

Splitting headaches?

Recent taxonomic changes affecting the British and Western Palearctic lists

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ABSTRACT This paper summarises the taxonomic changes that have affected the BOU British List and the *British Birds* Western Palearctic list since 2000. The purpose of this review is to present these changes simply and clearly, in a single document to provide an easy reference, and to give brief, non-technical explanations of the reasons underlying the decisions. Similar updates will be provided in future in *BB* on a more regular basis.

Introduction

The editorial policy of *British Birds* is to follow taxonomic changes adopted by the British Ornithologists' Union Records Committee on the recommendation of its Taxonomic Subcommittee (TSC). For Western Palearctic taxa that are outside the remit of the BOURC, recommendations of the Taxonomic Advisory Committee (TAC) of the Association of European Records and Rarities Committees (AERC) are normally followed. Both the BOURC TSC and the AERC TAC have published several relevant papers since 2000 that alter the taxonomy of the British and Western Palearctic lists: Knox *et al.* (2002), Sangster *et al.* (2002a), AERC (2003), Sangster *et al.* (2004a) and Sangster *et al.* (2005). The following summary is in no way intended to replace the properly referenced statements contained in those publications. These papers, with the exception of Sangster *et al.* (2002a), are available online at <http://www.bou.org.uk/recbrlst.html> and <http://www.aerc.eu>. Species-level decisions are made by the TSC on the basis of the committee's Guidelines (Helbig *et al.* 2002), which is also available online at <http://www.bou.org.uk/recbrlst.html>. This paper summarises the decisions contained in these papers, for easy reference and to act as a source of quick reminders to the reasoning underlying the changes. Although the emphasis here is on the *British Birds* Western Palearctic list (available online at

<http://www.britishbirds.co.uk/bblist.htm>), it should be stressed that these decisions relate to the BOU British and AERC Western Palearctic lists.

Some of the changes implemented by the BOU and *BB* prior to 2000 but subsequent to the publication of Voous's *List of Holarctic Birds* in the 1970s are listed in Appendix 1. Four taxonomic changes that are peripheral to the British List, but upon which the BOURC TSC has not yet commented, have been incorporated into the present *BB* Western Palearctic list following the recommendations of the AERC TAC. These are that the following pairs of taxa are treated as separate species: Bermuda Petrel *Pterodroma cahow* and Black-capped Petrel *P. hasitata*; Oriental Honey-buzzard *Pernis ptilorhyncus* and Honey-buzzard *P. apivorus*; Amur Falcon *Falco amurensis* and Red-footed Falcon *F. vespertinus*; and Saunders's Tern *Sterna saundersi* and Little Tern *S. albifrons*. These changes are not discussed further here. One taxonomic change that falls outside the remit of the BOURC TSC has been adopted by AERC but not included in the *BB* list. This is the placement of Demoiselle Crane *Anthropoides virgo* in the genus *Grus*. Phylogenetic studies have not yet fully resolved the relationships between different groups of cranes, and there seems little point making changes until these are better studied.

For each decision listed below, the *previous* English or scientific species name or higher

taxon involved is given first, in bold, with the relevant change(s) summarised in italics, including the original BOURC or AERC reference for further information. Identification papers and other references are listed in the normal way, but the TSC and AERC TAC reports are abbreviated as follows: TSC1 = Knox *et al.* (2002); TSC2 = Sangster *et al.* (2004a); TSC3 = Sangster *et al.* (2005); AERC1 = Sangster *et al.* (2002a); and AERC2 = AERC (2003). Finally, the main paragraphs of text summarise the reasoning and flesh out the details of the recommendation, including, where appropriate, an explanation or literal translation of newly adopted generic scientific names.

Taxonomic changes to the British and Western Palearctic lists

1. Species-level taxonomy

Bewick's Swan *Cygnus columbianus*

The two subspecies of Bewick's Swan continue to be treated as conspecific (TSC1, AERC2)

The two subspecies of Bewick's Swan, *C. c. columbianus* and *C. c. bewickii*, have been proposed as potential splits because they differ in the amount of yellow on the bill (summarised in Sangster *et al.* 1997). However, it is not clear whether there is any overlap, and although hybridisation occurs there is virtually no information on the relationships between the two taxa in that part of eastern Siberia where they come in contact.

Canada Goose *Branta canadensis*

Greater and Lesser Canada Goose should be treated as separate species (TSC3)

Both morphology and genetics suggest that the 'large-bodied' and 'small-bodied' Canada geese form separate lineages. Genetically, the small-bodied birds appear to be closer to Barnacle Goose *B. leucopsis* than they are to the large-bodied taxa, and the large taxa are closer to the Hawaiian goose complex (of which only the Nene *B. sandvicensis* survives). This is a surprising result and, if true, 'Canada Goose' as we previously understood it comprises at least two species: Greater Canada Goose *B. canadensis* (with subspecies *canadensis*, *fulva*, *interior*, *maxima*, *moffitti*, *occidentalis* and *parvipes*), and Lesser Canada Goose *B. hutchinsii* (with subspecies *hutchinsii*, *leucopareia*, *minima* and *taverneri*).

It is assumed that Canada geese, Hawaiian geese and Barnacle Goose all evolved from a

common 'white-cheeked' ancestral species that looked like modern-day Canada geese. Barnacle Goose and Hawaiian geese diverged greatly in plumage from this ancestor, but Greater and Lesser Canada Goose much less so. The older literature reports several parts of the range where large- and small-bodied Canada geese breed close to each other, but in separate habitats and without hybridisation. Identification in the field remains a problem; the best structural pointer to Lesser Canada Goose is generally the shorter, stubbier bill. Although the race *parvipes* is colloquially known as 'Lesser Canada Goose' in the USA and Canada, it is in fact a Greater Canada Goose *B. canadensis parvipes*. The American Ornithologists' Union (AOU) has also adopted this split, but chose 'Cackling Goose' as the vernacular name for *B. hutchinsii*, retaining 'Canada Goose' for *B. canadensis*. In fact, over 30 different vernacular names have previously been used for Canada geese subspecies, and it is not possible to retrieve an old name that defines either species unambiguously. Naming them 'Big Canada Goose' and 'Little Canada Goose' would seem to be the next-best alternative! For identification, see http://www.sibleyguides.com/canada_cackling.htm, <http://www.oceanwanderers.com/CAGO.Subspecies.html> and http://www.dfw.state.or.us/ODFWhtml/InfoCntrWild/PDFs/Goose_ID_Book.pdf

Common Teal *Anas crecca*

Green-winged and Eurasian Teal have been split (AERC1)

There are diagnostic plumage differences between male Green-winged *A. carolinensis* and Eurasian Teals *A. crecca*, and limited genetic evidence suggests that *carolinensis* is more closely related to the morphologically divergent Speckled Teal *A. flavirostris* than it is to *crecca*. As described in Sangster *et al.* (2001), they should therefore be treated as separate species: Green-winged Teal *A. carolinensis* (monotypic) and Eurasian Teal *A. crecca* (polytypic, with subspecies *crecca* and *nimia*). The basis for recognition of *nimia*, the larger, Aleutian subspecies of Eurasian Teal, is very weak (Sangster *et al.* 2001).

Greater Scaup *Aythya marila*

The subspecies nearctica has been recognised (TSC3)

Greater Scaup has been treated as monotypic since the 1971 BOU *Checklist* (BOU 1971)

without any explanation. However, Pacific and Nearctic birds have a stronger pattern of vermiculation on the mantle and scapulars, and should be recognised as a separate subspecies *A. m. nearctica*. There are no Western Palearctic records of *nearctica*.

