler, variation within the adult plumage of these species is minor and inconsistent across their respective breeding ranges. Age classes within species do differ and are recognisable by a range of features, including plumage and bare-part characters, biometrics and plumage abrasion.

Eurasian Reed Warbler, however, shows considerable variation in size and colour, and two races are currently recognised: *A. s. scirpaceus* (hereafter referred to as *scirpaceus*) breeds in Europe and North Africa, while *A. s. fuscus* (hereafter referred to as *fuscus*) occupies the species’ range in Asia. All those breeding within the traditionally recognised range of *fuscus* are treated here as *fuscus*, irrespective of their plumage colour. The closely related African Reed Warbler *A. baeticatus* of sub-Saharan Africa forms a superspecies with Eurasian Reed Warbler, and the two are considered to be conspecific by Dowsett-Lemaire & Dowsett (1987). Along the Red Sea and in northern Somalia, a distinctive form *avicenniae*, of uncertain affinities, inhabits coastal mangroves. It has been variously treated either as a race of African Reed Warbler (e.g. Ash et al. 1989; Urban et al. 1997) or as a race of Eurasian Reed Warbler (Helbig & Seibold 1999), or been given specific status (e.g. Sangster et al. 1998).

Following its decision to abandon the Biological Species Concept (BSC) in favour of the Phylogenetic Species Concept (PSC), the Dutch committee for systematics (CSNA) no longer recognises subspecies. It has, therefore, chosen to treat *fuscus* as a full species, the ‘Caspian Reed Warbler’ *A. fuscus*, distinct from *A. scirpaceus* (Sangster et al. 1998). This decision, influenced by the genetic studies of Leisler et al. (1997), has inevitably generated considerable interest in *fuscus*, a form which had previously received little attention in the literature. Few authors provide a detailed treatment of *fuscus*, while those who have done so have tended to draw comparisons with Marsh Warbler rather than with *scirpaceus*. Without clear guidelines to identify *fuscus*, there has been much speculation concerning its appearance and the criteria by which it can be separated from *scirpaceus*.

In this paper, we discuss the morphological and biometric limits of *fuscus*, together with its present status, drawing attention to the marked variation in both size and colour that exists in Asia. We attempt to set out the characters by which *fuscus* can be separated from *scirpaceus*, and we discuss its likely occurrence in western Europe. We draw heavily on our own experience of *fuscus*, including observation of many hundreds of trapped birds, on breeding grounds in Kazakhstan, on passage in Turkey, Israel and coastal Sudan, and in winter quarters in Uganda and Kenya.

**Variation in the Eurasian Reed Warbler in Europe and Asia**

Variation in the Eurasian Reed Warbler occurs primarily in terms of size and coloration, but also, to a lesser extent, in wing formula. Broadly speaking, size increases and colour saturation decreases from west to east. Traditionally, two races have been recognised, the warmly coloured nominate *scirpaceus*, which breeds in Europe east to the Ukraine, and the paler, more olivaceous and typically larger *fuscus*, which breeds from central Turkey and the Caucasus east to northwest China, and south to the Middle East.

In Europe, *scirpaceus* shows little colour variation; the upperparts are usually warm brown, while the breast and flanks are strongly washed with warm buffy-brown. Some worn adult *scirpaceus* from Scandinavia can appear greyer than their southern counterparts and approach typical *fuscus* in coloration. Exceptionally, grey variants resembling Lesser Whitethroat *Sylvia curruca* in colour have occurred (Voous 1975; Marsh 1982; S. J. R. Rumsey *in litt.*), but these are grey above and white below, lacking all brown pigmentation in their plumage.

In Asia, variation is complex and extensive, involving colour and size. A similar array of
variation exists among wintering individuals in East Africa. Here, the majority, which for clarity are termed ‘typical fuscus’, have warmer tones on the upperparts confined to the rump and uppertail-coverts, with the mantle paler olive-brown to buffy-brown, and the crown and nape often with a greyish tinge. The underparts are whiter than those of scirpaceus, with the buff wash reduced and confined to the flanks. Alongside these birds, some Eurasian Reed Warblers exhibit plumage tones similar in colour to those of scirpaceus wintering in western Africa, yet they are identical to ‘typical fuscus’ in size, wing formula and moult strategy. These individuals, which we term ‘warmer fuscus’, have also been observed on spring passage in Kuwait (D. J. Kelly in litt.), and their origins probably lie in the Caucasus or Caspian Sea area and within the range attributed to fuscus, rather than in European Russia or Ukraine. A minority of those wintering in East Africa, termed ‘greyer fuscus’, are rather distinctive. Compared with ‘typical fuscus’, these are greyer-brown and more uniform above, with no warmth on the rump (Pearson 1972). ‘Greyer fuscus’ probably originate from the eastern limits of the breeding range, where they occur frequently during August among ‘typical fuscus’ in eastern Kazakhstan. Intermediates between the three colour types have been noted in Kenya, and colour variations in Asia are probably clinal.

There are size differences within scirpaceus in Europe. Wing length increases from west to east, with the smallest breeding birds in Iberia and the largest in Ukraine. In central Asia, fuscus are even longer-winged, and it appears that only these long-winged individuals migrate to East and southern Africa. Compared with scirpaceus, the wing formula of central Asian fuscus is marginally different. On average, fuscus has a slightly shorter second primary (P2) than scirpaceus, more frequently appearing as short as P5 (following Svensson 1992, the primaries are numbered ascendantely). Those breeding in the desert regions of southwest Asia, from Israel to Saudi Arabia, resemble ‘typical fuscus’ in colour, but are smaller, similar in size (wing length) to scirpaceus from western Europe. They also have a slightly more rounded wing, with both the second and third primaries shorter than those of ‘typical fuscus’ from central Asia (Morgan 1999), more similar to the much shorter and rounder wing of the form avicenniae of the Red Sea mangroves.

Thus, fuscus as traditionally defined spans a large range of wing lengths and is not usually separable by measurements from nominate scirpaceus. Populations indistinguishable in colour from scirpaceus probably intergrade with ‘typical fuscus’ somewhere within the latter’s recognised range. Long-winged ‘greyer fuscus’ are as different in colour from ‘typical fuscus’ as the latter are from European scirpaceus. The subspecific boundaries within fuscus may require clarification, and perhaps need to be redefined, but that is beyond the scope of this paper.

