SPECIAL REPORT

Forty years of birding and ornithological research in Singapore

Y. C. WEE

Introduction

Singapore, a small island-state of 682.7 sq km with a population of 4.2 million people, has just celebrated its 40th year of independence from the British. Most of its original vegetation disappeared within a century of the establishment of a trading post by the British East India Company in 1819 (Corlett 1997). Currently, less than 3% of the total land area is protected as nature reserves. We still have a small piece of semi-pristine rainforest at Bukit Timah and a larger piece of old secondary forest, the latter maintained as a water catchment area (Wee and Corlett 1986). Wetlands exist in the forms of small pockets of degraded mangroves and the edges of freshwater reservoirs. However, we have recently set aside a piece of degraded mangrove area as a wetland reserve.

Nearly five decades of aggressive tree planting has greened up the built-up areas. Now all roads are lined with trees and wastelands have been converted into parks and gardens. The country is a virtual Garden City and the urban bird population has increased tremendously. Birds like the Oriental Magpie Robin *Copsychus saularis*, once thought to be highly endangered, are now a common sight in urban neighbourhoods. The Oriental Pied Hornbill *Anthracoceros albirostris*, once thought to be extinct, has now returned and is commonly seen in urban gardens.

Bird watching is very slowly gaining popularity among the local population. The current estimate is that there are only about a hundred serious birders, although another hundred may occasionally be involved in the activity. It is telling that in a multilingual Singapore, there is nothing or next-to-nothing published on birds or matters of nature in Malay and Tamil. As for Chinese, it was only in 2003 that a small publication on birds became available. The expatriate western community is more into the pursuit and there is a continuous flow of eco-tourists who visit the country to enjoy our avian delights.

Ornithological publications during the colonial era

Knowledge of the birds of the region developed during the colonial years. The Raffles Museum was set up in the 1880s and a series of biologists were seconded from Britain to man this institution. Ornithology was one discipline that benefited as the museum and its affiliates made extensive collections throughout the region. Of the many papers and books that were published on birds, the monumental five-volume Birds of the Malay Peninsula, initiated by H. C. Robinson, is still consulted as a standard reference today. Appointed as Curator of the Selangor Museum in Malaya (now Peninsular Malaysia) in 1903, Robinson's exposure to the region allowed him to embark on this work upon his retirement. He managed to complete only two volumes (Robinson, 1927, 1928) before he died. The remaining volumes were completed many years later (Robinson and Chasen 1936, Chasen 1939, Medway and Wells 1976). Other interesting books include those by Bucknill and Chasen (1927), Madoc (1947) and Glenister (1951). The only substantial publication on nesting habits is that by Spittle (1949). For a more detailed account of the early publications, the reader is referred to Wells (1999) and Wang and Hails (in press).

Post-colonial ornithological research and publications

With independence, Raffles Museum slowly moved its emphasis from nature to culture. The Zoology Department of the then University of Malaya in Singapore (now National University of Singapore) paid scant attention to ornithology except for a short period when Peter Ward was a member of the staff (Ward 1968, 1969). Subsequently the department changed its emphasis to marine ecology and ornithology was put on the back burner (Chuang 1973, Johnson 1973). However, in the late 1980s and early 1990s there were some activities on birds of economic importance (Kang *et al.* 1990, Kang 1992; Councilman *et al.* 1994). The current emphasis is molecular biology.

The greening of the city was beginning to make an impact during the post-colonial period and the Singapore Botanic Gardens shifted its emphasis from taxonomic activities to horticulture. The urban forest needed to come alive with wildlife and in this respect Prof. G. M. Dunnet of the University of Aberdeen, Scotland was invited over to advice on ways to improve the bird population in urban areas. Chris Hails, then resident ornithologist with the Parks and Recreation Department (now National Parks Board, which has incorporated the Botanic Gardens), was tasked to carry out the

recommendations (Hails, 1985). In this he was assisted by feedback from stalwart birdwatchers of the Malayan Nature Society: H. Buck, D. Bradford, R. Ollington, C. Briffett and J. Sigurdsson.

In 1987 Hails & Jarvis published Birds of Singapore, a major book on birds in post-colonial Singapore. This book gave the needed boost to local bird watching, which in turn encouraged the publication of books on birds in general (Chew 1989, Lim 1992) and a slew of bird guides (Briffett 1986, Briffett and Sutari 1993, Lim 1997, Strange 2000, Strange and Jeyarajasingam 1993). The latest addition is the first volume of Wells' (1999) Birds of the Thai-Malay Peninsula on non-passerines. The second volume on passerines is expected to appear during 2006.

Birders are also eagerly awaiting the publication of an annotated checklist of the birds of Singapore that is scheduled to be out this year (Wang and Hails in press). This will update the status of birds from the 19th century to 2003.

The Malayan Nature Society

The Malayan Nature Society (MNS), formed during the colonial years, operated in Singapore as a branch. Birding activities fluctuated, depending on the enthusiasm of members. In the 1960s and 1970s a loose group led by Ng Soon Chye conducted bird-ringing studies in Singapore and nearby Johor. Activities ended when Ng entered medical school. Unfortunately the voluminous data collected has never been published (Wang and Hails in press).

In 1984 a Bird Group was formerly constituted within the Singapore Branch of the MNS Led by Clive Briffett as Chairman, it had Sandra Sabapathy as Secretary and Chris Hails as Recorder. With this dynamic team in place, the next few years proved productive. Activities like the annual bird race, water bird census and bird count were introduced. An updated checklist of birds was then published, replacing the outdated checklist by Gibson-Hill (1950).

It was during this period that a proposal was submitted to government to conserve an area of degraded mangroves at Sungei Buloh as a bird sanctuary (Hale *et al*. 1987). The proposal was accepted and with the help of Jonathan Smith, seconded from The Wildfowl Trust at Slimbridge, England, the area was eventually transformed into the Sungei Buloh Nature Park (Briffett 2004, Hale 2004).

In 1987 a monthly limited edition, Singapore Avifauna, was started by Lim Kim Seng to record bird sightings, nesting reports and articles on bird breeding and behaviour. Membership of the society increased and awareness of birds was raised among members.

Nature Society (Singapore)

In 1990 the Singapore Branch of the MNS became an independent Nature Society (Singapore) (NSS). At the same time the Bird Group committee was revamped and leadership was turned over to Lim Kim Keang, an enthusiastic local birder. Lim faithfully continued the activities set in place by Briffett. These same activities are being run and popularly attended today.