Scoters *Melanitta*

Black and Common Scoter should be treated as separate species; White-winged and Velvet Scoter should be treated as separate species (TSC3)

All six scoter taxa (two 'black' scoters, three 'white-winged' scoters and Surf Scoter *M. perspicillata*) are 100% identifiable on the basis of several clear differences in shape, structure and colour of their bills, which males use as signals during courtship display. Common *M. nigra* and Black Scoters *M. americana* also differ clearly in vocalisations, as do Velvet *M. fusca* and White-winged Scoters *M. deglandi*. There are small plumage differences between Velvet and White-winged Scoters too. Together, these differences, which are likely to affect mate choice, are clear enough to warrant specific recognition for:

Common Scoter *M. nigra* (monotypic)

Black Scoter *M. americana* (monotypic)

Velvet Scoter *M. fusca* (monotypic)

White-winged Scoter *M. deglandi* (polytypic with subspecies *deglandi* and *stejnegeri*)

Surf Scoter *M. perspicillata* (monotypic)

The 'Asian' White-winged Scoter *M. d. stejnegeri* may also merit specific status, but further research into its vocalisations, breeding behaviour and, perhaps, genetics are required (Collinson *et al.* 2006).

Red-throated Diver *Gavia stellata*

Red-throated Diver should now be treated as monotypic (TSC3)

The grey edging to the mantle feathers that was used to distinguish the subspecies *squamata* is also found variably in nominate-race birds, and is not sufficiently reliable to warrant subspecific recognition. The species is now treated as monotypic.

Black-browed Albatross

Diomedea melanophris

Black-browed, Shy and Yellow-nosed Albatrosses have been placed in a different genus, Thalassarche (TSC1, AERC2)

Phylogenetic analysis of mitochondrial-DNA (mtDNA) showed that albatrosses comprise

four groupings, which are now classified as four genera: the North Pacific albatrosses *Phoebastria*, great albatrosses *Diomedea*, sooty albatrosses *Phoebetria* and 'mollymawks' *Thalassarche*. Three species of mollymawk have been recorded in the Western Palearctic: Black-browed Albatross *Thalassarche melanophris* (formerly *Diomedea melanophris*), Shy Albatross *T. cauta* and Yellow-nosed Albatross *T. chlororhynchos*. The only *Diomedea* now on the Western Palearctic list is Wandering Albatross *D. exulans*. See Sangster *et al.* (2002b) for further details.

Mediterranean Shearwater

Puffinus mauretanicus

Balearic and Yelkouan Shearwaters have been split (AERC1)

Formerly regarded as the western and eastern subspecies (*mauretanicus* and *yelkouan* respectively) of 'Mediterranean Shearwater', Balearic and Yelkouan Shearwaters are genetically divergent (about 3% difference in mtDNA sequences), have skeletal and obvious plumage differences (Balearic being a heavier bird with darker underparts), and differ in their migration strategies. They do not share colonies but their breeding ranges are separated only by a short stretch of sea, which their dispersal abilities would allow them easily to traverse, and if they were ever going to hybridise they would probably do so commonly. However, there is no evidence of hybridisation and the taxa should be treated as separate species: Balearic *Puffinus mauretanicus* and Yelkouan Shearwater *P. yelkouan*. Fossil records suggest that three other species of *Puffinus* shearwater formerly inhabited at least the Mediterranean Sea and Canary Islands. See Sangster *et al.* (2002c) for further details.

Little Shearwater *Puffinus assimilis*

North Atlantic taxa of Little Shearwater have been split from southern taxa (TSC3)

Genetic data suggested that the three North Atlantic taxa, Audubon's Shearwater *Puffinus lherminieri*, 'Cape Verde' Little Shearwater (previously *P. a. boydi*) and 'Madeira' Little Shearwater (previously *P. a. baroli*) are more closely related to each other than to the 'southern' Little Shearwater *P. assimilis* complex. Little Shearwater as defined previously was not a natural grouping, since it excluded at least one taxon (Audubon's Shearwater) that was descended from the last common ancestor of 'Little Shear-

waters'. The two North Atlantic Little Shearwater taxa are therefore split from southern Little Shearwaters as North Atlantic Little Shearwater ('Macaronesian Shearwater') *P. baroli* (polytypic, with subspecies *baroli* and *boydi*). The specific status of Audubon's Shearwater remains unchanged. Only *P. baroli baroli* has been shown to occur in Britain.

Dwarf Bittern *Ardeirallus sturmii*

Dwarf Bittern has been taken out of genus Ardeirallus and placed in Ixobrychus (AERC2) On the basis of morphology, especially skeletal characters, Dwarf Bittern falls neatly within *Ixobrychus*. The species is not sexually dimorphic, but neither is the Streaked Bittern *I. involucris*. The suspected differences in ecology and behaviour that resulted in Dwarf Bittern being placed on its own in the genus *Ardeirallus* are pretty meaningless because neither the Dwarf Bittern nor many other species of *Ixobrychus* have been particularly well studied.

The genus *Hydranassa*

'Plumed' herons previously included in the genus *Hydranassa* have been placed in *Egretta* (AERC2) Generic placement of herons is notoriously unstable but there seems no morphological reason to maintain the genus *Hydranassa*, and the available genetic evidence confirms that

herons within this genus belong in *Egretta*. Hence, in a Western Palearctic context, the following names are adopted: Little Blue Heron *Egretta caerulea*, Black Heron *E. ardesiaca* and Tricolored Heron *E. tricolor*.

Greater Flamingo *Phoenicopterus ruber*

Greater, Caribbean and Chilean Flamingos should be treated as separate species (TSC1)

Greater, Caribbean and Chilean Flamingo were previously regarded as subspecies within a single species *Phoenicopterus ruber*. Although no molecular work has been done, the taxa differ diagnostically on the basis of plumage coloration and pattern, bill colour and leg colour. They also display and vocalise differently, and are host to different species of head lice (Mallophaga), which is claimed to be a good indication of a long period of isolation from close relatives. Their breeding ranges are well separated, and there is no reason to suspect that they will ever merge. Consequently, they have been split as three separate species:

Greater Flamingo *Phoenicopterus roseus* (monotypic)

Caribbean Flamingo *Ph. ruber* (monotypic)

Chilean Flamingo *Ph. chilensis* (monotypic)

Eagle genera

Booted Eagle and Bonelli's Eagle have been placed



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155. Displaying male Houbara Bustard *Chlamydotis undulata fuertaventurae*, Fuertaventura, Canary Islands, February 2006. Plumage features (notably the pattern of the crown and the neck-side tufts) and courtship display, along with vocalisations, are the key differences between Houbara and Macqueen's Bustard *C. macqueenii*. The Canary Islands race *fuertaventurae* is restricted to Fuertaventura, Lanzarote and Graciosa.

in *Aquila* (TSC3)

Eagle taxonomy is complicated, and although the genetic data are not entirely clear it seems likely that the old taxonomy did not reflect their evolution. In particular, some of the larger species of *Hieraetus* were suggested to belong in *Aquila*, while Spotted and Lesser Spotted Eagles were suggested to belong not in *Aquila* but in *Lophaetus*. Given the uncertainty, the only safe option (for the time being) is to place the following Western Palearctic species all within a rather diverse *Aquila*:

Spotted Eagle *A. clanga*

Lesser Spotted Eagle *A. pomarina*

Booted Eagle *A. pennata*

Golden Eagle *A. chrysaetos*

Verreaux's Eagle *A. verreauxii*

Bonelli's Eagle *A. fasciata*

Steppe Eagle *A. nipalensis*

Tawny Eagle *A. rapax*

Eastern Imperial Eagle *A. heliaca*

Spanish Imperial Eagle *A. adalbertii*

Houbara Bustard *Chlamydotis undulata*

Houbara and Macqueen's Bustard have been split (TSC1)

Previously regarded as a subspecies of Houbara, Macqueen's Bustard *C. macqueenii* differs from Houbara on the basis of important plumage features, courtship behaviour and vocalisations (Sangster *et al.* 2004b). The taxa are genetically distinct, and although this distinction is not substantial, it indicates a lack of recent gene flow. They have therefore been split as Houbara Bustard *C. undulata* (polytypic, subspecies *undulata* and *fuertaventurae*) and Macqueen's Bustard *C. macqueenii* (monotypic). All the British records relate to Macqueen's Bustard. An interesting point is that no-one seems to know who Macqueen was.

Stilt Sandpiper *Micropalama himantopus*

Stilt Sandpiper has been placed in the genus Calidris (TSC2)

Previously in a genus of its own, *Micropalama*, Stilt Sandpiper is in fact clearly a *Calidris* on the basis of morphology, behaviour and genetics. For now, it is placed next to the superficially similar Curlew Sandpiper *C. ferruginea* but this may change when *Calidris* is reviewed fully.