**Molecular studies**

With the development of the technique of sequencing mitochondrial DNA (mtDNA), it is now possible to investigate the evolutionary relationships among closely related taxa. This can be achieved with a high degree of reliability, and the technique has proved extremely useful for investigating the taxonomy of the small, unstreaked Acrocephalus warblers. These closely related warblers are very similar to one another, and their morphological appearance has provided few external clues to their relationships, which had, until recently, been largely a matter of speculation.

An improved understanding was provided by Leisler et al. (1997), who analysed the nucleotide sequence (over 1,000 base pairs) of the mitochondrial cytochrome b gene of 27 Acrocephalus species and subspecies, and three Hippolais species. Using results from three individuals of nominate scirpaceus and four of fuscus, they compared these two taxa. They found that cytochrome b of scirpaceus from Europe and that of fuscus from southeast Kazakhstan differed in 3.8% of nucleotide positions (a ‘genetic distance’ of 3.8%), indicating appreciable genetic differentiation. Perhaps most surprising, however, was their conclusion that scirpaceus was not a sister taxon of fuscus, and was, in fact, more closely related to avicenniae and the West African baeticatus. Leisler et al. (1997) did not, however, claim that scirpaceus and fuscus were distinct species. Instead, they concluded that further studies, especially playback experiments, were needed to clarify the position of avicenniae and fuscus within the scirpaceus complex.

Hellbig & Seibold (1999) also reconstructed the phylogeny of the Acrocephalus warblers, using nucleotide sequences of 1 kb of the cytochrome b gene, and examined 37 ingroup

Eurasian Reed Warbler of Asian form fuscus


18. Eurasian Reed Warbler Acrocephalus scirpaceus of race fuscus. ‘Typical fuscus’, slightly worn adult, Göksu delta, Turkey, 14th May 1998.
taxa of four genera belonging to 28 traditionally recognised species. They found rather less genetic distance between scirpaceus and fuscus than did Leisler et al., with nucleotide differences between scirpaceus from Europe and fuscus from two sources (Eilat, Israel, in March, and Ngulia, Kenya, in November) of 1.63% and 2.55% respectively. Although the breeding grounds of individuals in their samples were unknown, they found almost as much genetic distance (1.54%) between the two fuscus samples themselves. Remarkably, this was almost as much as that found between European scirpaceus and West African baeticatus (1.92%-2.40%).

Having acknowledged that their sample sizes were small (seven fuscus and five scirpaceus), Helbig & Seibold concluded that the total range of genetic divergence within the Eurasian Reed Warbler complex was small (up to 2.6%) compared with that between Eurasian Reed Warbler and other closely related species. For example, they found a genetic divergence of 7.8-8.3% between scirpaceus and Marsh Warbler, and a divergence of 9.9-10.0% between scirpaceus and Paddyfield Warbler (figures rounded up to one decimal point). By comparison, the divergence within other groups of warbler taxa included up to 9.6% within the Olivaceous Warbler Hippolais pallida complex; 6.2% within the Great Reed Warbler A. arundinaceus/Clamorous Reed Warbler A. stentoreus grouping; 7.9% between the two taxa in the Western Bonelli’s Warbler Phylloscopus bonelli/Eastern Bonelli’s Warbler P. orientalis pairing; and 5.4% within the Common Chiffchaff P. collybita complex.

Molecular studies do not define species limits. Rather, they measure the genetic distance between related taxa, or, more strictly, between examples taken from particular parts of the range. Only by comparing genetic distance with those of traditionally defined and recognised species is it possible to speculate on the status of a particular taxon. In the case of the Eurasian Reed Warbler, the genetic distance between fuscus and scirpaceus cannot alone support the recognition of two species. The existence of distinct, genetically divergent forms has yet to be demonstrated.

Breeding range
The Eurasian Reed Warbler has an extensive breeding range across the warm and temperate latitudes of the Palearctic. Nominate scirpaceus breeds at suitable wetlands throughout most of western Europe, from the Iberian peninsula and Britain & Ireland in the west, north to central Sweden and south into northern Africa, from Morocco to Tunisia (Cramp 1992). The eastern limits lie in the western Turkish provinces of Thrace and Anatolia (Roselaar 1995), and north and east around the northern shore of the Black Sea to Ukraine and western Russia.

The breeding range of fuscus is patchy and fragmented, and largely determined by the distribution and availability of stands of reed Phragmites within the steppe grasslands of central Asia. Its western limits appear to lie in central Turkey (Roselaar 1995), where individuals exhibiting characters associated with fuscus were found in the Göksu delta in mid May, and presumed to be breeding (PRK). Eastwards from here, fuscus breeds in eastern Turkey, the southern Caucasus and the western Caspian Sea region, north to the lower Volga River and south into northern Iran; its breeding range also encompasses much of southern Kazakhstan and Uzbekistan, and extends south and east to the Tien Shan Mountains. The eastern limits lie south of that mountain range, in the Xinjiang Uygur Autonomous Region in western China, where Grimmett & Taylor (1992) found individuals of this taxon in June/July 1988 at Kashi and Bosten Hu. Other observers have subsequently relocated them here, and P. J. Leader (in litt.) found them in 2001 at new locations close to the Mongolian border, presumably breeding. A smaller form (see page 44), currently regarded as fuscus, breeds in the Middle East from southern Israel south and east to central Saudi Arabia (Riyadh), Kuwait, UAE and (presumably this form) southwest Iran.

Migration
Eurasian Reed Warblers winter in Africa, mainly in northern tropical and equatorial regions, south to northern and eastern Zaire (DR Congo) and Tanzania; small numbers reach the southern tropics, and winter regularly in Zambia, Malawi, northeast Namibia and Botswana. Nominate scirpaceus from northern and western Europe migrate through Iberia to western Africa, while those from central and eastern Europe move through the Balkans and Egypt, presumably to Sudan and north-central Africa.

