

# Short paper

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## Shades of grey: ‘eastern’ Skylarks and extralimital subspecies identification

**Abstract** The identification of vagrant forms of Skylark *Alauda arvensis* is a difficult topic, given the degree of variation within the currently recognised subspecies. We describe and publish images of a strikingly grey Skylark in Lincolnshire in the autumn of 1988, which does not readily match reference material of other known subspecies. Published records of putative eastern Skylarks in Britain & Ireland are discussed, several of which have been attributed to the eastern subspecies *A. a. dulcivox*. There remains much to discover about Skylark variation, and the classic trinomial system of nomenclature may not be the best vehicle for this task.

The Skylark *Alauda arvensis* is one of the most abundant and widely distributed Palearctic birds. Across its range, the species is highly variable in both plumage and biometric characteristics (Vaurie 1951). This variation may be controlled by edaphic factors (abiotic factors related to soil type) – changes in feather melanin deposition typically follow gradients in soil colour in many lark species (e.g. Guillaumet *et al.* 2008). Consequently, establishing the number of populations of Skylarks that merit subspecies status is a thankless task, which has led to taxonomic headaches for almost a century (e.g. Ivanov 1929, Meinertzhagen 1951, Vaurie 1951, Dementiev & Gladkov 1954, Dickinson & Dekker 2001). In 2004, *HBW* opted to recognise 13 subspecies of Skylarks in total, eight of which occur in the Western Palearctic (de Juana *et al.* 2004; table 1), and this broadly agrees with the synopsis in *BWP*. Based on this arrangement, two subspecies (nominate *arvensis* and *A. a. scotica*) breed in Britain and a further two to four might be expected to occur as migrants or vagrants (based on their migration route and sympatry with other regular British vagrants); however, only *arvensis* is accepted onto the official British List (Dudley *et al.* 2006).

The fact that subspecies identification of Skylarks *within* their breeding range is so fraught with difficulty has probably dissuaded observers from claiming extralimital vagrant subspecies in recent years. Nonetheless, there have been a number of published

records (table 2) from Britain & Ireland of unusual Skylarks whose plumage differed significantly from the norms of the ‘typical’ breeding and wintering populations. Detailed descriptions for many of these records are lacking and we have not been able to examine the original skins (of the pre-1950 records). Here we present hitherto unpublished images and a description of a candidate ‘eastern’ Skylark from Lincolnshire and review the published literature on Skylark identification, before examining extralimital subspecies identification through a wider lens.

### The Butterwick lark

On the evening of 16th November 1988, AB and Niven Vessey caught an unusual Skylark on the Lincolnshire coast at Butterwick (plates 362–365). This bird was one of over 300 Skylarks caught at roost that month in a grass field just inside the seawall. The bird’s appearance was striking – it was entirely grey and white, and remarkably fresh-plumaged in comparison with the other Skylarks trapped. Measurements revealed a wing length of 109 mm and weight of 34 g. The ringers decided to roost this bird overnight, together with a ‘normal-looking’ Skylark for comparison, to allow photographs to be taken the following morning.

When the bird was examined in the hand, a key difference from other Skylarks caught that night appeared to be the pattern of the crown feathers, which were shorter and more rounded and with a more uniform pale



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**362–365.** An unusual, perhaps eastern, Skylark *Alauda arvensis* (left), with typical Skylark, probably *A. a. arvensis*, Butterwick, Lincolnshire, November 1988.

border (plate 363). The other Skylarks had longer crown feathers, with triangular-shaped dark centres and an indistinct chestnut edge. The combination of an almost pied, stripy crown and black-flecked cheeks on a greyish-white background gave the bird's head a rather distinctive appearance, unlike that of a typical Skylark (in Britain & Ireland). The mantle pattern was almost identical to that of a normal Skylark, except for the absence of any warm brown or rufous tones; across the rest of the upperparts, a combination of dark grey feather centres with white borders accentuated the stripy appearance, particularly on the tertials, scapulars and inner wing-coverts, which were

very dark-centred. The tertials had a narrow, off-white border, so distinct that it gave the impression of a thin subterminal black area; typical Skylarks showed generally dark brown tertials with a less well-defined chestnut edge. The breast and belly were off-white with black streaks on the upper breast and a few sparse streaks on the sides of the belly; in this respect, only the colour tones differed from a normal Skylark.