During the early 1990s many of the more experienced birders moved out of the group to seek challenging activities elsewhere. These birders were regular contributors to the Singapore Avifauna and as a consequence the publication was reduced to quarterly issues. In some years there were no issues at all. The publication concentrated on sightings and activity reports, with a few feature articles thrown in. After many years of irregular issues it has finally caught up with the backlog. Another casualty was the Iora, an annual publication that was supposed to consolidate the year's sightings and to summarise past activities. The inaugural 1994 issue came to press in 1998 and to date this is the one and only issue.

Whatever its deficiencies, the Singapore Avifauna proved to be of value to ornithologists researching the birds of Singapore. Indeed, in the preamble to his 1999 book, Wells paid tribute to the contributions of amateur birdwatchers that matched those of the professionals. In fact his work made more than 250 citations covering 140 species of birds from the Singapore Avifauna. What is surprising though is that 88% of these sightings came from the 1987–1990 issues. The remaining 12% were from 1991–1995 issues. According to Wells (pers. comm.) the problem lies with the difficulty of keeping up to date with events in Singapore after 1990. Apparently he had difficulties in obtaining copies of the publication. A similar bias is expected in his Vol. II on passerines.

In the meantime the society published its own quarterly, Nature Watch. In its 12 years of publication, this colour magazine attracted its share of articles on birds. It is interesting to note that most of the articles on bird behaviour were contributed by nature photographers (Guy 2000; Lin 2003; Ong 1996, 1999, 2000; Peters 1999; Poon 1998, 2000, 2004; Wee 2005), rather than experienced bird watchers (Lim 2002, Sutari 2000).

The current situation

In 2002 the Sungei Buloh Nature Park was given legal protection and re-designated Sungei Buloh Wetland Reserve (Anon. 2003). The area is recognized as an important site for migratory shorebirds and is now part of the East Asian Australasian Shorebird Site Network. At the

Department of Biological Sciences, National University of Singapore, the emphasis is still on pest birds like crows and mynas (Huong and Sodhi 1997, Peh and Sodhi 2002, Yap and Sodhi 2004). The forthcoming book by Sodhi and Sharp (in press) with a comprehensive list of recent publications by the university is testimony to this.

It has long been acknowledged that information on behaviour, breeding and food source, not only for birds but also other animals, is generally lacking. Effective nature conservation measures need to be supported by in-depth knowledge of the interaction between all kinds of living organisms. It is therefore hoped that support can be generated within the Nature Society for greater attention to be paid to this aspect of nature. With this in mind another bird group, the Bird Ecology Study Group, was formed in September 2005 to spearhead the studies of bird-plant relationships, of course not forgetting the roles of the other faunal groups.

Acknowledgements

I would like to acknowledge the help given by Wang Luan Keng, Margie Hall and Clive Briffett as well as the helpful discussions with R. Subharaj, Morten Strange, Ng Bee Choo and many others too numerous to mention. Richard Hale read through the manuscript and suggested changes.

References

Anon. (2003). *Sungei Buloh Wetland Reserve – A decade of wetland conservation*. Singapore: National Parks Board.

Briffett, C. (1986) *A guide to the common birds of Singapore*. Singapore Science Centre.

Briffett, C. (2004). The genesis of Sungei Buloh. *Nature Watch* 12(1): 5–9.

Briffett, C. & Sutari, S. (1993) *The birds of Singapore*. Kuala Lumpur: Oxford University Press.

Bucknill, J. A. S. & Chasen, F. N. (1927) *Birds of Singapore and South-east Asia*. Thornhill: Tynron Press.

Chasen, F. N. (1939) *The birds of the Malay Peninsular. Vol. IV: The birds of the low-country jungle and scrub*. London: H. F. & G. Whiterby.

Chew, Y. F. (1989) *Wild birds of Singapore – The migratory season*. Singapore: Koh Pu Lin Associates.

Chuang, S. H. ed. (1973) *Animal life and nature in Singapore*. Singapore University Press.

Corlett, R. T. (1997) ['The vegetation in the nature reserves of Singapore.'] Pp. 147–159 in L. Chan and Corlett, R. T. eds. Biodiversity in the nature reserves of Singapore. *Gardens Bulletin*, Singapore 49.

Counsilman, J. J., Kang, N., Ahmad, K. J. & Wang, L .K. (1994). Discriminant analysis of morphometric characters as a means of sexing mynas. *Journal of Field Ornithology* 65:1–7.

Gibson-Hill, C.A. (1950) A checklist of the birds on Singapore island. *Bullletin of the Raffles Museum* 21:132–183.

Glenister, A.G. (1951) *The birds of the Malay Peninsula and Penang*. London: Oxford Univsrsity Press.

Guy, G. (2002) Sunbirds of Singapore. *Nature Watch* 10(4):2–9.

Hails, C. J. (1985) Studies of the habitat requirements and management of wild birds in Singapore. Report submitted to Commissioner of Parks & Recreation, Ministry of National Development, Singapore.

Hails, C. & Jarvis, F. (1987) *Birds of Singapore*. Times Editions, Singapore.

Hale, R. (2004). From backwater to nature reserve. *Nature Watch*. 12(1):2–4.

Hale, R., Subharaj, S., Ngim, R., Ho, H.C., Briffett, C. & Hails, C. (1987). *A proposal for a nature conservation area at Sungei Buloh*. Malayan Nature Society (Singapore).

Huong, S. L. & Sodhi, N. S. (1997) Status of the Oriental Magpie Robin Copsychus saularis in Singapore. *Malayan Nature Journal* 50: 347–354.

Johnson, D. S. (1973) ['Bird life'.] Pp. 85–100 in S.H. Chuang ed. Animal and nature in Singapore. Singapore University Press.

Kang, N. (1992) ['Radiotelemetry in an urban environment: A study of mynas (Acridotheres spp.) in Singapore.'] Pp. 633–641 in I.M. Priede and Swift, S.M. eds. Wildlife telemetry, remote monitoring and tracking animals. Ellis Horwood, Chichester, UK.

Kang, N., Sigurdsson, J. B. & Hails, C. J. (1990) Nest construction and egg laying in edible-nest swiflets Aerodramus spp. and the implication for harvesting. *Sarawak Museum Journal* 133:170–177.