Long-winged fuscus undertake a southwestern migration, and winter from Ethiopia and East Africa to eastern Zaire and south to
Botswana. In East Africa, ‘typical fuscus’ are accompanied by equally long-winged ‘warmer fuscus’ and ‘greyer fuscus’; the precise origins of these warmer and greyer birds are unknown, but probably lie within the central Asian part of the range. Shorter-winged birds resembling ‘typical fuscus’ have been noted in early autumn on the Sudan coast (G. Nikolaus and DJP), and are presumably the smaller individuals from breeding grounds in southwest Asia migrating to winter quarters in Sudan and Ethiopia.

Central Asian fuscus leave their breeding grounds in Kazakhstan and Uzbekistan from late July onwards, and, while the majority migrate during August, passage continues until early October. Migration through Arabia spans late July to mid November, with southbound passage across the Sudan coast mainly between late August and mid October. The first birds arrive in Uganda and western Kenya in late September, but the main influx there begins in late October, with passage continuing to late December. Many birds reach East Africa in fresh plumage between the end of November and January, having moulted in northeast Africa (see below). The first individuals reach Zambia in mid October, and southernmost wintering sites in Botswana are occupied in November and December.

Departure from southern Africa commences in late March or early April, and from East African wintering sites between early and mid April. Northward passage occurs through Kenya from the beginning of April into early May, and through Ethiopia from mid April to late May. Local populations in Arabia have returned to their nesting sites in April, ahead of the main passage of long-winged fuscus bound for central Asia, which appear between late April and mid May. The main arrival in eastern Kazakhstan does not take place until mid to late May.

There are four recoveries in Asia of fuscus ringed in eastern Africa. One ringed in Ethiopia in April was recovered in Kuwait in September; one ringed in eastern Sudan in October was recovered in western Iran in May; and, of two ringed in Kenya in April, one was recovered in central Saudi Arabia in September and the other in Russia (Astrakhan) in May. In addition, an individual of unknown race and origin was ringed in Cyprus, in August, and recovered at Khartoum, Sudan, in September.

The first stage of autumn migration of fuscus from the breeding grounds to northeast Africa is slightly later and more protracted than that of Marsh Warbler, which leaves its breeding grounds in late July and August and crosses the Red Sea into Sudan mainly between mid August and late September. In spring, fuscus passage through Arabia and the Middle East peaks in late April to early May, about ten days on average before that of Marsh Warbler (G. Nikolaus and J. S. Ash in litt.; D. J. Kelly in litt.).

Moult

A few Iberian scirpaceus moult on their breeding grounds, but otherwise all adult and first-year Eurasian Reed Warblers undergo a complete moult in Africa. In the case of adults, this is usually supplemented by a partial body moult in the breeding area in late summer. Almost all scirpaceus moult between September and December, so that those arriving back on the breeding grounds in May do so with their plumage about six months old. Although the primaries are then somewhat faded, most show relatively little abrasion on the tips of the remiges until July.

In fuscus, the timing of moult varies according to the wintering area in Africa. Most of those wintering in East Africa moult between September and December, during a wet-season stopover in Sudan or Ethiopia, before continuing south to winter quarters; but many (up to 40% of the population in Uganda) moult on their final wintering grounds between December and March. Those wintering in southern Africa usually moult during the late winter period. In Botswana, for example, at the southern limit of the wintering range, all appear to do so (Tyler & Tyler 1997). Breeding fuscus in central Asia, as scirpaceus in Europe, still have unworn primary tips in May or early June, but those with a delayed winter moult have noticeably fresher, darker webs at this time. Small fuscus breeding in the Middle East, which are short-distance migrants, must moult shortly after reaching their winter quarters; they arrive on the breeding grounds in April with remiges noticeably worn, in contrast to the fresher appearance of migrant fuscus passing through at the same time (G. Nikolaus in litt.).

Plumage characters of fuscus

Recent accounts of fuscus have tended to suggest that its plumage features are always distinctive, but this oversimplifies what is a more complex situation. Roselaar (in Cramp 1992)
Eurasian Reed Warbler of Asian form \textit{fuscus}

19. Eurasian Reed Warbler \textit{Acrocephalus scirpaceus} of race \textit{fuscus}. ‘Typical \textit{fuscus},’ slightly worn adult, Göksu delta, Turkey, 14th May 1998.

20. Eurasian Reed Warbler \textit{Acrocephalus scirpaceus} of race \textit{fuscus}. ‘Typical \textit{fuscus},’ moderately worn adult with abraded primary tips, Göksu delta, Turkey, 22nd May 1998.


Eurasian Reed Warbler of Asian form fuscus
described *fuscus* as duller, cooler-toned and paler than nominate *scirpaceus*. He emphasised a grey tinge to the head and nape; a grey- to olive-toned back, with a paler sandy-grey or warm buff rump; a whiter supercilium, eye-ring and underparts than nominate *scirpaceus*; and whiter tips and fringes to the inner web of the outer rectrices. He considered that variation in colour was not clinal, and that *fuscus* was separated from *scirpaceus* in central Asia by a gap in distribution.

Svensson (1992) provided a better description, stressing the similarity of the colour of the upperparts of *fuscus* to those of a worn Marsh Warbler, being a slightly greyer olive-brown than in nominate *scirpaceus*, and less rufous-tinged above. The sides of the breast and flanks are described as slightly whiter, less creamy-buff, than in the nominate race. He also emphasised that, in worn plumage, *fuscus* becomes paler than *scirpaceus*.

Kok & van Duivendijk (1998) described *fuscus* as structurally very similar to *scirpaceus*, but with plumage distinctly paler and greyer ‘and thus more like Marsh Warbler’. They emphasised the pale, brown-grey upperparts which lack the prominent rufous or brown tones of European *scirpaceus*, and stated that the rump is rather pale, sandy-grey or brown-grey, but can be brown, even warm brown, in first-years. They considered *fuscus* to be, on average, slightly paler and greyer than Marsh Warbler, lacking the green tinge to the upperparts typical of that species, and with marginally whiter underparts. The outer tail feathers of *fuscus* are correctly described as showing distinct pale edges and tips, these being more often present than they are on Marsh and, especially, *scirpaceus*. Interestingly, Kok & van Duivendijk considered that this tail pattern, combined with the general coloration, may give a striking resemblance to Olivaceous Warbler of the eastern form *elaeica*.