Long-tailed Skua *Stercorarius longicaudus*

The race pallescens is now recognised once more (TSC2)

Although there is overlap, birds from Greenland are distinctly paler on the belly and vent than nominate *longicaudus*, and this merits subspecific recognition. The only claimed British specimen of *pallescens* is in the Meinertzhagen collection at the Natural History Museum, and the possibility of fraud means that this subspecies is currently not on the British List (Knox 1993). However, the possible occurrence of *pallescens* in Britain needs to be re-examined.

Great Skua *Catharacta skua*

All skuas are now included in the genus Stercorarius (TSC2)

Genetic evidence suggests that Great *S. skua* and Pomarine Skuas *S. pomarinus* are more closely related to each other than either is to Long-tailed or Arctic Skuas *S. parasiticus*. This makes it impossible to include Pomarine, Arctic and Long-tailed Skuas in a different genus from Great Skua and the large southern skuas. It remains unclear exactly how skuas have evolved, and whether there has been any hybridisation between 'large' and 'small' skuas in the past that is obscuring their relationships. The safest solution is to put all skuas in one genus, *Stercorarius*. Note that this reverses a previous decision to place Great Skua in *Catharacta* (BOU 1997).

Herring Gull *Larus argentatus*

Yellow-legged Gull and Armenian Gull have been split from Herring Gull (TSC3)

The Mediterranean Yellow-legged Gull was formerly regarded as a southern subspecies (*michahellis*) of Herring Gull *L. argentatus*. However, *michahellis* is distinguishable from North European Herring Gulls (*L. a. argenteus* and *L. a. argentatus*) on the basis of the mid-toned, neutral-grey mantle and wing colour of adults, bare-part coloration (bright yellow legs and a red eye-ring), and its voice, together with structural and behavioural differences. In addition, *michahellis* is also genetically well separated from both Herring Gull and Lesser Black-backed Gull *L. fuscus*. Furthermore, when Yellow-legged Gull and Herring Gull breed in mixed colonies in western Europe, they effectively ignore each other and rarely hybridise, indicating that they are separate species. In contrast, *michahellis* is neither genetically nor morphologically well separated from the Atlantic Yellow-legged Gull taxon *atlantis*. Consequently, *michahellis* and *atlantis* stay in the same species, but together they have been split from Herring

Gull as Yellow-legged Gull *L. michahellis* (polytypic, subspecies *michahellis* and *atlantis*).

The Armenian Gull *L. armenicus* was previously regarded as another southern subspecies (*armenicus*) of Herring Gull, but it shares the characteristic darker mantle, yellow legs and red eye-ring that distinguish Yellow-legged Gull from Herring Gull. Furthermore, Yellow-legged Gull and Armenian Gull are distinguishable on the basis of biometric differences, and the extent of black pigmentation in the primaries and bill. They are genetically distinct. There is nothing to stop any *michahellis* or *armenicus* flying deep into the range of the other taxon and hybridising freely, but in fact this does not seem to happen. Intermediate birds and examples of hybridisation are restricted to Turkish *armenicus* colonies, and although there is evidence of *michahellis* genes getting into *armenicus* populations, gene flow in the opposite direction has not been observed. So the taxa are not merging, in spite of having the opportunity to do so, and from that it has been concluded that there must be a degree of effective reproductive isolation and that Yellow-legged and Armenian Gulls behave as different species.

The result of this is that three species of the old 'herring gull' complex are now recognised: Herring Gull *L. argentatus* (polytypic, many subspecies still under consideration) Yellow-legged Gull *L. michahellis* (polytypic, subspecies *michahellis* and *atlantis*) Armenian Gull *L. armenicus* (monotypic)

The best identification papers for Yellow-legged Gull remain Garner & Quinn (1997), Klein & Gruber (1997) and Jonsson (1998). The taxonomic status of *L. a. smithsonianus* and *L. a. cachinnans* is still under review.

Kittiwake *Rissa tridactyla*

The race pollicaris has been resurrected (TSC2)
Kittiwake was historically treated as a polytypic species until the 1971 BOU Checklist (BOU 1971). The North Pacific race *pollicaris* is distinctly darker than the Atlantic race, and the primary tips are more extensively black, and there may even be significant genetic differences. This merits subspecific recognition at least, so Kittiwake is once again recognised as polytypic, with nominate *R. t. tridactyla* in the Atlantic and adjacent seas and *R. t. pollicaris* in the Pacific.

Genera of terns (Sternini)

The genus Sterna has been broken up into smaller

genera (TSC3)

Genetic evidence has shown that *Sterna* as we traditionally understood it was an assemblage of different groups of terns, some of which were not closely related. For example, 'little' terns are genetically well separated from the 'crested' and typical 'black-capped' terns. To recognise our new understanding of tern relationships, the old '*Sterna*' has been broken up:

- The 'brown-winged' terns are now in *Onychoprion*, i.e. Aleutian Tern *O. aleutica*, Sooty Tern *O. fuscata* and Bridled Tern *O. anaethetus*;
- The 'little' terns are now given their own genus, *Sternula* ('diminutive of *Sterna*'), i.e. Little Tern *Sternula albifrons*, Saunders's Tern *S. saundersi*;
- The genera *Gelochelidon* ('laughing swallow') and *Hydroprogne* ('water swallow') have been revived for Gull-billed Tern *G. nilotica* and Caspian Tern *H. caspia*, respectively (cf. BOU 1997);
- The 'black' terns remain unchanged within *Chlidonias*;
- In future, 'crested' terns such as Sandwich Tern *S. sandvicensis*, Royal Tern *S. maxima* and Lesser Crested Tern *S. bengalensis* may be placed in *Thalasseus*, but for now at least they have been retained in *Sterna*. Forster's Tern *S. forsteri*, Common *S. hirundo*, Arctic *S. paradisaea*, Roseate *S. dougallii* and White-cheeked Tern *S. repressa* all remain in *Sterna*.
Western Palearctic terns are now as follows:

Brown Noddy *Anous stolidus*
Aleutian Tern *Onychoprion aleutica*
Sooty Tern *Onychoprion fuscata*
Bridled Tern *Onychoprion anaethetus*
Little Tern *Sternula albifrons*
Saunders's Tern *Sternula saundersi*
Gull-billed Tern *Gelochelidon nilotica*
Caspian Tern *Hydroprogne caspia*
Whiskered Tern *Chlidonias hybrida*
Black Tern *Chlidonias niger*
White-winged Black Tern *Chlidonias leucopterus*
Sandwich Tern *Sterna sandvicensis*
Elegant Tern *Sterna elegans*
Royal Tern *Sterna maxima*
Crested Tern *Sterna bergii*
Lesser Crested Tern *Sterna bengalensis*
Forster's Tern *Sterna forsteri*
Common Tern *Sterna hirundo*
Arctic Tern *Sterna paradisaea*
White-cheeked Tern *Sterna repressa*
Roseate Tern *Sterna dougallii*

Marbled Murrelet *Brachyramphus marmoratus*

Long-billed Murrelet and Marbled Murrelet have been split (AERC2)

A number of lines of genetic evidence show that Long-billed *B. perditus* and Marbled Murrelets *B. marmoratus* have been reproductively isolated for a long time. There are also clear plumage and biometric differences between the two, and they have been regarded as separate species by the AOU since 1998.

Parakeet Auklet *Cyclorhynchus psittacula*

Parakeet Auklet is placed in genus Aethia (AERC2)

Morphological and genetic evidence show that Parakeet Auklet, previously included in genus *Cyclorhynchus*, should be included in *Aethia* with Crested Auklet *A. cristatella*.

Puffin *Fratercula arctica*

Puffin should be regarded as monotypic (TSC3)

To a first approximation, Puffins get bigger the further north you go, in line with Bergman's rule (which suggests that, within a species, populations at high latitudes have larger bodies than populations of the same taxa at low latitudes). The dividing lines between the previously recognised subspecies *arctica*, *grabae* and *naumanni* were essentially arbitrary, however, and the three subspecies have been abolished, so that Puffin is now regarded as monotypic.