Upon release at dawn on 17th November, the bird flew a short distance, without calling, landed among a small group of other Skylarks and began to feed. In daylight, this bird was highly distinctive, recalling the colour of a winter-plumaged Dunlin *Calidris*

**Table 1.** Skylark *Alauda arvensis* taxonomy and breeding distribution, following de Juana *et al.* (2004).

Western Palearctic subspecies	
subspecies	range
<i>A. a. arvensis</i>	North and central Europe east to the west side of the Urals
<i>A. a. scotica</i>	Faroes, north and west Scotland, northwest England, Ireland
<i>A. a. cantarella</i>	Southern Europe, from northern Spain east to the Lower Don and the Caucasus
<i>A. a. sierrae</i>	Central and southern Portugal, southern Spain
<i>A. a. guillelmi</i>	Northern Portugal, northwest Spain
<i>A. a. harterti</i>	Northwest Africa, across the Mahgreb
<i>A. a. armenicus</i>	Eastern Turkey and Armenia to northwest Iran
<i>A. a. dulcivox</i>	Urals and lower Volga to the northern Altai and the steppes of Kazakhstan
Eastern Palearctic subspecies	
subspecies	range
<i>A. a. intermedia</i>	Southeast Siberia, north to the Amur River
<i>A. a. pekinensis</i>	Northeast Siberia east to Koryakland and south to Kamchatka and north Kuril Is. Winters south to Japan, Korea and Ussuriland
<i>A. a. kibortii</i>	Central Siberia, from the Yenisey to the Zeya and Lena rivers, wintering in China, Korea and Japan
<i>A. a. lonnbergi</i>	North Sakhalin, Shantar Is. (in SW Sea of Okhotsk), possibly also lower Amur Basin
<i>A. a. japonica</i>	South Sakhalin, South Kurils, Japan and Ryukyu Is.

**Table 2.** Published records of Skylarks *Alauda arvensis* from Britain & Ireland that were suspected of being of eastern origin.

Location	Date	Reference	Notes
Flannan Islands, Outer Hebrides	24th February 1906	Witherby 1948	Assigned to <i>A. a. 'cinerea'</i>
Kinsale, Co. Cork	7th October 1910	Barrington 1913	
Tuskar Lighthouse, Co. Wexford	5th October 1911	Patten 1913	
Dungeness, Kent	4th January 1924	Alexander 1924	Considered to be <i>A. a. intermedia</i>
Fair Isle	3rd November 1935	Waterston 1936	Assigned to <i>intermedia</i> but quite dark so possibly <i>A. a. cantarella</i>
Sheringham, Norfolk	25th–26th September 1979	Seago 1980	
Sheringham, Norfolk	5th October 1998	Votier & Shepherd 1999	Provisionally assigned to <i>A. a. dulcivox</i>
Rocky Point, Co. Donegal	26th–29th September 1999	Wallace <i>et al.</i> 2001	Assigned to <i>A. a. dulcivox</i>

*alpina* and somewhat resembled a Short-toed *Calandrella brachydactyla* or Lesser Short-toed Lark *C. rufescens*.

### Which Skylark subspecies?

Previous records of 'eastern' Skylarks from Britain & Ireland have been ascribed to a range of different subspecies (table 2). Some of these have been attributed to *dulcivox*, which Dementiev & Gladkov (1954) considered to be 'considerably greyer and lighter' than other Asiatic subspecies with 'light feather borders on upperparts light grey, ochre shade barely noticeable on them, especially on rump and tail coverts'. Vaurie (1959) noted that *dulcivox* is 'slightly paler than *cantarella*, more sandy in fresh plumage' (and that *cantarella* is 'less richly coloured, greyer, than nominate *arvensis*'). Although *dulcivox* is often referred to as being a large subspecies (e.g. Ivanov 1929, Cramp 1988), there a great deal of variation, both within and between sexes. Dementiev & Gladkov (1954) gave wing lengths in the range 105–120 mm (n=30), while wing-length measurements (unflattened chord) of *dulcivox* specimens from western Siberia at the Natural History Museum (NHM), Tring, were similar (range 107–118 mm, mean 114, n=11; ACL unpubl. data). A sample of nominate *arvensis* from the Netherlands in April–August, listed in *BWP*, were measured as follows: (males) range 108–119 mm, mean 113.5, n=55; (females) range 100–110 mm, mean 104.8, n=52.