These accounts may create the perception that separation of *fuscus* from *scirpaceus*, and from Marsh Warbler, is rather straightforward. They suggest that greyness is a typical feature of *fuscus*, in contrast to the ‘rufous’ tones of *scirpaceus*; this is, however, rather simplistic and misleading. Only a minority of Asian individuals can be assigned to our category of ‘greyer *fuscus*’. ‘Typical *fuscus*’ in East Africa, although slightly paler and more olive than *scirpaceus*, are tinged grey only on the crown and nape. Moreover, ‘warmer *fuscus*’ are practically identical in colour to *scirpaceus*. There is a widespread tendency to exaggerate the colour tones of *scirpaceus*. While these are undoubtedly warmly coloured, we defy anyone to see rufous in their upperparts. A better description would be rich brown or rich olive-brown above with a warm or cinnamon tone, strongest on the scapulars, wing-covert fringes and rump.

The plumage of the four types that we consider to originate from within the recognised breeding range of *fuscus* is described in detail immediately below.

‘Typical *fuscus*’

In fresh plumage, in late winter and spring, the upperparts are a fairly rich, slightly creamy brown or olive-brown, with a greyish cast confined to the head and nape. The rump and uppertail-coverts are paler, with a warm sandy, ochreous or tawny tinge. The mantle and scapulars are slightly paler and less warm than those of *scirpaceus*. The edges of the primaries and secondaries are a warm, buffy brown on newly moulted individuals, contrasting slightly with the duller colour of the upperparts. The underparts are off-white, with a pale buff wash across the breast and along the flanks. This wash is less intense, less warm-tinged and less extensive than in nominate *scirpaceus* and gives the underparts of ‘typical *fuscus*’ a slightly but consistently paler appearance.

After the complete winter moult, *fuscus* usually shows broad, conspicuous, pale buff to buffish-white tips to at least the three outermost pairs of rectrices, which contrast with the browner feather bases. On many individuals, these pale tips extend across all rectrices, including the central pair. On the outer pair, the pale tip broadens and extends along the inner web as a pale buff to whitish fringe; with careful observation, this pale fringe can be viewed in the field, and it is readily apparent on a trapped bird. These pale tips are quite conspicuous on adults returning to the breeding grounds in May and June, but become less so in late...
summer, owing to abrasion and bleaching. Although some newly moulted adult *scirpaceus* in West Africa show paler buffy-brown tips to the rectrices, and some also have a suggestion of a pale inner-web fringe on the outer rectrices, these tend to be narrower and less well defined than on *fuscus* (fig. 2).

In late winter, the recently moulted primaries of *fuscus* have a conspicuous whitish fringe around the tip, broadest at the tip of the outer web (fig. 3). This feature highlights the position of the primary tips in the closed wing, as does a similar pattern on Marsh Warbler, and is especially marked in spring on those individuals which (like Marsh Warbler) moult late and whose feathers still have a blackish ground colour. Most adults returning to central Asia in May and June still show conspicuous pale primary tips.

In *scirpaceus*, pale primary tips are usually
present on freshly moulted individuals in West Africa, but are not so broad or conspicuously pale as those of *fuscus* and are invariably less prominent. Wear of the primary tips and fading of the darker web reduce the contrast even further, and the tips are often inconspicuous or absent by April when the earliest *scirpaceus* return to European breeding grounds, although they may persist on some until late May.

In worn plumage, in early autumn, the separation of adult *fuscus* from *scirpaceus* is more difficult, but the upperparts of the former tend to be paler, more buffy-brown, and the underparts very white. First-winter *fuscus* differs from *scirpaceus* in much the same way as does the fresh adult; it is somewhat duller, less bright olive-brown, on the upperparts and shows restricted warmness of colour on the rump. As with the adult, the crown and nape are faintly washed with grey, which contrasts with the browner mantle. Fading of the wing and tail feathers occurs rapidly in first-winter *fuscus*, and the pale tips to the rectrices are rarely as prominent as on adults. First-winter *scirpaceus* in Europe usually lack pale rectrix tips completely, but retain narrow buffy tips to the primaries until October.

‘Warmer fuscus’

Some 25-30% of the newly moulted individuals in Uganda and Kenya are more warmly coloured than ‘typical *fuscus*’. They are a richer, slightly darker and warmer brown on the mantle and scapulars, and a deeper cinnamon or tawny brown on the rump and uppertail-coverts; they also lack the grey tinge to the crown and nape, which closely match the mantle in colour. Below, they tend to have a stronger buff-brown wash on the flanks. The upperparts of specimens match those of freshly moulted *scirpaceus* collected in Liberia and Nigeria. Yet it is unlikely that these warmer birds originate from the range of *scirpaceus* (Ukraine and westwards). Their long wings with tendency towards a slightly shorter second primary (see ‘Wing length and structure’, page 55) match those of ‘typical *fuscus*’. Like the latter, they frequently delay moult until late winter, and when fresh usually show prominent pale primary tips and pale markings at the tips of the rectrices. Moreover, a few birds in East Africa are difficult to categorise, and judged intermediate between this type and ‘typical *fuscus*’.

‘Greyer fuscus’

A small minority, approximately 5% of those seen in East Africa in spring, are greyer than ‘typical *fuscus*’. They are almost uniform greyish-brown above and lack any warmth on the rump and uppertail-coverts. Below, they are whiter than ‘typical *fuscus*’, with the grey-buff

wash on the flanks even more restricted. These individuals are very close in coloration to Oliva-ceous Warbler of the eastern form *elaeica*. Similar birds, both adults and first-winters, occur frequently in autumn among ‘typical *fuscus*’ in southeast Kazakhstan, where they account for perhaps 15-20% of the population (DJP).

**Small *fuscus***
The small individuals of the Middle East are similar in plumage colour to ‘typical *fuscus*’ from central Asia. These moult soon after reaching their winter quarters, for they already have slightly worn remiges on arrival at their breeding grounds in March and April. Owing to the effects of wear and bleaching, ‘small *fuscus*’ appear slightly duller than the longer-winged *fuscus* which pass through Arabia on migration in April.