Lim, K. C. (2002) Nesting of the rufous-backed kingfisher. *Nature Watch* 10(3):2–8.

Lim, K. S. (1992) *Vanishing birds of Singapore*. Nature Society (Singapore).

Lim, K. S. (1997) *Birds – An illustrated field guide to the birds of Singapore.* Singapore: Sun Tree.

Lin, J.-M. (2003) The bird which practices equality of the sexes. *Nature Watch* 11(4):23.

Madoc, G. C. (1947) An introduction to Malayan birds. *Malayan Nature Journal* 2:1–123.

Medway, L. & Wells, D. R. (1976) *The birds of the Malay Peninsular. Vol. V: Conclusion and survey of every species*. London: H. F. & G. Whiterby and Kuala Lumpur: Penerbit Universiti Malaya.

Ong, K. S. (1996) Love and parenting the coppersmith way. *Nature Watch* 4(4):4–7.

Ong, K. S. (1999) The hen-pecked spouse of our smallest woodpecker. *Nature Watch* 7(2):18–20.

Peh, K. S. H. & Sodhi, N. S. (2002) Characteristics of nocturnal roosts of House Crows in Singapore. *Journal of Wildlife Management* 66: 1128–1133.

Peters, W. W. K. (1999) Close encounter with nightjar and chicks. *Nature Watch* 7(1):9

Poon, R. (1998) Watching expectant ioras build their nest. *Nature Watch* 6(1):16–17.

Poon, R. (2004) A strange thing happened to a common iora's nest. *Nature Watch* 12(2):10–11.

Robinson, H. C. (1927) *The birds of the Malay Peninsular. Vol. I: The commoner birds*. London: H. F. & G. Whiterby.

Robinson, H. C. (1928) *The birds of the Malay Peninsular. Vol. II: The birds of the hill stations*. London: H. F. & G. Whiterby.

Robinson, H. C. & Chasen, F. N. (1936) *The birds of the Malay Peninsular. Vol. III: Sporting birds; birds of the seashore and esturaies*. London: H. F. & G. Whiterby.

Sodhi, N. S. & Sharp, I. (in press) *Winged invaders: Pest birds in the Asia Pacific*. Singapore: SNP Reference.

Spittle, R. J. (1949). Nesting habits of some Singapore birds. *Bulletin of the Raffles Museum* 21:184–204.

Strange, M. (2000) *A photographic guide to the birds of Malaysia and Singapore*. Hong Kong: Periplus Editions.

Strange, M. & Jeyarajasingam, A. (1993) *A photographic guide to the birds of Peninsular Malaysia and Singapore*. Singapore: Sun Tree Publication.

Sutari, S. (2000) Return of the plain-pouched hornbill. *Nature Watch* 8(3):15–18.

Wang, L. K. & Hails, C. (in press) *The annotated checklist of birds of Singapore*. London: British Ornithological Union.

Ward, P. (1986) Origin of the avifauna of urban and suburban Singapore. *Ibis* 110:239–54.

Ward, P. (1969) The annual cycle of the yellow-vented bulbul, *Pycnonotus goiavier*, in a humid equatorial environment. *Journal of Zoology*, London 157:25–45.

Wee, Y. C. (2005) Look, what came out of the crow's nests. *Nature Watch* 13(1): 22–25

Wee, Y. C. & Corlett, R. (1986) *The city and the forest: Plant life in urban Singapore*. Singapore University Press.

Wells, D. R. (1999) T*he birds of the Thai-Malay Peninsular. Vol. I, Non-passerines*. London: Academic Press.

Yap, C. A. M. & Sodhi, N. S. (2004) Southeast Asian invasive birds: ecology, impact and management. *Ornithological Science* 3: 57–67.

Y. C. Wee
Bird Ecology Study Group
Nature Society (Singapore)
c/o 39 Sian Tuan Avenue
Singapore 588313
Republic of Singapore

SPECIAL REPORT

The bird trade in Medan, North Sumatra: an overview

CHRIS R. SHEPHERD

Introduction

Trade is a serious threat to the conservation of numerous species of birds in Indonesia. Keeping birds as pets in Indonesia is a very popular and widespread hobby (Shepherd *et al.*, 2004; Jepson and Ladle, 2005). While some of the birds are intended for international export, the bulk of the trade supplies local demand. This trade involves large volumes of birds, with the vast majority of them being wild-caught (Shepherd *et al.*, 2004). Virtually all towns and cities in Indonesia have bird markets and very little is done to regulate or monitor the trade and to ensure it is both legal and sustainable. Most bird species are traded for pets, while a few species are traded for food, and to a far lesser extent, for medicinal and folk magic purposes.

Indonesia has committed to the conservation of its wildlife through national and international legislation and is a signatory to the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES). However, despite being a party to CITES and having good national wildlife protection laws, illegal trade continues to flourish, openly throughout the country.

A study was carried out by the South-east Asia office of TRAFFIC, the wildlife trade monitoring network of WWF and IUCN, to survey three bird markets in the city of Medan, the provincial capital of North Sumatra, Indonesia (*Open Season: An analysis of the pet trade in Medan, Sumatra 1997–2001*). The main objectives of this study were to document the species in trade, the number of species being traded that were protected by law and to determine trade routes and other relevant market dynamics. The three markets were chosen because huge volumes of birds passed through these markets, many of them threatened and legally protected species.

Methods

Surveys of the three bird markets in Medan (Jalan Bintang, Petisah and Sembahe), which totaled more than 50 individual stalls selling birds, were carried out on a monthly basis between 1997 and 2001. A spot-check on the markets was also carried out in December 2005.

Building a relationship with dealers in the bird markets was a key element of the surveys' success. Dealers offered valuable information through numerous informal interviews and conversations which took place during the repeated visits made to the markets.

During these surveys, all species observed and the quantities of each species were recorded.

Estimates of the quantities of species that were very common and numerous, and legally unprotected, were made. Accurate counts of all other species were made. Species identification was made on the basis of personal knowledge and with reference to field guides. Photographs were taken whenever possible to assist in identification. A total of 16 avian species that could not be identified at least to a genus level were omitted from the analysis of the trade in these markets.