There are five specimen records of *dulcivox* listed from Hungary, all in January/February (Horváth *et al.* 1964), while this form is treated as accidental (probably scarce) in Israel, where two were trapped in Eilat in December 1984 (Shirihai 1996). This late autumn/winter occurrence pattern is reflected in the British and Irish reports of putative eastern forms (table 2). None of the British & Irish reports has been ratified by any national body,

no published photographs exist and we have been unable to view the original specimens. All records are of single birds, although in addition to those listed in table 2 a flock of 30 was reported on South Uist, Outer Hebrides, on 18th January 1934, and described as 'considerably wilder' than the local birds (Meinertzhagen 1934). Two of these birds were shot, and assigned to *A. a. intermedia*. In the light of revelations that much of Meinertzhagen's work was fraudulent (Knox 1993), and the exceptional nature of the observation, this record should be treated as highly suspicious.

Comparison of the images of the Butterwick bird with skins of *dulcivox* (e.g. plates 367 & 368) does not provide a good match and, since we were unable to find similarly plumaged individuals within the NHM collection at Tring, we are hesitant to attribute this individual to subspecies without further information. One possibility is that the bird was in some form of aberrant plumage which simply lacked brown pigments – it was so much greyer than any reference material available in museum collections – although this alone would not explain differences in feather condition and wear.

Two of the birds listed in table 2, those at Dungeness in 1924 (Alexander 1924) and on Fair Isle in 1935 (Waterston 1936), were considered to be *A. a. intermedia*. Vagrancy by this Transbaikal subspecies (which occurs from southeast Siberia, north to the Amur



**366.** An unusually small, pale Skylark *Alauda arvensis*, Whalsay, Shetland, October 2007.

Hugh Harrop

Brian J. Small ©NHM, Tring



367 & 368. Skylarks *Alauda a. arvensis*, collected in autumn in the UK.



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369 & 370. 'Eastern' Skylarks *Alauda arvensis dulcivox*, collected in Siberia in the winter. Note the differences between the two subspecies in these plates – in particular the colder tones, reduced buff (both on the breast and mantle) and finer streaking on the breast in *dulcivox*.



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River) would perhaps be less likely than by *dulcivox*, although not impossible (see Gilroy & Lees 2003, Harrop 2007); considering the overlap in characteristics with the more local *A. a. cantarella*, field identification of *intermedia* seems to be speculative.

A well-photographed, distinctively small and pale Skylark present on Whalsay, Shetland, on 5th–6th October 2007 (plate 366), was also touted by some as potentially being of 'eastern' origin, although the presence of warm buffish tones on both the upperparts and the underparts, including rufous edges to the coverts and tertials, seem to match *A. a. cantarella* better. However, examination of long series of specimens reveals extensive variation within the British forms, and a distinctively pale Skylark, such as the Whalsay bird, may simply represent an aberrant individual with reduced feather melanin (P. Stronach *in litt.*). Considering that such differences in feather melanin are the only consistent differences between many recognised subspecies, the field identification of

extralimital vagrants of these similar races is probably impossible.

In presenting these images of the Butterwick lark we hope to stimulate new interest in these reports of 'pale Skylarks' and we welcome correspondence with observers familiar with eastern Skylark subspecies.

### New systematic developments and field identification of cryptic (sub)species

A further complication to this subject is that a recent study of the mitochondrial phylogeography of the Skylark found two highly divergent clades, one eastern, one western, with a deep (6.2%) sequence divergence suggesting a pre-Pleistocene split (Zink *et al.* 2008). Zink *et al.* suggested that these two clades should be treated as phylogenetic species – the western clade as Skylark *A. arvensis* and the eastern clade as Pekin Skylark *A. pekinensis*, after Swinhoe (1863). However, field identification of vagrant 'Pekin' Skylarks may be impossible consid-

ering their similarity to many western forms. Moreover, Zink *et al.* did not find molecular support for individual subspecies treatment for the various eastern and western subspecies of Skylark, which they suggested should all be lumped into one or other of the two new 'species'. Ironically, in this analysis *A. a. dulcivox* fits into the western Skylark clade. This situation is analogous to the results of a similar analysis of the Yellow Wagtail *Motacilla flava* complex, which also found a deep east–west split and little genetic structuring among recognised northern subspecies (Ödeen & Björklund 2003). Plumage colour patterns in many birds have been shown to evolve rapidly and exhibit high levels of homoplasy (convergent evolution with an independent origin) (e.g. Hackett & Rosenberg 1990, Omland & Lanyon 2000). These traits may be under very simple genetic control (Grant & Grant 1997), which means that even single mutations could be responsible for the convergent appearance of distantly related subspecies of Skylarks, such as *pekinensis* and *arvensis*. Considering the intractable nature of the field identification of the Transbaikal 'Pekin' Skylark group, it would require molecular proof (such as that recently obtained for a suspected 'eastern' Yellow Wagtail in Devon; J. M. Collinson *in litt.*). If the original skins of any of the individuals collected prior to 1935 (table 2) and assigned to the eastern clade *intermedia* can be traced and DNA subsequently extracted, then the occurrence of 'Pekin' Skylark in Europe may yet be established.