**Wing length and structure**
Eurasian Reed Warbler shows a cline of increasing wing length from southwest Europe to eastern Kazakhstan. This is apparent across the European range of *scirpaceus*, with the smallest birds breeding in the Iberian peninsula and the largest in Scandinavia and Ukraine (table 1). The mean wing length of a sample of adults from England was 65.7 mm (range 62-69 mm).

### Table 1.
Sample wing lengths of Eurasian Reed Warbler *Acrocephalus scirpaceus* of nominate race *scirpaceus*. All measurements in mm, maximum chord. Except where otherwise indicated, sources refer to unpublished data.

<table>
<thead>
<tr>
<th>Locality</th>
<th>Age</th>
<th>Range</th>
<th>Mean</th>
<th>No.</th>
<th>Season</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balearic Islands</td>
<td>adult</td>
<td>63-68</td>
<td>64.8</td>
<td>19</td>
<td></td>
<td>Cramp 1992</td>
</tr>
<tr>
<td></td>
<td>adult</td>
<td>61-67</td>
<td>62.7</td>
<td>21</td>
<td></td>
<td>Cramp 1992</td>
</tr>
<tr>
<td>Suffolk, England</td>
<td>adult</td>
<td>62-69</td>
<td>65.7</td>
<td>112</td>
<td>late July-mid August</td>
<td>DJP</td>
</tr>
<tr>
<td></td>
<td>juv/1st-w</td>
<td>61-71</td>
<td>65.1</td>
<td>242</td>
<td>late July-mid August</td>
<td>DJP</td>
</tr>
<tr>
<td>Germany</td>
<td>adult</td>
<td>63-71</td>
<td>66.6</td>
<td>104</td>
<td></td>
<td>Leisler &amp; Winkler 1979</td>
</tr>
<tr>
<td></td>
<td>juv/1st-w</td>
<td>62-69</td>
<td>65.4</td>
<td>179</td>
<td></td>
<td>Leisler &amp; Winkler 1979</td>
</tr>
<tr>
<td>Kvismaren, Sweden</td>
<td>adult</td>
<td>62-72</td>
<td>67.6</td>
<td>1,011</td>
<td>mid June-mid July</td>
<td>B. Neilson, S. Bensch</td>
</tr>
<tr>
<td></td>
<td>juv/1st-w</td>
<td>60-72</td>
<td>66.6</td>
<td>3,779</td>
<td>mid June-mid July</td>
<td>B. Neilson, S. Bensch</td>
</tr>
<tr>
<td>Crimea</td>
<td>adult</td>
<td>66-70</td>
<td>67.7</td>
<td>3</td>
<td>August</td>
<td>DJP, G. Nikolaus</td>
</tr>
<tr>
<td></td>
<td>juv/1st-w</td>
<td>64-70</td>
<td>66.8</td>
<td>100</td>
<td>August</td>
<td>DJP, G. Nikolaus</td>
</tr>
</tbody>
</table>

### Table 2.
Sample wing lengths of Eurasian Reed Warbler *Acrocephalus scirpaceus* of eastern race *fuscus*. All measurements in mm, maximum chord. Except where otherwise indicated, sources refer to unpublished data.

<table>
<thead>
<tr>
<th>Locality</th>
<th>Age</th>
<th>Range</th>
<th>Mean</th>
<th>No.</th>
<th>Season</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>E Arabia (Karan)</td>
<td>adult</td>
<td>62-72</td>
<td>68.8</td>
<td>11</td>
<td>Spring</td>
<td>per G. Nikolaus</td>
</tr>
<tr>
<td>SW Arabia (Farasan Is)</td>
<td>adult</td>
<td>64-74</td>
<td>68.2</td>
<td>152</td>
<td>Spring</td>
<td>G. Nikolaus, J. S. Ash</td>
</tr>
<tr>
<td>E Kazakhstan (L. Alakol)</td>
<td>adult</td>
<td>67-72</td>
<td>69.1</td>
<td>19</td>
<td>August</td>
<td>DJP, G. Nikolaus</td>
</tr>
<tr>
<td></td>
<td>1st-w</td>
<td>64-74</td>
<td>68.6</td>
<td>300</td>
<td>August</td>
<td>DJP, G. Nikolaus</td>
</tr>
<tr>
<td>Sudan</td>
<td>adult</td>
<td>61-72</td>
<td>67.4</td>
<td>123</td>
<td>August-September</td>
<td>DJP, G. Nikolaus</td>
</tr>
<tr>
<td></td>
<td>1st-w</td>
<td>61-71</td>
<td>66.6</td>
<td>97</td>
<td>August-September</td>
<td>DJP, G. Nikolaus</td>
</tr>
<tr>
<td>S Turkey (Göksu delta)</td>
<td>adult</td>
<td>64-73</td>
<td>68.5</td>
<td>12</td>
<td>May</td>
<td>PRK</td>
</tr>
<tr>
<td>Uganda &amp; C Kenya:</td>
<td>all forms</td>
<td>adult</td>
<td>64-76</td>
<td>68.7</td>
<td>866</td>
<td>Dec-May (moulted)</td>
</tr>
<tr>
<td></td>
<td>1st-w</td>
<td>65-70</td>
<td>67.3</td>
<td>39</td>
<td>Oct-Dec (unmoulted)</td>
<td>DJP</td>
</tr>
<tr>
<td></td>
<td>'typical <em>fuscus</em>'</td>
<td>adult</td>
<td>65-76</td>
<td>68.9</td>
<td>198</td>
<td>December</td>
</tr>
<tr>
<td></td>
<td>'warmer <em>fuscus</em>'</td>
<td>adult</td>
<td>64-75</td>
<td>68.8</td>
<td>66</td>
<td>December</td>
</tr>
<tr>
<td></td>
<td>'greyer <em>fuscus</em>'</td>
<td>adult</td>
<td>65-72</td>
<td>69.3</td>
<td>17</td>
<td>December</td>
</tr>
<tr>
<td>Ngulia, Kenya</td>
<td>adult</td>
<td>68-74</td>
<td>71.1</td>
<td>23</td>
<td>Dec-Jan (moulted)</td>
<td>DJP</td>
</tr>
<tr>
<td></td>
<td>1st-w</td>
<td>66-73</td>
<td>69.6</td>
<td>46</td>
<td>Nov-Jan (unmoulted)</td>
<td>DJP</td>
</tr>
</tbody>
</table>
mm), significantly longer than that of breeding adults in Spain and slightly shorter than for German adults. Cramp (1992) gave a maximum wing length of 72 mm from a sample of 771 birds from Sweden. This is, however, exceptionally long for *scirpaceus*, and the mean wing length of this large sample is only 63.2 mm. A larger sample from Kvismaren, Sweden, close to the northern limit of the European breeding range, has a mean wing length of 67.6 mm for adults (range 62-72 mm) and 66.6 mm for juveniles/first-winters (range 60-72 mm). As would be expected, these northern breeders are slightly longer-winged compared with those breeding in southern and western Europe. Even in these northerly latitudes, very few *scirpaceus* will show a wing length in excess of 70 mm, and it appears that none will exceed 72 mm.