Legislation

Indonesia has been Party to CITES since 1978, (which entered into force in March 1979). National legislation allows native species listed on Appendix II and III of CITES, as well as non-CITES species that are not fully protected by national law (CITES-listed species are not necessarily protected by national legislation in Indonesia, while some non-CITES-listed species are fully protected), to be traded, following a harvest and export quota system. Of the entire harvest quota, only 10% may be for domestic trade, whether protected by national legislation or not. The bulk of the numbers harvested are for export.

The quotas are set on an annual basis for all species at a meeting of various stakeholders including the Directorate General of Forest Protection and Nature Conservation (PHKA—the CITES Management Authority), and the Indonesian Institute of Sciences (LIPI—the CITES Scientific Authority), non-government conservation organizations and licensed wildlife traders. These quotas are reported by PHKA to the CITES Secretariat at the beginning of each year. CITES requires sustainability assessments, known as "non-detriment findings" to be carried out by the authorities themselves or in collaboration with conservation organisations for CITES-listed species in trade, however, such studies are not being carried out prior to the quotas being set. Therefore, there is no accurate information to gauge levels of sustainable off-take. Furthermore, the harvest and export limits are not adequately enforced.

CHRIS R. SHEPHERD, TRAFFIC SOUTHEAST ASIA

Plate 1. White-crested Laughingthrush *Garrulax leucolophus* of both the Sumatran and mainland Southeast Asian subspecies are commonly sold in the markets. Dealers claim that this species is becoming increasingly scarce on Sumatra.

CHRIS R. SHEPHERD, TRAFFIC SOUTHEAST ASIA

Plate 2. Fire-tufted Barbets *Psilopogon pyrolophus* in cages. There is no legal capture or trade of this species in Indonesia.

CHRIS R. SHEPHERD, TRAFFIC SOUTHEAST ASIA

Plate 3. Hill Mynas *Gracula religiosa* are heavily harvested in Sumatra, and are becoming increasingly scarce. Many of the Hill Mynas for sale in Medan come from Malaysia and other parts of Southeast Asia.

CHRIS R. SHEPHERD, TRAFFIC SOUTHEAST ASIA

Plate 4. White-headed Munias *Lonchura maja* are sent without permits to Malaysia and Singapore in large quantities, to be released for religious purposes.

CHRIS R. SHEPHERD, TRAFFIC SOUTHEAST ASIA

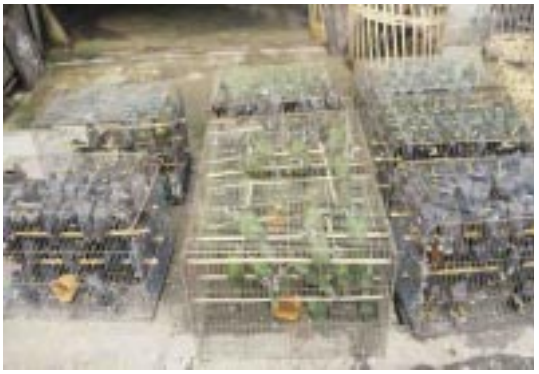
Plate 5. Red-breasted Parakeets *Psittacula alexandri* and other species of parrots are sold in large volumes in Medan.

CHRIS R. SHEPHERD, TRAFFIC SOUTHEAST ASIA

Plate 6. White Cockatoos, *Cacatua alba*, taken from the wild and smuggled to Medan's markets by land and air. These birds are often smuggled out of Indonesia to nearby Malaysia and Singapore.

CHRIS R. SHEPHERD, TRAFFIC SOUTHEAST ASIA

Plate 7. Black-winged Kites *Elanus caeruleus* were the most commonly observed raptor in trade during this study.



CHRIS R. SHEPHERD, TRAFFIC SOUTHEAST ASIA

Plate 9. Fire-tufted Barbets *Psilopogon pyrolophus* and Javan Mynas *Acridotheres javanicus* are sold in large quantities in the Medan bird markets.

CHRIS R. SHEPHERD, TRAFFIC SOUTHEAST ASIA

Plate 8. A Barn Owl *Tyto alba* peers through the bars of a small cage. Owls are traded largely for novelty pets.

CHRIS R. SHEPHERD, TRAFFIC SOUTHEAST ASIA

Plate 10. A young scop's owl *Otus* sp. to be sold as a novelty pet.

Harvest quotas are divided by province, with a limited amount being allowed from each designated area. Wildlife cannot be harvested from a province that has no allotted quota. If an exporter does not finish the allotted quota in a year, it is forfeited—the remaining volume that was not realized cannot be added to the following year's quota.

All wildlife traders in Indonesia must be registered with PHKA. Anyone not registered is not permitted to harvest and trade.

The Decree of the Ministry of Forestry No. 447/Kpts-11/2003 (revised from Decree of the Ministry of Forestry No. 62/Ktps-II/1998) requires any harvest or capture and distribution of wild plant and animal specimens to be done under a license. Sending or transporting wildlife from one location to another within Indonesia must be covered by legal documents, according to Article 42, Chapter X of the Regulations of the Government of the Republic of Indonesia Number 8 (1999), whether the species is protected by law or not. Collectors and suppliers (or middlemen) must be registered with regional offices for the Natural Resources Conservation Agency (BKSDA), the agency under PHKA responsible for the regulation of wildlife trade at the provincial level (Siswomartono, 1998).

Since 2002, Indonesia has not permitted export of any wild CITES-listed bird species. Low harvest quotas were set for Appendix II -listed birds since 2002 for captive breeding purposes only, and not for trade.

CHRIS R. SHEPHERD, TRAFFIC SOUTHEAST ASIA

Plate 11. White-headed Munias *Lonchura maja* and Scaly-breasted Munias *L. punctulata* are sent in large volumes to Malaysia and Singapore. These birds suffer very high mortalities, even before export—note dead birds on top of cage.

Furthermore, since 2005, no international trade of birds has been permitted due to the risk of avian influenza. During a recent spot-check on the three bird markets in Medan in 2005, it was observed that very few non-native and non-Sumatran species were available. According to dealers, this was due to import restrictions, stemming from the threat of avian influenza. However, the quantities of species and individual birds observed were much the same as in previous surveys. Dealers stated that more birds were being captured in Sumatra to meet the demand and fill the void caused by the threat of avian influenza. Six dealers were questioned regarding bird flu and all six stated that they did not believe such a virus existed and that it was merely a rumour, most likely concocted by competing bird traders in other Southeast Asian countries.