Snowy Owl *Nyctea scandiaca* and Brown Fish Owl *Ketupa zeylonensis*

Snowy Owl and Brown Fish Owl have been incorporated into Bubo (TSC2, AERC2)

Although Snowy Owl, now *B. scandiaca*, was previously in *Nyctea*, molecular and morphological analyses have shown that it is most closely related to Great Horned Owl *B. virginianus*. The distinctive features of Snowy Owl can all be related to its adaptation to extreme Arctic environments. Similarly, Brown Fish Owl, previously in *Ketupa*, becomes *B. zeylonensis*.

Blue-cheeked Bee-eater *Merops superciliosus*

Blue-cheeked Bee-eater has been split into three species (TSC2)

Although previously included in Blue-cheeked Bee-eater, the East Asian taxon *philippinus* differs in several plumage features and overlaps in range with *persicus* without interbreeding,

and should therefore be treated as a separate species. The southern and eastern African taxon *superciliosus* is similarly distinct from these two on the basis of plumage differences. Consequently, three species are now recognised: Blue-cheeked Bee-eater *M. persicus* (North Africa to Kazakhstan), Olive Bee-eater *M. superciliosus* (southern and eastern Africa) and Blue-tailed Bee-eater *M. philippinus* (Pakistan to Southeast Asia). All three species are polytypic.

Swallows (Hirundinidae)

Swallow genera have been rearranged with Hirundo being split up (TSC3)

A new genetic study showed that some taxa previously included in *Hirundo*, namely the 'red-rumped swallows' and 'cliff swallows', were not closely related to other species in that genus. They have been placed in *Cecropis** and *Petrochelidon* ('rock swallow') respectively, and are sister taxa to *Delichon*. The remaining *Hirundo* taxa were shown to be sisters to *Ptyonoprogne*. The rearrangement of swallow genera is relevant for the World List, but in a Western Palearctic context, with the recent admission of Purple Martin to the British List, swallows are now listed as follows:

Banded Martin *Riparia cincta*
 Plain Martin *Riparia paludicola*
 Sand Martin *Riparia riparia*
 Tree Swallow *Tachycineta bicolor*
 Purple Martin *Progne subis*
 Crag Martin *Ptyonoprogne rupestris*
 Rock Martin *Ptyonoprogne fuligula*
 Barn Swallow *Hirundo rustica*
 Ethiopian Swallow *Hirundo aethiopica*
 House Martin *Delichon urbicum*
 Red-rumped Swallow *Cecropis daurica*
 Cliff Swallow *Petrochelidon pyrrhonota*

**Cecropis*: Horace, Ode 4.12. translated by Michael Gilleland: 'Mournfully lamenting Itys, the swallow builds her nest, unhappy bird, and is the undying disgrace of the house of Cecrops, because she cruelly avenged the barbaric lusts of kings.' 'House of Cecrops' refers to Athens, of which Cecrops was the first mythical king. The third king, Pandion, and his daughters, Philomela and Procne, have also given their names to birds. In the above translation, Procne, to avenge her husband's lust and rape of her sister, had killed her son, Itys, boiled his flesh and sent it to her husband (Tereus) for his dinner; on learning what he had eaten, Tereus seized an axe, but before he could kill Procne, the gods turned her into a swallow. See <http://www.merriampark.com/horcardm412.htm>

Richard's Pipit *Anthus novaeseelandiae*

Richard's Pipit and Paddyfield Pipit should be treated as separate species (TSC3)

Richard's Pipit was formerly *A. novaeseelandiae* with several subspecies in four geographically separate groupings: the 'richardi' group of Siberia, Mongolia and China; the 'rufulus' group ('Paddyfield Pipit') of the Indian subcontinent and Southeast Asia; the *australis/novaeseelandiae* group of Australasia; and the *cinnamomeus* group in Africa. Genetically, Richard's Pipit *richardi* and Paddyfield Pipit *rufulus* are each other's closest relatives, but they diverged about 1.8 million years ago and are vocally consistently distinct, with *rufulus* having a faster, higher-pitched song and a distinctive 'chep' call that is very different from the typical loud 'schreep' of *richardi*. In addition, *rufulus* has a shorter tail than *richardi*, and the wing and tarsus measurements do not overlap, so they have been separated. Richard's Pipit is now *Anthus richardi* and Paddyfield Pipit becomes *A. rufulus*. The genetic evidence suggested that 'Grassland Pipit' *A. cinnamomeus* and 'Australian Pipit' *A. novaeseelandiae* are only distantly related to *richardi* and *rufulus*, and these first two are tentatively regarded, almost by default, as separate species. The identification and systematics of this group are discussed fully in Alström *et al.* (2003). Richard's Pipit is best regarded as monotypic.

Pied Wheatear *Oenanthe pleschanka*

Cyprus Pied Wheatear and Pied Wheatear have been split (TSC2)

Cyprus Pied Wheatear differs from nominate Pied Wheatear on the basis of plumage, biometrics, song, habitat, etc., and has widely been regarded as a separate species by most ornithologists for over 20 years. The two have now been split into two monotypic species, Pied Wheatear *Oe. pleschanka* and Cyprus Pied Wheatear *Oe. cypriaca*.

Acrocephalus and Hippolais Warblers

Eastern and Western Olivaceous Warblers should be treated as separate species; Booted and Sykes's Warblers should be treated as separate species; Reed Warbler has not been split (TSC1)

- **Reed Warbler** *A. scirpaceus* Eurasian Reed Warbler *A. s. scirpaceus*, 'Caspian Reed Warbler' *A. s. fuscus*, 'African Reed Warbler' *A. s. baeticatus* and the Red Sea taxon *A. s. avicenniae* are genetically closely related and it has not yet been possible to resolve their exact interrelationships. There are no diagnostic plumage differences, their songs are strikingly similar, and biometric differences (such as the shorter wing of *baeticatus*) may be related to ecological or migratory adaptations. Therefore, they remain lumped in one species, although this group is in serious need of reanalysis.



156. Red-rumped Swallow *Cecropis daurica*, Algarve, Portugal, March 1998. Red-rumped Swallow is now thought to be less closely related to Barn Swallow *Hirundo rustica* than previously assumed.

Ray Tipper

- **Paddyfield Warbler** *A. agricola* Genetically, the western subspecies *agricola* and *septimus* are nearly identical, and are morphologically almost indistinguishable, so *septimus* has been synonymised with *agricola*. The Eastern Palearctic taxon *tangorum* (Manchurian Reed Warbler), which has been regarded as a subspecies of Paddyfield Warbler, is both vocally and genetically distinct (7.5% at the *cytochrome-b* gene) and should be treated as a separate species *A. tangorum*. Black-browed Reed Warbler *A. bistrigiceps* has previously been regarded as conspecific with both *agricola* and *tangorum*, but is over 9.5% different from both.
- **Great Reed Warbler** *A. arundinaceus* and **Clamorous Reed Warbler** *A. stentoreus* Some taxa that were previously regarded as subspecies of one of these two species – Basra Reed Warbler *griseldis*, Oriental Reed Warbler *orientalis* and Australian Reed Warbler *australis* – are in fact genetically distinct, and are also diagnosable biometrically. These three are, therefore, better treated as separate species.
- **Cape Verde Warbler** *A. brevipennis* This is treated as a monotypic species, most closely related to Greater Swamp Warbler *A. rufescens* of Africa.
- **'Olivaceous warblers'** Western Olivaceous Warbler (previously *Hippolais pallida opaca*) differs from the five subspecies of Eastern Olivaceous Warbler *H. pallida* on the basis of plumage, song, biometrics (including bill shape) and behaviour (*opaca* does not habitually dip its tail). In northwest Africa, *opaca* comes into contact with Eastern Olivaceous Warblers of the race *reiseri* without apparent intergradation. The genetic differences between Eastern and Western Olivaceous Warblers are similar to those between Icterine *H. icterina* and Melodious Warblers *H. polyglotta*. Consequently, Western Olivaceous Warbler has been split as a monotypic species *H. opaca*, separate from Eastern Olivaceous Warbler *H. pallida* (polytypic, including subspecies *pallida*, *elaeica*, *alulensis*, *reiseri* and *laeneni* at least). Only *H. p. elaeica* has occurred in Britain.
- **Booted Warbler** *Hippolais caligata* Although previously regarded as a subspecies of Booted Warbler, Sykes's Warbler *rama* is partly sympatric with Booted and yet they appear not to hybridise, the two taxa prefer-

ring different habitats. They are also genetically distinct, and diagnosable with care on the basis of biometrics (with bill length and shape, and tail length being particularly critical), call and song. They are best treated as two monotypic species, *H. caligata* and *H. rama*. Identification is covered in Svensson (2001, 2003).