The wing lengths of *scirpaceus* and central Asian *fuscus* overlap extensively, but *fuscus* is, on average, slightly larger (table 2). Among newly moulted individuals in East Africa, the mean wing length of ‘typical *fuscus*’ is 68.9 mm (range 65-76 mm); ‘warmer *fuscus*’ (mean 68.8 mm, range 64-75 mm) and ‘greyer *fuscus*’ (mean 69.3 mm, range 65-72 mm) are equally long-winged. East African measurements match those taken from migrants passing through the Arabian Peninsula and from autumn individuals in Kazakhstan. Interestingly, birds trapped at Ngulia, on the eastern fringe of the southward passage through Kenya, are longer-winged than those in central Kenya, with moulted adults having an average wing length of 71.1 mm (range 68-74 mm).

Comparison of the wing formula of *scirpaceus* from Suffolk, England, with that of *fuscus* wintering in East Africa (table 3) shows that they differ only marginally. The second primary tends to be slightly shorter on *fuscus*, in the majority of cases falling between P4 and P5, although several have P2 equal to or shorter than P5. In *scirpaceus*, P2 more frequently falls between P3 and P4, but most commonly between P4 and P5; only occasionally is it as short as P5. This difference is unlikely to provide much assistance in determining the provenance of a trapped individual. Furthermore, the tendency for a shorter second primary was just as evident on ‘warmer *fuscus*’ as on ‘typical *fuscus*’ trapped in Uganda.

Both *scirpaceus* and *fuscus* have P3 emarginated. One characteristic of *fuscus* is said to be a slight emargination on P4 (Svensson 1992). We have carefully examined live *fuscus*, as well as prepared specimens of ‘typical’, ‘warmer’ and ‘greyer’ types, and have been unable to detect this feature easily. A few individuals do show a slight tapering towards the tip of the outer web of P4, but this is matched by some *scirpaceus*, and we doubt that a clear emargination occurs regularly among northern breeding *fuscus*.

Morgan (1998) recorded wing lengths within the range of 60-65 mm for breeding Eurasian Reed Warblers in Eilat, Israel, and a wing formula which was distinctly different

<table>
<thead>
<tr>
<th>Locality</th>
<th>Age</th>
<th>Sample</th>
<th>&gt;P3</th>
<th>P3-P4</th>
<th>P4-P5</th>
<th>P5-P6</th>
<th>Season</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eurasian Reed Warbler</strong> A. s. <em>scirpaceus</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suffolk, England</td>
<td>adult</td>
<td>43</td>
<td>0</td>
<td>0</td>
<td>30</td>
<td>35</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>1st-winter</td>
<td>117</td>
<td>0</td>
<td>0</td>
<td>19</td>
<td>45</td>
<td>31</td>
</tr>
<tr>
<td><strong>Eurasian Reed Warbler</strong> A. s. <em>fuscus</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sudan, Uganda &amp; Kenya</td>
<td>adult</td>
<td>95</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>26</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td>1st-winter</td>
<td>35</td>
<td>0</td>
<td>0</td>
<td>11</td>
<td>17</td>
<td>60</td>
</tr>
<tr>
<td>Kenya/Uganda</td>
<td>adult</td>
<td>265</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>12</td>
<td>73</td>
</tr>
<tr>
<td><strong>Marsh Warbler</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kenya</td>
<td>adult</td>
<td>117</td>
<td>3</td>
<td>27</td>
<td>49</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>1st-winter</td>
<td>268</td>
<td>1</td>
<td>7</td>
<td>56</td>
<td>20</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>adult</td>
<td>49</td>
<td>0</td>
<td>2</td>
<td>45</td>
<td>43</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 3. Position of tip of second primary (P2, primaries numbered ascendantly) in relation to tips of other primaries on closed wing of Eurasian Reed Warbler *Acrocephalus scirpaceus* and Marsh Warbler *A. palustris*. Figures refer to percentages of sample total. All data from DJP using individuals captured in England and East Africa.

from that of longer-winged *fuscus* trapped on passage at the same site. The smaller birds were characterised by a shorter P3, which was often equal to, and never more than 0.5 mm longer than, P4. Furthermore, P2 was rather shorter than on migrant *fuscus*, in the majority of cases equal to P5 or falling between P5 and P6. Additionally, an emargination was frequently present on P4, characteristic of African *avicenniae* and *baeticatus*, but very unusual in *scirpaceus* and long-winged passage *fuscus*. Elsewhere in the Middle East, similar wing length and wing structure have been noted on birds breeding near Riyadh, Saudi Arabia (G. Nikolaus *in litt.*).