Interest in the identification of extralimital vagrant forms has enjoyed a resurgence in recent years. High-quality digital images in particular have afforded us the possibilities of subspecies-level diagnoses that were formerly thought possible only with a trapped bird (see Garner 2008). This has led to the field identification of many difficult species/subspecies for which it was previously deemed 'impossible' by ornithologists or that were considered 'off the radar' (e.g. Birch & Lee 1995). However, beyond the immediate difficulties of field diagnosis of cryptic species (principally a full appreciation of the variation within local populations and the spectre of hybridisation) we also need to consider the validity of the taxa in the first instance. There

was a trend during the late nineteenth century and the first half of the twentieth century for taxonomists to name subspecies based on mean differences between populations, which is clearly at odds with identification of diagnosable populations (Patten & Unitt 2002). The standard subspecies definition is based on the '75% rule' (Amadon 1949; Mayr 1969). In other words, for a subspecies to be valid, 75% of the population must lie outside 99% of the range of other populations for a given defining character(s). In many cases, however, a looser rule of mean differences was followed (Rand & Traylor 1950). Several reviews (e.g. Barrowclough 1982, Haffer 1997, 2003) have sought to highlight the problems with subspecies diagnosis, suggesting that the recognition of small steps within long clines is probably unnecessary and that a reappraisal of subspecies limits in many Palearctic taxa is probably warranted (e.g. Kirwan 2006, Shirihi & Sennson *in prep.*). For instance, in a broad analysis of the population genetics structure of the subspecies of 41 polytypic Holarctic bird species, Zink (2004) found that 97% of named subspecies lacked the population genetics structure indicative of distinct evolutionary units. Thus both the diagnosis and the field identification of subspecies need to be quantitative and statistically justified to the fullest extent possible, making use of both diagnosable characters and molecular toolkits. A reassessment of the trinomial system is a major challenge for the twenty-first century's 'frontier' taxonomists and field birders alike.

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#### References

- Alexander, H. G. 1924. Late immigration of Sky-larks into Kent. *Brit. Birds* 17: 274.
- Amadon, D. 1949. The seventy-five percent rule for subspecies. *Condor* 51: 250–258.
- Barrington, R. M. 1913. Siberian Skylark in Co. Cork. *Ir. Nat.* 22: 20.
- Barrowclough, G. F. 1982. Geographic variation, predictiveness, and subspecies. *Auk* 99: 601–603.
- Birch, A., & Lee, C.-T. 1995. Identification of the Pacific Diver – a potential vagrant to Europe. *Birding World* 8: 458–466.