Observations

During the surveys carried out between 1997 and 2001, an average of more than 3500 birds was observed on each survey, representing a total of 300 species across the whole five years.

Of the 300 species of birds observed, a total of 56 were totally protected by law in Indonesia, and were offered for sale illegally. Some species of non-protected birds may be permitted in trade, provided they are legally sourced, following quota, transport and trade regulations. However, the vast majority of these species should also be considered illegal, as the regulations and quotas governing legal trade were not adhered to, based on numbers observed during these surveys, and information gleaned from conversations with the bird dealers. The large volumes of birds far exceeded the allowed quotas and were taken out of areas where quotas had already been exhausted or from areas not included in the quota. Such practices undermine efforts by the authorities in Indonesia to control and ensure any semblance of sustainable trade. Many birds were also reportedly trapped in protected areas, such as the Gunung Leuser National Park. Bird trappers and dealers were observed to be indiscriminate in the species they catch and sell, although legally protected and rare species, as well as species valued as song birds, are often preferred, as they command higher prices. Trappers and traders state that species highly valued in the trade are in decline in the wild, such as the Straw-headed Bulbul *Pycnonotus zeylanicus* and the Hill Myna *Gracula religiosa* (especially the subspecies *G. r. robusta* from the west coast island of Nias), due to over-harvesting.

Legally protected species are openly displayed in these markets, indicating a lack of effort on behalf of the enforcement authorities. Dealers are highly aware of the status of protection of the various species, and demand higher prices for protected ones. For example, 49 Yellow-crested Cockatoos *Cacatua sulphurea*, protected in Indonesia, were observed for sale during the 12 surveys conducted monthly in 2001. While there is some captive breeding of this species, none of the individuals observed during these surveys were

Plate 12. Hundreds of Purple-backed Starling *Sturnus sturninus* for sale in Medan bird markets.

CHRIS R. SHEPHERD, TRAFFIC SOUTHEAST ASIA

Plate 13. Purple-backed Starling *Sturnus sturninus* crammed into cages for sale in Medan.

CHRIS R. SHEPHERD, TRAFFIC SOUTHEAST ASIA

acquired legally, as dealers admitted that the birds had been obtained from the wild.

While the trade in legally protected species is an obvious concern, the trade in unprotected species is also in need of urgent attention. Though regulations and quotas are set to ensure the trade in these species remains sustainable, these are seldom, if ever, adhered to. For example, the trade of the Rainbow Lory *Trichoglossus haematodus* was allowed prior to 2002, regulated by the harvest and export quota system. In 2001, a total of 175 Rainbow Lorys were allowed to be taken from the wild in Indonesia, with less than 20 of these for the domestic market. Despite these controls, a total of 600 were observed during 12 monthly surveys conducted in 2001, in the markets of Medan alone.

The trade of unprotected species that do not have quotas is largely overlooked. These species are not listed as being protected by Indonesian law, but are not permitted in trade as there is no harvest or trade quota. All fauna species traded in Indonesia are subject to quota regulations. However, these species make up a large portion of the species in trade and are often traded in very large volumes. For example, the Fire-tufted Barbet *Psilopogon pyrolophus* is not protected by law, has no capture or trade quota and therefore should not be in the bird markets. However, during the 12 surveys conducted monthly in 2001, 1409 Fire-tufted Barbets were observed. These figures should be considered a gross underestimate of the actual quantities in trade; e.g. one dealer in Medan claimed to export approximately 500 Fire-tufted Barbets to the Pramuka bird market in Jakarta, the capital city of Indonesia, each week, by public bus.

Conclusion/Discussion

The bird trade in Indonesia is carried out largely in an illegal manner. It appears to be a serious threat to many species and demands urgent attention from government and conservation organisations. The fact that the illegal trade of birds is carried out in an open fashion points directly to a lack of enforcement by the authorities. In conversations with dealers, it was clear that they were well-versed with the relevant legislation. In fact, they used the protected status of the relevant species to demand a higher price. They were clearly not concerned with potential legal action against them.

As long as the trade is carried out in an uncontrolled and unregulated manner, it will continue to be a serious threat to the conservation of Indonesia's avifauna. Also, it is a threat to non-native species that are traded in these same markets. While very little research has been carried out to determine the impact trade has on wild populations, dealers themselves in the Medan bird markets stated that many species are becoming increasingly difficult to obtain from the wild in Indonesia. Some species once relatively easy to obtain in Sumatra, such as the Hill Myna and the Straw-headed Bulbul are now imported from Malaysia and other countries. A few species are also being bred in captivity, such as Spotted Dove *Streptopelia chinensis* and Zebra Dove *Geopelia striata*. However, according to dealers, wild birds are still captured and in some cases, these are preferred over captive-bred birds. Wild-caught birds still make up the majority of available specimens in these markets.

Recommendations

Enforcement efforts, including regular market monitoring and registration of dealers' stocks, by the Indonesian Government must be increased if the trade is to be efficiently regulated. Without effective enforcement, illegal and unsustainable trade will continue to threaten the conservation of Indonesia's birds.

Systematic monitoring procedures should be applied to Indonesia's bird markets is required in order to detect changes in market trends, monitor trade levels and identify species in urgent need of conservation interventions.

Research should be carried out on wild populations of birds in trade, especially those known to be or suspected to be in decline, as well as species that are very heavily traded, to determine the impact of trade and to assist the authorities in Indonesia in setting realistic capture and trade quotas.

Acknowledgements

The author would like to thank Loretta Ann Soosayraj, James Compton and Julia Ng for their comments on an earlier draft. Thanks are also due to Nigel Collar for his patience and support.

Reference

Jepson, P. & Ladle, R. J. (2005) Bird-keeping in Indonesia: conservation impacts and the potential for substitution-based conservation responses. *Oryx* 39:4.

Shepherd, C. R., Sukumaran, J. & Wich, S. A. (2004) *Open Season: An analysis of the pet trade in Medan, Sumatra 1997–2001*. TRAFFIC Southeast Asia.

Siswomartono, W. (1998) Review of the Policy and Activities of Wildlife Utilization in Indonesia. In: Erdelen, W. (ed.). Conservation, Trade and Sustainable Use of Lizards and Snakes in Indonesia. *Mertensiella* 7: 37–44. Rheinbach, Germany.