**Separation from Marsh Warbler**

In spring, Marsh Warbler is typically uniform above, with mid-greyish-brown upperparts tinged greenish, most noticeably on the forehead and crown. Consequently, many *fuscus* can be distinguished from Marsh Warbler by a warm-tinged rump, a more buffy olive-brown mantle, and a grey cast to the head. The upperparts of some *fuscus* are identical to those of a typical Marsh Warbler, and the uniform upperparts of ‘greyer *fuscus*’ practically match those of greyer Marsh Warblers. In early autumn, the worn upperparts of both adult *fuscus* and adult Marsh Warbler tend to be browner and more uniform, and the two taxa are, therefore, even harder to distinguish than in spring. Marsh Warblers usually acquire fresh, greenish-tinged mantle and scapular feathers in Ethiopia during October. First-winter Marsh Warblers closely resemble adults, and show an indistinct greenish tinge to the entire upperparts that young *fuscus* invariably lack. They do, however, tend to be slightly warmer than adults, and some are distinctly warm-tinged on the rump and thus more like first-winter *fuscus*. Such individuals always lack greyyness on the head and usually show faint gingery fringes to the wing-coverts and the edges of the rectrices which, in some lights, can appear distinctly greenish. It is the underparts that provide the most useful and constant plumage distinction between *fuscus* and Marsh Warbler at all ages. On the former they are whitish with a pale buff wash and never a trace of yellow, while on the latter they are washed ochreous- or yellowish-buff. Although sometimes faint on worn birds, this yellow tinge is readily seen on adult and first-winter Marsh Warblers in the hand, and is often discernible in the field.

Leg colour is frequently quoted as a character for separating Eurasian Reed and Marsh Warblers, but there is some overlap, particularly in the case of first-winter birds, so that it should be used with caution. Adult *fuscus* (like *scirpaceus*) have greyish-brown to flesh-brown tarsi, while on adult Marsh Warbler these are, on average, paler, ranging from mid brown to a characteristic pale pinkish-straw. First-year *fuscus* usually have bluish- or greenish-grey to dark brown tarsi and toes. On first-winter Marsh Warblers, they range from dark grey-brown to about mid brown and sometimes pinkish-brown, but are quite dark on approximately half of the young Marsh Warblers examined in Kenya in late autumn (DJP, pers. obs.).

Methods for separating Marsh Warbler and Eurasian Reed Warbler, including *fuscus*, in the hand are well established. They involve measurements and wing-formula details as described by Williamson (1968) and Svensson (1992) (and for *fuscus* see also Pearson 1989). Although Marsh Warblers tend to have a longer second primary (table 3) and have longer wings (table 4), these features are variable within a large sample and will not usually identify individual birds. Moreover, central Asian *fuscus* have a mean wing length about the same as that of Marsh Warbler. The position of the notch on the inner web of P2 is probably the best single character for separating *fuscus* from Marsh Warbler. On adult *fuscus*, this lies 11-14 mm

---

**Table 4.** Sample wing lengths of Marsh Warbler *Acrocephalus palustris*. All measurements in mm, maximum chord.

<table>
<thead>
<tr>
<th>Locality</th>
<th>Age</th>
<th>Range</th>
<th>Mean</th>
<th>No.</th>
<th>Season</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sudan</td>
<td>adult</td>
<td>66-74</td>
<td>69.0</td>
<td>89</td>
<td>August-September</td>
<td>DJP, G. Nikolaus, unpub.</td>
</tr>
<tr>
<td></td>
<td>1st-winter</td>
<td>65-73</td>
<td>68.5</td>
<td>144</td>
<td>August-September</td>
<td>DJP, G. Nikolaus, unpub.</td>
</tr>
<tr>
<td></td>
<td>adult</td>
<td>64-73</td>
<td>68.4</td>
<td>384</td>
<td>Nov-Dec (unmoulted)</td>
<td>Pearson 1989</td>
</tr>
<tr>
<td>Kenya</td>
<td>1st-winter</td>
<td>64-73</td>
<td>67.9</td>
<td>488</td>
<td>Nov-Dec (unmoulted)</td>
<td>Pearson 1989</td>
</tr>
<tr>
<td></td>
<td>adult</td>
<td>65-73</td>
<td>69.6</td>
<td>77</td>
<td>April (moulted)</td>
<td>Pearson 1989</td>
</tr>
</tbody>
</table>

---

58 British Birds 95 • February 2002 • 41-61
from the tip (falling between the tip of P9 and the secondaries on the closed wing), compared with 9-12 mm from the tip on Marsh (falling between P6 and P9). On first-winter fuscus, it lies 10-13 mm from the tip (between P8 and the secondaries, but occasionally as high as P7), and on first-winter Marsh Warbler 8-11 mm from the tip (between P6 and P8). This feature should clinch the identification of almost all adults and most first-winter birds.


Voice

The songs of scirpaceus and fuscus closely resemble each other, and also that of African Reed Warbler, leading Dowsett-Lemaire and Dowsett (1987) to conclude that Eurasian Reed and African Reed Warblers are conspecific. It is, indeed, surprising that across the vast breeding range of the reed warbler complex, throughout Europe, central Asia and sub-Saharan Africa, the songs remain so similar. Apparent minor vocal differences between scirpaceus and fuscus may be attributable to regional variation.

The song of fuscus has a tendency to be slightly more deliberate, with a marginally slower delivery. It contains fewer of the scratchy phrases found in the song of scirpaceus and contains more phrase repetition. Some singing fuscus in the Göksu delta, Turkey, incorporate a highly distinctive, unmusical, two-note phrase that has been likened in speed and pitch to a handsaw cutting through wood. It is repeated approximately twice per second, for up to six seconds, the series descending very slightly in pitch and speed of delivery, and is immediately followed by the typical song. As this phrase is not apparent in the song of scirpaceus in Europe or that of fuscus in Kazakhstan, it may be due to individual variation or be part of a regional dialect.

It has long been appreciated that Eurasian Reed Warbler can, and does, include mimicry within its song. Atkin et al. (1965) discussed the ability of Eurasian Reed Warblers, especially unmated males, to mimic the song of Marsh Warbler, plus an extensive repertoire of calls, including those of Common Redshank Tringa totanus and Common Tern Sterna hirundo. Unlike Marsh and Blyth’s Reed Warblers, however, the inclusion of mimicry is not an important component within the songs of either scirpaceus or fuscus. Both taxa regularly incorporate limited mimicry, such as the calls of Bearded Tit Panurus biarmicus, but this typically appears randomly and occasionally.