See Parkin *et al.* (2004) for a full explanation of these decisions.

Desert Warbler *Sylvia nana*

Asian Desert Warbler and African Desert Warbler have been split (TSC2)

The two geographically separate taxa of Desert Warblers, *nana* and *deserti*, are easily distinguishable on plumage. Most obviously, the greyish-brown upperparts of *nana* differ from the brighter, sandy upperparts of *deserti*. Their songs are also markedly different. These are two quite different warblers, and are probably reproductively isolated. Consequently, they have been split as two monotypic species, Asian Desert Warbler *Sylvia nana* and African Desert Warbler *S. deserti*.

Sylvia warblers

A new sequence of species listings within the genus Sylvia (TSC2)

A combination of genetic and morphological analyses has led to a new arrangement of *Sylvia* warblers on the basis of our understanding of their evolution. The new Western Palearctic sequence is as follows:

Blackcap *S. atricapilla*
 Garden Warbler *S. borin*
 Barred Warbler *S. nisoria*
 Lesser Whitethroat *S. curruca*
 Orphean Warbler *S. hortensis*
 Arabian Warbler *S. leucomelaena*
 Asian Desert Warbler *S. nana*
 African Desert Warbler *S. deserti*
 Common Whitethroat *S. communis*
 Spectacled Warbler *S. conspicillata*
 Tristram's Warbler *S. deserticola*
 Dartford Warbler *S. undata*
 Marmora's Warbler *S. sarda*
 Rüppell's Warbler *S. rueppelli*
 Cyprus Warbler *S. melanothorax*
 Subalpine Warbler *S. cantillans*
 Ménétries's Warbler *S. mystacea*
 Sardinian Warbler *S. melanocephala*

Greenish Warbler *Phylloscopus trochiloides*
 ‘Two-barred Greenish Warbler’ has not been split (TSC1)

As described previously in Collinson *et al.* (2003), Greenish Warbler has been shown to be a ring species. The subspecies *viridanus* and *plumbeitarsus* (‘Two-barred Greenish Warbler’), both of which have occurred in Britain, do not interbreed in their zone of overlap and therefore behave as separate species. However, they are linked by a smooth chain of interbreeding subspecies, *ludlowi*, *trochiloides* and *obscuratus*, around the southern edge of the Tibetan Plateau, which would suggest that they should be treated as a single polytypic species. Neither splitting them into two species, nor lumping them as one, describes the biological reality here, but the decision most consistent with the BOU’s Guidelines (Helbig *et al.* 2002) is to maintain the status quo and retain *plumbeitarsus* as a subspecies of Greenish Warbler *Ph. trochiloides*. Green Warbler *Ph. t. nitidus* has also been retained as a subspecies of Greenish Warbler, although a strong argument can be made that this taxon is fully diagnosable and it may merit specific status. Identification criteria for these taxa are outlined in van der Vliet *et al.* (2001).

Arctic Warbler *Phylloscopus borealis*

The subspecies talovka should be regarded as a synonym of borealis (TSC1)

British records were previously assumed to belong to the northwestern subspecies, *talovka*. This subspecies was not recognised by Williamson (1967) or several subsequent authors, and has now been synonymised with nominate *borealis*. British records are now all assigned to *Ph. b. borealis*.

Pallas’s Leaf Warbler *Phylloscopus proregulus*
Pallas’s Leaf Warbler has been split from the Chinese and Himalayan taxa with which it was previously lumped (TSC3).

Careful analysis of morphological, vocal and molecular differences among eastern *Phylloscopus* taxa has revealed that several species deserve recognition. For Pallas’s Leaf Warbler, the widespread Siberian subspecies, nominate *proregulus*, has now been shown to be significantly and diagnosably distinct from all similar Chinese and Himalayan taxa with which it has previously been regarded as conspecific: Chinese Leaf Warbler *yunnanensis*, Gansu Leaf

Warbler *kansuensis*, Sichuan Leaf Warbler *forresti*, Lemon-rumped Warbler *chloronotus* and Simla Leaf Warbler *simlaensis*. These warblers look fairly similar to each other, and some may not be identifiable on plumage alone. In contrast, their songs tend to differ greatly, they often fail to respond to playback of the songs of different taxa, and in some cases substantial genetic differences have been shown. Pallas’s Leaf Warbler is therefore now regarded as a monotypic species, separate from these other taxa, which may themselves be four or five species. Only *proregulus* has occurred in Britain, and the other species are unlikely vagrants to the Western Palearctic, but it is possible that they could be overlooked. It is probably unreasonable to expect that future descriptions of vagrant Pallas’s Leaf Warblers should attempt to eliminate the confusion species.

Iberian Chiffchaff *Phylloscopus brehmii*

The scientific name of Iberian Chiffchaff has been changed to Phylloscopus ibericus (TSC1)

Previously, the scientific name for Iberian Chiffchaff was *Phylloscopus brehmii*. However, the published description of *brehmii* was wrong for Iberian Chiffchaff, and the type specimen, when re-examined, turned out to be a Common Chiffchaff. A type specimen of Iberian Chiffchaff was first correctly described by Claude Ticehurst in 1937 as *Ph. ibericus*. A northern subspecies *Ph. i. biscayensis* has been described on the basis of very slight differences in wing length, which perhaps do not merit such recognition. The validity of this race has not formally been assessed by the BOURC TSC and, for now, *Ph. ibericus* should be treated as monotypic. Useful identification papers include Clement *et al.* (1998) and Richards (1999).

Tenerife Goldcrest *Regulus teneriffae*

Tenerife Goldcrest (Tenerife Kinglet), previously split by BB, is re-lumped with Goldcrest

British Birds previously split the Tenerife Goldcrest as *Regulus teneriffae*, separate from Goldcrest *R. regulus*. In fact, the genetic differentiation between *regulus* and *teneriffae* is quite small, and phylogenetic studies are more consistent with Tenerife Goldcrest being a subspecies of Goldcrest, albeit a well-marked one. The BOURC TSC has not published any decision on Goldcrests, and hence retains *teneriffae* within Goldcrest. The AERC TAC has not reached a consensus (AERC2). Goldcrest may in

future be split into more than one species but, until that happens, Tenerife Goldcrest is again treated as a subspecies of Goldcrest for the purposes of the *BB* Western Palearctic list.

Firecrest *Regulus ignicapilla madeirensis*

Madeira Firecrest should be treated as a separate species from Firecrest (TSC3)

Madeira Firecrest was previously regarded as a subspecies (*madeirensis*) of Firecrest *R. ignicapilla*. It has a longer bill, shorter supercilium and a duller orange crown, and has now been shown to be genetically distinct from Firecrest. Furthermore, it is vocally distinct, and mainland Firecrests do not react to playback of Madeira Firecrest songs, suggesting that they do not see them as being of the same species. In contrast, Firecrests of the subspecies *balearicus* are genetically close to nominate *ignicapilla*, and have very similar song structures. For these reasons, Madeira Firecrest is now treated as a separate species *R. madeirensis*, whereas *balearicus* remains as a subspecies of Firecrest.