Chris R. Shepherd,
TRAFFIC Southeast Asia, Unit 9-3A, 3rd floor,
Jalan SS23/11, Taman SEA, 47400 Petaling Jaya,
Selangor, Malaysia
Email: cstsea@po.jaring.my

Appendix I

Bird species and numbers recorded in monthly surveys of the wildlife markets of Medan. January 1997–December 2001

A number of species originate from outside the Oriental region and the sequence of families follows that used in the Howard and Moore *Complete Checklist of the Birds of the World*. Third Edition, 2003.

Species	1997	1998	1999	2000	2001	Total
Southern Cassowary *Casuarius casuarius*	0	4	0	0	0	4
Blue-breasted Quail *Corturnix chinensis*	28	2	2	1	0	33
Grey-breasted Partridge *Arborophila orientalis*	7	2	23	10	2	44
Ferruginous Partridge *Caloperdix oculea*	0	0	3	1	0	4
Crested Partridge/Roulroul *Rollulus rouloul*	2	0	2	2	0	6
Red Junglefowl *Gallus gallus*	6	12	30	34	36	118
Green Junglefowl *Gallus varius*	0	0	10	3	0	13
Hoogerwerf's Pheasant *Lophura hoogerwerfi*	0	0	16	3	0	19
Sumatran Peacock Pheasant *Polyplectron chalcurum*	10	10	33	20	0	73
Green Peafowl *Pavo muticus*	0	2	11	0	5	18
Wandering Whistling Duck *Dendrocygna arcuata*	4	0	7	0	2	13
Lesser Whistling Duck *Dendrocygna javanica*	20	5	55	26	73	179
Family Ardeidae (>5 Oriental species)	14	1	4	2	0	21
Black Baza *Aviceda leuphotes*	2	5	0	3	0	10
Black-winged Kite *Elanus caeruleus*	19	2	40	6	2	69
Brahminy Kite *Haliastur indus*	0	15	3	11	6	35
Changeable Hawk-eagle *Spizaetus cirrhatus*	5	8	0	3	7	23
Other Accipitridae (>11 Oriental species)	12	14	4	6	6	42
White-breasted Waterhen *Amaurornis phoenicurus*	76	28	36	68	53	261
Purple Swamphen *Porphyrio porphyrio*	2	26	14	16	11	69
Common Moorhen *Gallinula chloropus*	28	0	2	0	4	34
Other Rallidae (4 Oriental species)	2	5	0	0	0	7
Barred Buttonquail *Turnix suscitator*	30	33	20	10	3	96
Island Collared Dove *Streptopelia bitorquata*	150	223	196	252	290	1,111
Spotted Dove *Streptopelia chinensis*	400	307	642	615	340	2,304
Barred Cuckoo-dove *Macropygia unchall*	0	7	1	15	2	25
Little Cuckoo-dove *Macropygia ruficeps*	0	0	0	0	47	47
Emerald Dove *Chalcophaps indica*	31	11	5	13	4	64
Zebra Dove *Geopelia striata*	2,200	1,899	3,456	2,075	1,360	10,990
Barred Dove *Geopelia maugei*	0	0	16	25	0	41
Other *Geopelia* (2 Australian species)	26	31	47	45	9	158
Nicobar Pigeon *Caloenas nicobarica*	17	18	2	2	1	40
Pink-necked Green Pigeon *Treron vernans*	138	125	148	227	203	841
Blue-crowned Hanging Parrot *Loriculus galgulus*	199	176	198	154	423	1,150
Tanimbar Cockatoo *Cacatua goffini*	36	145	86	36	35	338
Yellow-crested Cockatoo *Cacatua sulphurea*	103	83	125	40	49	400
Sulphur-crested Cockatoo *Cacatua galerita*	0	3	29	35	28	95
White Cockatoo *Cacatua alba*	14	10	54	4	22	104
Salmon-crested Cockatoo *Cacatua moluccensis*	0	2	28	36	5	71
Black Lory *Chalcopsitta atra*	102	67	79	12	22	282
Brown Lory *Chalcopsitta duivenbodei*	0	0	6	46	4	56
Yellow-streaked Lory *Chalcopsitta scintillata*	0	2	17	30	27	76
Violet-necked Lory *Eos squamata*	0	22	56	150	117	345
Red Lory *Eos bornea/Eos rubra*	362	160	74	47	69	712
Blue-streaked Lory *Eos reticulata*	0	22	56	0	19	97
Dusky Lory *Pseudeos fuscata*	280	183	96	102	73	734
Rainbow Lorikeet *Trichoglossus haematodus*	593	397	466	479	600	2,535
Iris Lorikeet *Psitteuteles iris*	0	0	16	0	10	26
Goldie's Lorikeet *Psitteuteles goldiei*	0	74	34	9	5	122
Chattering Lory *Lorius garrulus*	406	156	406	153	158	1,279

CHRIS R. SHEPHERD, TRAFFIC SOUTHEAST ASIA

Plate 14. A female Eclectus Parrot *Eclectus roratus* for sale in the market. This species, and many other parrots and cockatoos are smuggled from eastern Indonesia to Medan for sale. Many are sold illegally to international buyers from this market.

CHRIS R. SHEPHERD, TRAFFIC SOUTHEAST ASIA

Plate 15. A Buffy Fish-owl *Ketupa ketupu* and a Barred Eagle-owl *Bubo sumatranus* await sale in a roadside cage.