Identification summary

Examination in the hand of a putative fuscus is essential to support any claim of this form in western Europe. Additional observations in the field, where subtle changes in tone and hue can occur under a range of light conditions and postures, may also help to substantiate identification.

In addition to a full range of biometrics, examination of the extent of plumage abrasion may also assist in determining when moult has occurred, the timing of which can be compared with that of west European scirpaceus. Worn adults will be mostly inseparable from scirpaceus. Only freshly moulted adults in the wintering areas, adults which have recently returned to the Palearctic breeding grounds and first-winters in early autumn, up to November, are likely to be identifiable.

The following suite of characters should separate ‘typical fuscus’ or ‘greyer fuscus’ from scirpaceus. ‘Warmer fuscus’ is not considered separable from scirpaceus in terms of plumage alone. These features are in no particular order of merit but should, ideally, be compared directly with those of scirpaceus in the hand.

- Upperparts Pale, less rich (more creamy) olive-brown, tinged greyish on the head and nape, and with a paler (sandy, ginger or tawny-buff) rump and uppertail-coverts, or pale, greyish olive-brown from head to uppertail-coverts. In comparison, scirpaceus is a richer brown, with a warmer cinnamon tone.

- Underparts Pale, almost white, with a pale buff or cream wash restricted to the breast sides and flanks (i.e. whiter than scirpaceus).

- Wings In May and June, the primaries have distinct pale tips, broadest next to the feather shaft on the outer web and highlighting the position of each feather in the closed wing. A dark ground colour of the primaries, indicating a late-winter moult (as in Marsh Warbler), is a further pointer towards fuscus. The wing-coverts are edged buff-brown, less cinnamon than scirpaceus. Although the wing
length of *fuscus* averages longer than *scirpaceus*, there is extensive overlap and only a measurement above 72 mm is likely to exclude *scirpaceus*.

- Tail The outermost pair of feathers shows conspicuous whitish tips and distinct broad, pale fringes that extend along the distal inner webs. Conspicuous whitish tips are also present on at least the two adjacent pairs, and often on all rectrices. Pale tips to the outer rectrices may also be present on some *scirpaceus*, but these are invariably narrow, less contrasting, and rarely extend onto the central rectrices. Furthermore, on *scirpaceus*, the pale extension along the inner web of the outermost pair is usually absent or, at best, appears narrow, diffuse and ill-defined.

**Claims from Britain**

Currently, no reports of *fuscus* from western Europe have been sufficiently convincing to merit acceptance. Although there have been several reports from Britain, it remains unproven whether any of these actually represents an individual originating from within the breeding range of *fuscus*.

In recent years, there have been a number of October reports from Britain of both Marsh Warbler and *fuscus*, including several well-watched individuals on the Isles of Scilly. It should be remembered that the vast majority of Marsh Warblers depart from Europe by mid-September, so that any putative Marsh Warbler in northwest Europe in October merits very close scrutiny. A particularly co-operative and intriguing individual on St Agnes, Scilly, in October 1979, generated much debate, both at the time and subsequently (Grant 1980). This individual was eventually trapped, and identified in the hand as a Marsh Warbler. Published details and descriptions, however, reveal many differences from first-winter Marsh Warblers trapped in East Africa at the same time of year, yet are a close match of *fuscus* (Pearson 1981). In retrospect, it seems possible that this was, indeed, a *fuscus*, and only a lack of knowledge of this form at that time masked its true identity. Elsewhere, claims include singles trapped at Spurn, East Yorkshire, on 24th September 1977, 3rd June 1984 and 18th-19th September 1993 (Neal 1996), one trapped on Fair Isle, Shetland, during 12th June to 1st July 2000 (Shaw *et al.* 2000), and one in song and trapped at Filey, North Yorkshire, for several days from 10th June 2001 (Dunn 2001).

Any Eurasian Reed Warbler paler or greyer than typical European breeding *scirpaceus* will inevitably generate interest as pressure grows to add *fuscus* to national (and personal) lists. It seems certain that claims of atypical Eurasian Reed Warblers displaying some characters of *fuscus* will continue to be made. Given the difficulties surrounding the identification of this form, even in the hand, any claim should remain unproven unless all the subtle characteristics associated with ‘typical *fuscus*’ or ‘greyer *fuscus*’ are met. Ideally, feather, tissue or blood samples should be obtained, with appropriate authority, for molecular investigation and to facilitate comparison with known breeding populations.

**Acknowledgments**

DJP extends his thanks to Gerhard Nikolaus and Graeme Backhurst for much co-operative warbler-ringing over the years in eastern Africa, and to Joseph Chemichko and Andrei Gavrilov for arranging visits to ringing centres in Ukraine and Kazakhstan. The staff at the Natural History Museum, Tring, have been particularly helpful, especially Robert Pryjs-Jones and Mark Adams. We also thank John Ash, Stephanie Tyler, Stephen Rumsey, Staffan Bensch, Bo Neilson and Dave Kelly for providing information and much helpful discussion. Arnaud B. van den Berg, Jari Peltomäki and Roger Riddington have allowed us to use their excellent slides to illustrate this paper; and Dave Farrow kindly provided a tape recording of the song of *fuscus* from Kazakhstan. Finally, our thanks go to Paul Leader, who made numerous comments on an earlier draft; his in-depth understanding of *Acrocephalus*-*warbler* identification has improved this paper immensely. Fig. 1, by Brian Small, taken from the forthcoming Helm Identification Guide Reed and Bush Warblers of the World by Peter Kennerley and David Pearson, is reproduced here with the kind permission of the publishers, Christopher Helm.

**References**


Grimmett, R., & Taylor, H. 1992. Recent observations from
Eurasian Reed Warbler of Asian form fuscus

David J. Pearson, 4 Lupin Close, Reydon, Southwold, Suffolk IP18 7NW
Brian J. Small, 78 Wangford Road, Reydon, Southwold, Suffolk IP18 6NX
Peter R. Kennerley, 16 Coppice Close, Melton, Woodbridge, Suffolk IP12 1RX