Red-breasted Flycatcher *Ficedula parva*

Red-breasted and Taiga Flycatchers have been split (TSC2)

Red-breasted Flycatcher *F. parva* and Taiga Flycatcher *F. albicilla* were previously regarded as conspecific. There are well-defined plumage differences between the two, their calls and songs are different, and they show different moult progressions, with male Taiga Flycatcher attaining adult-like plumage in its first summer. They are also genetically distinct, in spite of the fact that their geographical ranges probably overlap. On the basis of this evidence, they should be treated as separate species, unlikely ever to merge. See also the identification pointers outlined in Cederroth *et al.* (1999) and Svensson *et al.* (2005).

Pied Flycatcher *Ficedula hypoleuca*

Atlas Flycatcher should be treated as a separate species from other 'black-and-white' Ficedula flycatchers (TSC2)

Genetic analysis has shown that three taxa of 'black-and-white' *Ficedula* flycatchers in Eurasia form three more or less equally distinct lineages which are now treated as separate species: Pied Flycatcher *F. hypoleuca*, Collared Flycatcher *F. albicollis*, and Atlas Flycatcher *F. speculigera*. Semi-collared Flycatcher *F. semitorquata* is slightly more distinct, but they all show divergences of 3–4% from each other. They show plumage distinctions from one other. Retention of Atlas Flycatcher as a subspecies of Pied Flycatcher, from which it differs as much as Collared Flycatcher does, was not justifiable on this basis. Iberian Pied Flycatcher *F. hypoleuca iberiae*, which resembles *speculigera* in some



Hugh Harrop

157. Crested Tit *Lophophanes cristatus*, Highland, winter. The genus *Parus* has been split up into several smaller genera, and Great Tit *P. major* remains the only 'true' *Parus* in Britain. The new generic name for Crested Tit, *Lophophanes*, means 'showing a crest'.

respects, is genetically close (0.5% divergence) to Pied, and is retained as a subspecies of Pied Flycatcher. Identification of Atlas Flycatcher and Iberian Pied Flycatcher is discussed in van den Berg & the Sound Approach (2006).

Tits (Paridae)

The genus *Parus* has been split into several smaller genera (TSC3)

Another genetic analysis has shown that *Parus*, one of the largest bird genera in the world, was paraphyletic, i.e. other accepted genera lay within it. Putting any of these other genera, e.g. *Sylviparus*, *Melanochlora* or *Pseudopodoces*, within *Parus* would make *Parus* even bigger and unacceptably diverse. Six genetic groups of tits have therefore been placed in their own genera: *Cyanistes* ('dark blue') for 'blue' tits, *Baeolophus* ('short-crested') for North American crested tits, *Lophophanes* ('showing a crest') for Palearctic crested tits, *Periparus* ('very much a *Parus*', perhaps better translated as 'nearest to a *Parus*!') for coal tits, *Poecile* ('spotted' or 'variegated') for chickadees and *Parus* for great tits. The order of species on the Western Palearctic list has also been changed to reflect this rearrangement:

Blue Tit *Cyanistes caeruleus*

Azure Tit *Cyanistes cyaneus*

Great Tit *Parus major*

Crested Tit *Lophophanes cristatus*

Coal Tit *Periparus ater*

Sombre Tit *Poecile lugubris*

Willow Tit *Poecile montanus*

Marsh Tit *Poecile palustris*

Siberian Tit *Poecile cinctus*

Carrion Crow *Corvus corone*

Carrion and Hooded Crows have been re-split (TSC1)

Carrion *C. corone* and Hooded Crows *C. cornix* are easily distinguishable on the basis of plumage, and there are slight differences in their calls too. Hooded Crow was previously regarded as a subspecies of Carrion Crow, and the two taxa commonly produce fertile hybrids. However, the hybrid zone is very narrow compared with the respective ranges (and potential dispersal distances) of the taxa involved. Data from Europe show that Hooded Crows tend to mate with Hooded, and Carrion with Carrion, within and close to the hybrid zone; and the two taxa may be further separated by slightly different habitat preferences. There is also evi-

dence that hybrids are less fit. Together, the data show that there is a long-term barrier to free gene flow between these distinct taxa and they are therefore best treated as two species, Carrion Crow *C. corone* and Hooded Crow *C. cornix*. See Parkin *et al.* (2003) for further explanation.

Isabelline Shrike *Lanius isabellinus*

Correction to scientific names of subspecies (TSC2)

Re-examination of the type specimen of Isabelline Shrike showed that it belonged to the Mongolian/Transbaikalian subspecies, previously called *speculigerus*. Hence *L. i. speculigerus* has been renamed *L. i. isabellinus* ('Daurian Shrike') and *speculigerus* falls out of use. A new name was therefore required for the Tarim Basin subspecies, previously called *isabellinus*, and the old name *arenarius* was available, which had been used previously for Tarim Basin shrikes wintering in India. 'Old' subspecies *isabellinus* has therefore been renamed *L. i. arenarius*. 'Turkestan Shrike' *L. i. phoenicuroides* remains unchanged. The status of the form *karelini*, currently included in *phoenicuroides*, needs further study. Identification of the subspecies of Isabelline Shrike was discussed in Worfolk (2000).

Lesser Grey Shrike *Lanius minor*

The subspecies turanicus is no longer recognised (TSC2)

The subspecies *L. m. turanicus* was previously described from Central Asia on the basis of its larger size and sandier, less grey upperparts. However, the size difference is negligible and differences in colour depend on the amount of wear and are too slight, even if they exist, to be a good taxonomic character. For these reasons, *turanicus* is no longer recognised and Lesser Grey Shrike is regarded as monotypic.

Citril Finch *Serinus citrinella*

Citril Finch and Corsican Finch should be treated as separate species (BOURC 2001; AERC1)

Corsican Finch *Serinus corsicanus* differs from Citril Finch *S. citrinella* in male plumage (it has a brighter yellow face and a brown, rather than yellow-green, mantle). It also has differences in song structure and a 'slow' song type that is not heard from Citril Finch, and there is significant genetic distinction between the two. Previously regarded as subspecies of a single species, they have now been split.

Common Redpoll *Carduelis flammea*

Common (or Mealy) Redpoll and Lesser Redpoll have been split (AERC1)

Redpoll taxonomy is complicated by variation within taxa that makes field identification such a problem. Nevertheless, the small, brown, British and west European taxon *cabaret* is distinguishable from all other redpolls on the basis of plumage and biometrics and, probably, vocalisations. Although no meaningful genetic differences have been detected, *cabaret* has been recorded breeding side by side with Common Redpolls *flammea* in Norway without hybridisation. Although the status of Icelandic and Greenland taxa, *islandica* and *rostrata* respectively, is uncertain, and even the relationship with Arctic Redpoll *C. hornemanni* is open to debate, there is enough here to justify the split of Lesser Redpoll *C. cabaret* from Common ('Mealy', Iceland and Greenland) Redpolls *C. flammea* (Knox *et al.* 2001).

This decision has generated much discussion and has been subject to widespread criticism, although it continues to be supported in most European countries. In particular, there have been recent reports of significant numbers of unidentifiable birds trapped by some ringers working in the Baltic area. Whether these are truly unidentifiable or just unidentified remains

to be resolved. Likewise, if these birds are intermediates or hybrids, as sometimes claimed, it is surprising that the area of interbreeding is as yet unreported; although Lesser and Common Redpoll are almost completely allopatric, the range boundaries of *cabaret* have been spreading east now for several decades and sympatry at some stage would not be unexpected. However, the proportion of unidentified birds implied in some of the reports suggests a substantial area of sympatry. This controversy is as yet based on information that is largely anecdotal and, on the basis of published information, Lesser and Common Redpoll are still best treated as separate species. All taxonomic decisions are hypotheses to be tested in light of new data and, in common with all other difficult systematic decisions, this one will be reassessed if significant new information becomes available.

Cirl Bunting *Emberiza cirulus*

Subspecies nigrostriata is no longer recognised (TSC1)

The more heavily streaked form *nigrostriata*, from Corsica and Sardinia, is poorly distinguished, if at all, and streaky birds occur elsewhere in the range. Thus, *nigrostriata* has been synonymised with nominate *cirulus*, leaving Cirl Bunting monotypic.



158. Arctic Redpoll *Carduelis hornemanni*, northern Finland, March. Arctic Redpoll is one of three species of redpoll breeding in western Europe, according to current conventions, although the redpolls as a group are arguably responsible for more splitting headaches among field birders than any other group covered here.