Species	1997	1998	1999	2000	2001	Total
Black-capped Lory *Lorius lory*	37	55	117	78	91	378
Papuan Lory *Charmosyna papou*	0	23	10	0	0	33
Red-flanked Lory *Charmosyna placentis*	0	0	0	0	52	52
Eastern Rosella *Platycercus eximius*	6	0	5	4	3	18
Red-rumped Parrot *Psephotus haematonotus*	0	0	0	12	4	16
Bourke's Parrot *Neopsephotus bourkii*	0	0	0	1	16	17
Blue-rumped Parrot *Psittinus cyanurus*	4	7	0	20	1	32
Eclectus Parrot *Eclectus roratus*	33	17	97	30	10	187
Moluccan King Parrot *Alisterus amboinensis*	6	0	1	0	0	7
Jonquil Parrot *Aprosmictus jonquillaceus*	11	3	13	7	36	70
Red-breasted Parakeet *Psittacula alexandri*	44	11	23	23	19	120
Long-tailed Parakeet *Psittacula longicauda*	86	8	2	46	0	142
African Grey Parrot *Psittacus erithacus*	4	0	5	14	20	43
Blue-and-yellow Macaw *Ara ararauna*	0	0	4	6	11	21
Red-and-green Macaw *Ara chloropterus*	0	0	3	15	3	21
Large Fig Parrot *Psittaculirostris desmarestii*	0	0	6	8	3	17
Family Cuculidae (5 Oriental species)	1	3	4	1	4	13
Greater Coucal *Centropus sinensis*	15	26	22	7	4	74
Lesser Coucal *Centropus bengalensis*	0	0	14	0	4	18
Barn Owl *Tyto alba*	9	17	9	4	3	42
Oriental Bay Owl *Phodilus badius*	4	5	2	1	0	12
Barred Eagle Owl *Bubo sumatranus*	5	7	0	0	0	12
Buffy Fish Owl *Ketupa ketupu*	9	4	7	0	0	20
Other Strigidae (>5 unidentified species)	9	15	1	3	0	28
Family Alcedinidae (3 Oriental species)	4	8	6	0	1	19
Family Bucerotidae (4 Oriental species)	0	6	4	0	1	11
Fire-tufted Barbet *Psilopogon pyrolophus*	1,200	1,163	368	340	1,409	4,480
Gold-whiskered Barbet *Megalaima chrysopogon*	1	0	16	4	8	29
Red-crowned Barbet *Megalaima rafflesii*	0	0	0	10	14	24
Red-throated Barbet *Megalaima mystacophanos*	0	0	11	16	4	31
Black-browed Barbet *Megalaima oorti*	10	40	33	63	186	332
Other Megalaiminae (3 Oriental species)	2	0	6	6	1	15

Species	1997	1998	1999	2000	2001	Total
Family Lybiinae (African Barbets: 2 species)	0	0	2	2	0	4
Common Goldenback *Dinopium javanense*	87	3	188	98	77	453
Other Picidae (3 Oriental species)	3	0	2	0	1	6
Black-and-red Broadbill *Cymbirhynchus macrorhynchus*	0	1	0	4	0	5
Hooded Pitta *Pitta sordida*	5	0	4	3	0	12
Blue-winged Pitta *Pitta moluccensis*	0	1	0	2	0	3
Helmeted Friarbird *Philemon buceroides*	7	0	4	0	5	16
Black-faced Friarbird *Philemon moluccensis*	0	0	0	7	1	8
Common Iora *Aegithina tiphia*	3	32	22	20	7	84
Long-tailed Shrike *Lanius schach*	1	117	73	138	125	454
Black-naped Oriole *Oriolus chinensis*	359	194	250	302	199	1,304
Family Oriolidae (2 Oriental species)	2	1	2	0	5	10
Lesser Racket-tailed Drongo *Dicrurus remifer*	1	1	0	7	57	19
Greater Racket-tailed Drongo *Dicrurus paradiseus*	4	9	2	4	0	66
Other Dicruridae (mainly unidentified)	38	39	5	18	6	106
Pied Fantail *Rhipidura javanica*	6	0	3	1	0	10
Crested Jay *Platylophus galericulatus*	5	0	4	5	11	25
Common Green Magpie *Cissa chinensis*	120	127	135	264	121	767
Sumatran Treepie *Dendrocitta occipitalis*	2	46	49	39	0	136
Racquet-tailed Treepie *Crypsirina temia*	0	0	7	2	0	9
Slender-billed Crow *Corvus enca*	62	49	11	4	0	126
King Bird-of-Paradise *Cicinnurus regius*	0	0	7	0	0	7
Lesser Bird-of-Paradise *Paradisaea minor*	0	1	0	0	0	1
Great Tit *Parus major*	4	302	111	49	6	472
Family Alaudidae (several unidentified species)	121	46	2	32	20	231
Hill Prinia *Prinia atrogularis*	0	0	0	13	6	19
Bar-winged Prinia *Prinia familiaris*	0	90	54	48	23	215
Yellow-bellied Prinia *Prinia flaviventris*	0	0	34	44	55	133
Rufous-tailed Tailorbird *Orthotomus sericeus*	0	0	30	3	4	37
Ashy Tailorbird *Orthotomus ruficeps*	97	272	156	99	139	763
Straw-headed Bulbul *Pycnonotus zeylanicus*	334	415	299	154	267	1,469
Black-headed Bulbul *Pycnonotus atriceps*	10	79	78	138	99	404
Black-crested Bulbul *Pycnonotus melanicterus*	107	337	371	305	253	1,373
Scaly-breasted Bulbul *Pycnonotus squamatus*	13	128	3	24	26	194
Grey-bellied Bulbul *Pycnonotus cyaniventris*	20	38	0	6	16	80
Red-whiskered Bulbul *Pycnonotus jocosus*	150	154	610	431	31	1,376
Sooty-headed Bulbul *Pycnonotus aurigaster*	500	476	1,058	588	905	3,527
Orange-spotted Bulbul *Pycnonotus bimaculatus*	240	303	385	170	224	1,322
Yellow-vented Bulbul *Pycnonotus goiavier*	90	101	186	240	455	1,072
Red-eyed Bulbul *Pycnonotus brunneus*	0	0	0	39	11	50
Ochraceous Bulbul *Alophoixus ochraceus*	8	60	73	32	2	175
Grey-cheeked Bulbul *Alophoixus bres*	0	0	10	17	43	70
Sunda Bulbul/Olive Bulbul *Iole virescens*	0	0	0	16	15	31
Ashy Bulbul *Hemixos flavala*	0	0	0	18	4	22
Black Bulbul *Hypsipetes leucocephalus*	24	0	0	43	8	75
Other Pycnonotidae (4 Oriental species)	0	0	3	10	37	50
Sunda Laughingthrush *Garrulax palliatus*	400	425	884	364	260	2,333
White-crested Laughingthrush *Garrulax leucolophus*	850	815	645	532	550	3,392
Black Laughingthrush *Garrulax lugubris*	6	58	2	18	13	97
Black-throated Laughingthrush *Garrulax chinensis*	800	924	226	350	207	2,507
Chestnut-capped Laughingthrush *Garrulax mitratus*	550	524	310	252	147	1,783
Hwamei *Garrulax canorus*	2	0	234	255	131	622
Other *Garrulax* (3 species)	0	4	2	9	2	17
Silver-eared Mesia *Leiothrix argentauris*	203	138	212	138	77	768
Red-billed Leiothrix *Leiothrix lutea*	850	740	1,116	978	797	4,481
Long-tailed Sibia *Heterophasia picaoides*	119	22	32	183	383	739