- Cramp, S. 1988. *The Birds of the Western Palearctic*. Vol. 5. OUP, Oxford.
- Dementiev, G. P., & Gladkov, N. A. (eds.) 1954. *Birds of the Soviet Union*. Vol. 5. Sovetskaya Nauka, Moskva.
- Dickinson, E. C., & Dekker, R. W. R. J. 2001. Systematic notes on Asian birds. I. A preliminary review of the Alaudidae. *Zool. Verh. Leiden* 335: 61–84.
- Dudley, S. P., Gee, M., Kehoe, C., Melling, T. M., & the British Ornithologists' Union Records Committee (BOURC). 2006. The British List: a checklist of the birds of Britain (7th edn.). *Ibis* 148: 526–563.
- Garner, M. 2008. *Frontiers in Birding*. BirdGuides, Sheffield.
- Gilroy, J. J., & Lees, A. C. 2003. Vagrancy theories: are autumn vagrants really reverse migrants? *Brit. Birds* 96: 427–438.
- Grant, P. R., & Grant, B. R. 1997. Genetics and the origin of bird species. *Proc. Nat. Acad. Sci. USA* 94: 7768–7775.
- Guillaumet, A., Crochet, P.-A., & Pons, J.-M. 2008. Climate-driven diversification in two widespread *Galerida* larks. *BMC Evol. Biol.* 8: 32.
- Hackett, S. J., & Rosenberg, K. V. 1990. Comparison of phenotypic and genetic differentiation in South American antwrens (Formicariidae). *Auk* 107: 473–489.
- Haffer, J. H. 1997. Species concepts and species limits in ornithology. In: del Hoyo, J., Elliott, A., & Sargatal, J. (eds.), *Handbook of the Birds of the World*. Vol. 4. Lynx Edicions, Barcelona.
- 2003. Avian zoogeography, speciation and the museum tradition. *Bull. Brit. Orn. Club Suppl.* 123A: 7–25.
- Harrop, A. H. J. 2007. Eastern promise: the arrival of far-eastern passerine vagrants in autumn. *Brit. Birds* 100: 105–111.
- Horváth, L., Keve, A., & Marián, M. 1964. The Systematic Relegation and Migratory Conditions of the Skylark (*Alauda arvensis* L.) in Hungary and the Carpathian Basin. *Ann. Hist. Nat. Mus. Nat. Hung.* 1. 56: 519–628.
- Ivanov, A. 1929. Die sibirischen Feldlerchen. *Ann. Mus. Zool. Acad. Sci. URSS* 29: 279–287.
- de Juana, E., Suarez, F., & Ryan, P. G. 2004. Family Alaudidae (larks). In: del Hoyo, J., Elliott, A., & Christie, D. A. (eds.), *Handbook of the Birds of the World*. Vol. 9. Lynx Edicions, Barcelona.
- Kirwan, G. M. 2006. Comments on two subspecies of passerine birds recently described from Turkey, *Eremophila alpestris kumerloevae* and *Pyrrhula pyrrhula paphlagoniae*, with remarks on geographical variation in related forms of Bullfinch from the Balkans and Caucasus. *Sandgrouse* 28: 12–23.
- Knox, A. G. 1993. Richard Meinertzhagen – a case of fraud examined. *Ibis* 135: 320–325.
- Mayr, E. 1969. *Principles of Systematic Zoology*. McGraw-Hill, New York.
- Meinertzhagen, R. 1934. *Bull. Brit. Orn. Club* 55: 110.
- 1951. Review of the Alaudidae. *Proc. Zool. Soc. Lond.* 121: 81–132.
- Ödeen, A., & Björklund, M. 2003. Dynamics in the evolution of sexual traits: losses and gains, radiation and convergence in Yellow Wagtails (*Motacilla flava*). *Mol. Ecol.* 12: 2113–2130.
- Omland, K. E., & Lanyon, S. M. 2000. Reconstructing plumage evolution in orioles (*Icterus*): repeated convergence and reversal in patterns. *Evolution* 54: 2119–2133.
- Patten, C. J. 1913. The diurnal migrations of certain birds observed at the Tuskar Rock (Ireland). *Zoologist* 1913: 333.
- Patten, M. A., & Unitt, P. 2002. Diagnosability versus mean differences of Sage Sparrow subspecies. *Auk* 119: 26–35.
- Rand, A. L., & Traylor, M. A. 1950. The amount of overlap allowable for subspecies. *Auk* 67: 169–183.
- Seago, M. J. 1980. Norfolk Bird Report 1979. *Norfolk & Norwich Nat. Soc.* 25: 109–128.
- Shirihai, H. 1996. *The Birds of Israel*. Academic Press, London.
- Swinhoe, R. 1863. On new and little-known birds from China. *Proc. Zool. Soc. Lond.* 1863: 87–94.
- Vaurie, C. 1951. A study of Asiatic larks. *Bull. Am. Mus. Nat. Hist.* 97: 435–526.
- 1959. *The Birds of the Palearctic Fauna: a systematic reference*. Order Passeriformes. Witherby, London.
- Votier, S., & Shepherd, K. 1999. 'Eastern' Skylark, Sheringham, 5th October 1998. *Norfolk Bird Club Bulletin* 34: 11–14.
- Wallace, D. I. M., McGeehan, A., & Allen, D. 2001. Autumn migration in westernmost Donegal. *Brit. Birds* 94: 103–120.
- Waterston, G. 1936. Bird notes from Fair Isle. *Scottish Naturalist* 219: 61–64.
- Witherby, H. F., Jourdain, F. C. R., Ticehurst, N. F., & Tucker, B. W. (eds.) 1948. *The Handbook of British Birds*. Vol. 1. Witherby, London.
- Zink, R. M. 2004. The role of subspecies in obscuring avian biological diversity and misleading conservation policy. *Proc. Roy. Soc. B* 271: 561–564.
- , Pavlova, A., Drovetski, S., & Rohwer, S. 2008. Mitochondrial phylogeographies of five widespread Eurasian bird species. *J. Orn.* 149: 399–413.

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