Corn Bunting *Miliaria calandra*

Genus Miliaria has been merged into Emberiza, at least until Emberiza can be properly reassessed (TSC2)

The genus *Emberiza* is relatively large, and is probably in a bit of a mess. Corn Bunting was previously placed in its own genus, *Miliaria*, but genetic evidence showed that it properly lies within the currently defined *Emberiza*. One possible solution to this is to divide *Emberiza* into more than one genus, but until more data are available, any attempt to do this would probably result in inaccuracies. For the time being, Corn Bunting has thus been placed in *Emberiza*, as *E. calandra*.

House Bunting *Emberiza sahari*

House Bunting and Striolated Bunting should be treated as separate species (AERC2)

The Middle Eastern taxon *striolata* exhibits slight but consistent differences in plumage and vocalisations, compared with House Buntings in North Africa, and has therefore been split as Striolated Bunting (Mountain Bunting) *E. striolata*.

Blue Grosbeak *Guiraca caerulea*

Blue Grosbeak has been placed in Passerina (TSC2)

Blue Grosbeak was previously placed in *Guiraca*, but mitochondrial genetic evidence showed that it was most closely related to Lazuli Bunting *Passerina amoena*. Blue Grosbeak therefore lies within *Passerina*, and its scientific name has been changed to *P. caerulea*. Blue Grosbeak resides in Category D of the British List, and all Western Palearctic records are of doubtful origin.

2. Higher-order sequence changes

The Galloanserae (wildfowl and gamebirds) have been moved towards the beginning of the Western Palearctic list, after Ostrich (TSC1)

The order in which birds are listed is meant to reflect their evolutionary history. Conventionally, the most 'primitive' birds are listed first, and those families which are most closely related should be placed together. Previously, the order of the Western Palearctic list was based on the 'Voous List' (Voous 1977). Upwards of 100 phylogenetic studies of bird families, many using DNA analysis, have been published in recent years and together these comprise a large body of evidence showing that

the Voous Order does not properly reflect our modern understanding of avian evolution. Over 30 of these studies, both morphological and DNA-based, agree on one particular point, the position of the Galloanserae, and suggest that they should be brought together near the start of the list, as one of the earliest groups of birds to evolve. The most likely hypotheses for bird evolution have the following key characters:

- 1 the deepest branch point in the evolutionary tree of birds splits them into the Palaeognathae (tinamous and 'ratites') and the Neognathae (all other birds);
- 2 within the Neognathae, the deepest branch point splits them into Galloanserae (see below) and Neoaves (all remaining birds);
- 3 the Galloanserae are split into two 'sister' groups – Anseriformes (waterfowl) and Galliformes (turkeys, guineafowl, megapodes, grouse, pheasants, etc.).

Because there are fewer species within the Palaeognathae than in the Neognathae, it is conventional to place Palaeognathae first; hence, in a Western Palearctic context, Ostrich *Struthio camelus* is the first on the list. Next, within the Neognathae, there are fewer Galloanserae than Neoaves, and within the Galloanserae there are fewer Anseriformes than Galliformes. Hence, after Ostrich, the Anatidae (swans, ducks and geese) are listed next, followed by Tetraonidae, Phasianidae and Numididae (grouse, pheasants, quail, snowcocks, francolins, partridges and guineafowl), followed by all remaining families as in the existing sequence.

It is likely that many other sequence changes could be proposed in the next 5–10 years, and there may be a conflict between the taxonomist's desire for scientific accuracy and the public's desire for some stability and predictability in the order of bird lists in field guides and journals. Walter Bock, in the foreword to Volume 2 of the *Handbook of the Birds of the World* (del Hoyo *et al.* 1994), drew a distinction between *systematic classifications*, which are the result of professional taxonomy, and *standard sequences*, which are a tool of convenience for the easy accessibility of information in books and databases. Standard sequences are based on scientific classifications, but Bock argues that while classifications must be updated constantly on the basis of new research, standard sequences should be stable. This point of view has a superficial appeal and

may turn out to be very popular, but there are credible alternative viewpoints. In particular, there is no existing mechanism for the development and maintenance of a British or Western Palearctic systematic classification separate from a British or Western Palearctic standard sequence. The two are effectively one at the moment. However, changes to systematic classifications or standard sequences should be made only when changes have been widely accepted. The overwhelming body of evidence supporting the repositioning of the Galloanserae has been widely accepted, and this particular change fulfils the criterion to justify a general change to the sequence of the Western Palearctic list.

3. Grammatical changes in scientific names

The following minor changes to the scientific names of birds on the Western Palearctic list have been adopted in line with the requirements for the construction of names as laid down in the International Code of Zoological Nomenclature (TSC2, AERC2)

Egyptian Goose *Alopochen aegyptiaca*
 Red (Willow) Grouse *Lagopus lagopus scotica*
 Ptarmigan *Lagopus muta*
 Small Button-quail *Turnix sylvaticus*
 Striated Heron *Butorides striata*
 Spotted Sandpiper *Actitis macularius*
 Grey Phalarope *Phalaropus fulicarius* (no change required to the British List)
 Whiskered Tern *Chlidonias hybrida*
 Pin-tailed Sandgrouse *Pterocles alchata*
 Chestnut-headed Sparrow-lark *Eremopterix signatus*
 Bar-tailed Desert Lark *Ammomanes cinctura*
 House Martin *Delichon urbicum*
 Gldenstdt's Redstart *Phoenicurus erythrogastus*
 Eversmann's Redstart *Phoenicurus erythronotus*
 Common Stonechat *Saxicola torquatus* (also subspecies *S. t. maurus*, *S. t. armenicus* and *S. t. variegatus*)
 Firecrest *Regulus ignicapilla*
 Common Babbler *Turdoides caudata*
 Fulvous Babbler *Turdoides fulva*
 Black-crowned Tchagra *Tchagra senegalus*
 Crimson-winged Finch *Rhodopechys sanguineus*
 Ovenbird *Seiurus aurocapilla*
 Pine Bunting *Emberiza leucocephalos*

Discussion

Under the Species Guidelines employed by the

TSC (Helbig *et al.* 2002), two taxa are usually recognised as different species if a) we can reliably tell them apart (the diagnosability criterion) and b) we can judge that they cannot or will not merge through hybridisation on an evolutionary timescale. In the 1970s and 1980s, it seemed as though Western Palearctic taxonomy was deeply asleep, with a perception that all the important work had been done. A large amount of taxonomic change is now ongoing – has the process gone too far the other way? It is often said that taxonomy goes in cycles; the post-Linnean/Victorian discovery and description of large numbers of species; the grouping of these into fewer polytypic species in the late 1800s and early 1900s; the consolidation and description of many new subspecies in the early to mid twentieth century; and now a clear move to re-establish many of the subspecies as full species again.

In order to address this perception of cyclical change, it is necessary to consider the factors driving systematic science, and while enormous advances have been made in the study of morphology, acoustics and ethology, the recurring theme is genetics. As described previously (Maclean *et al.* 2005), we are currently a long way from being able to use DNA to determine unequivocally where species boundaries among bird taxa lie, but DNA provides much information on the evolutionary history and reproductive behaviour of bird taxa that was not available prior to about 1980. So the current wave of splitting is not just based on fashion – there is a substantial body of new information, from molecular genetic and other sources, that allows us to determine which taxa are breeding, or not, with which other taxa, and in some cases how long they have been isolated. These data have contributed to the elucidation of previously unsuspected barriers to gene flow consistent with *biological* speciation, examples being the separation of Western Olivaceous Warbler and Eastern Olivaceous Warblers, and Booted Warbler and Sykes's Warbler. Of course, if future research determines that we are misinterpreting, or overinterpreting, the data from mtDNA studies, then the 'cycle' may begin again, but there is little point worrying about that until it happens.

In general, birders and ornithologists cope quite well with multiple species splits; what really cause trouble are changes to generic names and changes in the order of species in

lists. Again, the changes described above are based substantially on genetic data, but often with the aim of sticking to the modern systematic convention of maintaining monophyly for taxonomic groups. Monophyly is discussed in Maclean *et al.* (2005) but essentially means that we want taxonomic groupings to be traceable to a single ancestral taxon, and to contain all the descendants of that ancestor. This seems to work quite well in imposing order on systematics, but may not be concordant with the irregular pathways of evolutionary change, driven by the environment. This is not the place to discuss whether the convention of maintaining monophyly is anti-scientific, but it should perhaps be kept under discussion. For example, while changes to the genera of swallows and tits are undoubtedly the right thing to do on the basis of the evidence available, how defensible is it to tinker with the eagles, expanding *Aquila* on the basis of maintaining monophyly, to produce a taxonomy that may not be permanent? The debate on the merits of stability has a long way to go, but clearly these are very exciting and positive times in the field of systematics.

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Appendix 1. Genus- and species-level taxonomic changes not mentioned elsewhere adopted by the BOU or British Birds between 1977 [publication of Voous (1977)] and 2000.

Some of these changes were adopted on a European basis only on the publication of Sangster *et al.* (2002a) or even AERC (2003) (AERC1 and AERC2), and for these a line of explanation is given. English and scientific names given in the headings of this appendix are the ones in current usage, unless indicated otherwise by the use of quotation marks.

Bean Goose *Anser fabalis* The BOU recommended in 1980 that the Pink-footed Goose *A. brachyrhynchus* should be treated as a separate species from the Bean Goose, in line with the Voous List (BOU 1980).

Hooded Merganser *Lophodytes cucullatus* Moved from *Mergus* to *Lophodytes* (BOU 1997).

Smew *Mergellus albellus* Moved from *Mergus* into its own genus, *Mergellus* (BOU 1997).

Soft-plumaged Petrel *Pterodroma mollis* Fea's Petrel *Pterodroma feae* (including *P. f. deserta*) and Zino's Petrel *P. madeira* are now treated as separate species from the extralimital Soft-plumaged Petrel *P. mollis* (BOU 1992; AERC1). Genetic data show that *P. mollis* is not closely related to the other two, and that even Fea's and Zino's Petrels diverged up to 1 million years ago. The species differ biometrically and have different vocalisations and reproductive cycles.

Gannets *Morus* The three species of gannet, previously all placed in *Sula*, are now in the genus *Morus* (BOU 1991; AERC2). Extralimital

Abbott's Booby becomes *Papasula abbotti*, and *Sula* is reserved for all other boobies. The species on the British List is *Morus bassanus*.

'Green Heron' *Butorides striata* North American taxa of Green-backed Heron *Butorides virescens* have been split from the cosmopolitan Striated Heron *B. striata* (BOU 1993; AERC2). Only the former is on the British list.

Great White Egret *Ardea alba* Moved from *Egretta* to *Ardea* (BOU 1997).

Steppe Eagle *Aquila nipalensis* Steppe *A. nipalensis* and Tawny Eagle *A. rapax* are allopatric taxa that differ greatly in many aspects of their plumage, anatomy, moult, ecology and behaviour that are inconsistent with maintaining them in a single species. Steppe Eagle *Aquila nipalensis* and Tawny Eagle *A. rapax* are now therefore regarded as specifically distinct (AERC1).

'Imperial Eagle' *Aquila heliaca* Both adults and immatures of the two forms, *heliaca* and *adalberti*, show plumage differences, and these two taxa are as distinct from each other as are Greater *A. clanga* and Lesser Spotted Eagles *A. pomarina*, with important chromosomal differences as well. There is no evidence of any recent gene flow, and they have been split as two monotypic species, Eastern Imperial Eagle *A. heliaca* and Spanish Imperial Eagle *A. adalberti* (AERC1).

'Lesser Golden Plover' *Pluvialis fulva* This has been split into two species, American Golden Plover *Pluvialis dominica* and Pacific Golden Plover *P. fulva*, which are identifiable on the basis of plumage, vocalisations, moult cycles and biometrics, and which do not interbreed in

the areas where their ranges overlap (BOU 1986; Knox 1987; AERC1).

Lapwings *Vanellus* The genus *Chettusia* has been merged with *Vanellus*, hence Sociable Lapwing is now *Vanellus gregarius* and White-tailed Lapwing is now *Vanellus leucurus* (BOU 1997).

Thayer's Gull *Larus glaucooides thayeri* Thayer's Gull should be treated as a subspecies of Iceland Gull *L. glaucooides* (BOU 1991).

Water Pipit *Anthus spinoletta* Rock Pipit *Anthus petrosus*, Water Pipit *A. spinoletta* and Buff-bellied Pipit *A. rubescens* have been split (BOU 1986; Knox 1988; AERC1). They all differ in plumage, vocalisations, behaviour and habitat. The breeding ranges of Water and Buff-bellied Pipits meet in Central Asia, but hybridisation does not occur.

Grey-cheeked Thrush *Catharus minimus* Grey-cheeked Thrush *Catharus minimus* and Bicknell's Thrush *C. bicknelli* are now treated as separate species (Knox 1996; BOU 1997).

Yellow-browed Warbler *Phylloscopus inornatus* Yellow-browed Warbler *Phylloscopus inornatus* and Hume's Warbler *Ph. humei*, from Central Asia and the northwest Himalayas, are now treated as separate species (BOU 1997; AERC1). They coexist in the West Sayan mountains, where they do not respond to each other's songs and calls, which ensures that little, if any, hybridisation occurs. They differ subtly in plumage and bare-part coloration, and are genetically distinct. The allopatric taxon *mandellii* is retained as a subspecies of Hume's Warbler.

'Bonelli's Warbler' *Phylloscopus bonelli* Western Bonelli's Warbler *Phylloscopus bonelli* and Eastern Bonelli's Warbler *Ph. orientalis* are now treated as separate species (BOU 1997; AERC 1). Genetically, they differ from each other almost as much as either does from Wood Warbler *Ph. sibilatrix* (a phenomenal 8.5% at the mtDNA level), and their calls are completely different. Plumage differences are subtle, but some birds may be identifiable on the basis of plumage and moult.

'Chiffchaff' *Phylloscopus collybita* Common Chiffchaff *Phylloscopus collybita* (including Siberian Chiffchaff *Ph. c. tristis*), Iberian Chiffchaff *Ph. ibericus*, Canary Island Chiffchaff *Ph. canariensis* and Mountain Chiffchaff *Ph. sindianus* are now treated as separate species (BOURC 1999; AERC1). All four are diagnosable on the basis of distinct differences in song, plumage and mtDNA. There is a narrow hybrid zone where the ranges of Common and Iberian Chiffchaffs meet, which has been shown to mark a barrier to gene flow. Similarly, Mountain and Common Chiffchaffs overlap with little, if any, hybridisation.

Great Grey Shrike *Lanius excubitor* Great Grey Shrike *Lanius excubitor* and Southern Grey Shrike *L. meridionalis* have been split on the basis of plumage and habitat differences, and a lack of hybridisation when their ranges meet. 'Steppe Grey Shrike' *L. m. pallidirostris* is retained as a subspecies of Southern Grey Shrike (BOU 1997; AERC1).

Common Crossbill *Loxia curvirostra* The BOU recommended in 1980 that the Scottish Crossbill *L. scotica* should be treated as a separate species from the Common Crossbill, in line with the Voous List (BOU 1980).

'Rufous-sided Towhee' *Pipilo erythrophthalmus* Eastern Towhee *Pipilo erythrophthalmus* and Spotted Towhee *P. maculatus* are now treated as separate species (BOU 1997).

Savannah Sparrow *Passercula sandwichensis* Moved from *Ammodramus* to become *Passercula sandwichensis* (BOU 1997).

Fox Sparrow *Passerella iliaca* Moved from *Zonotrichia* to become *Passerella iliaca* (BOU 1997).

Song Sparrow *Melospiza melodia* Moved from *Zonotrichia* to become *Melospiza melodia* (BOU 1997).

'Northern Oriole' *Icterus galbula* Baltimore Oriole *Icterus galbula*, Bullock's Oriole *I. bullockii* and Black-backed Oriole *I. abeillei* are now treated as separate species (BOU 1997).