Species	1997	1998	1999	2000	2001	Total
Other Timaliidae (7 Oriental species)	3	2	15	5	8	33
Oriental White-eye *Zosterops palpebrosus*	254	213	796	829	232	2,324
Asian Fairy Bluebird *Irena puella*	3	57	44	27	142	273
Asian Glossy Starling *Alponis panayensis*	19	422	512	789	337	2,079
Yellow-faced Myna *Mino dumonii*	100	90	108	140	59	497
Golden Myna *Mino anais*	13	0	23	31	19	86
Sulawesi Myna *Basilornis celebensis*	7	1	1	2	0	11
Finch-billed Myna *Scissirostrum dubium*	23	1	31	0	0	55
Hill Myna *Gracula religiosa*	697	204	348	555	352	2,156
Crested Myna *Acridotheres cristatellus*	87	25	7	23	7	149
White-vented/Javan Myna *Acridotheres javanicus*	5,000	7,618	3,955	1,831	1,115	19,519
Common Myna *Acridotheres tristis*	23	216	406	353	415	1,413
Black-winged Myna *Acridotheres melanopterus*	18	22	37	41	28	146
Black-collared Starling *Sturnus nigricollis*	174	83	152	224	154	787
Asian Pied Starling *Sturnus contra*	83	57	47	33	39	259
Purple-backed Starling *Sturnus sturninus*	1,500	1,859	1,757	143	1,579	6,838
Chestnut-capped Thrush *Zoothera interpres*	1	8	20	15	12	56
Chestnut-backed Thrush *Zoothera dohertyi*	0	0	13	14	9	36
Orange-headed Thrush *Zoothera citrina*	19	46	50	111	149	375
Siberian Thrush *Zoothera sibirica*	11	5	1	6	41	64
Common Blackbird *Turdus merula*	0	38	0	8	14	60
Island Thrush *Turdus poliocephalus*	0	0	0	9	18	27
Eyebrowed Thrush *Turdus obscurus*	13	6	1	7	20	47
Magpie Robin *Copsychus saularis*	2,500	2,565	3,478	2,433	1,519	12,495
White-rumped Shama *Copsychus malabaricus*	2,500	2,586	1,979	2,055	1,200	10,320
Pied Bushchat *Saxicola caprata*	0	0	1	5	8	14
Family Muscicapinae (unidentified *Cyornis* species)	0	0	0	13	6	19
Greater Green Leafbird *Chloropsis sonnerati*	0	0	5	72	33	110
Blue-winged Leafbird *Chloropsis cochinchinensis*	200	204	220	345	395	1,364
Blue-masked Leafbird *Chloropsis venusta*	0	0	0	0	8	8
Other *Chloropsis* (mainly unidentified)	11	65	0	25	9	110
Orange-bellied Flowerpecker *Dicaeum trigonostigma*	134	49	89	144	85	501
Other Dicaeidae (2 Oriental species)	0	0	3	1	0	4
Family Nectariniidae (4 Oriental species)	4	0	14	3	1	22
Baya Weaver *Ploceus philippinus*	1,500	1,503	1,851	1,770	1,419	8,043
Family Estrildidae (6 African species)	221	46	0	0	0	267
Family Estrildidae (5 Australasian species)	136	136	2	15	1	290
Red Avadavat *Amandava amandava*	352	212	117	116	343	1,140
Pin-tailed Parrot-Finch *Erythrura prasina*	249	271	251	272	270	1,313
Scaly-breasted Munia *Lonchura punctulata*	2,500	2,555	6,925	12,600	6,270	30,850
Black-headed Munia *Lonchura malacca*	588	437	225	519	298	2,067
White-headed Munia *Lonchura maja*	2,500	2,415	4,870	11,800	6,450	28,035
Java Sparrow *Lonchura oryzivora*	390	193	297	449	184	1,513
Forest Wagtail *Dendronanthus indicus*	0	0	3	8	2	13
Grey Wagtail *Motacilla cinerea*	5	100	14	8	0	127
Family Viduidae (1 African species)	9	4	0	0	0	13
Family Fringillidae (2 African species)	168	10	15	63	33	289

TAXONOMIC UPDATE

Splits galore: the revolution in Asian leaf warbler systematics

FRANK E. RHEINDT

Leaf warblers (*Phylloscopus*, *Seicercus*) constitute a continual challenge to birdwatchers. Their simple and conservative plumages make them a confusing target for field identification, and vocalisations often provide the best clues. This was noted from the earliest days of ornithology, when Derham (1718) first claimed that there were three rather than one species of British "willow-wren", now known as Chiffchaff *P. collybita*, Willow Warbler *P. trochilus* and Wood Warbler *P. sibilatrix*.

Unfortunately, traditional museum-based taxonomy in the nineteenth and twentieth centuries relied sparingly on songs and call notes. However, towards the end of the twentieth century, an increased awareness of the importance of vocal traits in diagnosing species limits in leaf warblers slowly emerged (e.g. Martens 1980, 1996; Alström and Ranft 2003). This new focus was then joined by the development of improved phylogenetic and DNA sequencing methods in systematic research. The application of these new techniques soon provided spectacular insights into warbler relationships and demonstrated that there are deep species-level differences between the former races of a number of well-known European leaf warbler species, such as Bonelli's Warbler (*Phylloscopus bonelli*) and the Chiffchaff (Helbig *et al*. 1995, 1996).

Asia harbours by far the highest diversity of leaf warblers on earth, yet ornithological focus was limited to European species in the early days of modern taxonomic warbler research. However, the last five years have seen a surge in leaf warbler studies, employing techniques such as sound analysis or DNA sequencing and leading to a number of surprising taxonomic rearrangements. It seems as though traditional taxonomy largely underestimated the diversity of reproductively isolated taxa (= biological species) within the leaf warblers.

The sheer number of new findings in leaf warbler systematics makes it a daunting task for Oriental birders to keep up with the latest taxonomic developments. Some of the latest DNA- or acoustics-based species splits have not yet found their way into the modern identification literature. Quite a few of them lack English names, and most were published in scientific journals of limited public scope and accessibility.

The following review is aimed at giving the Oriental birder a detailed although by no means comprehensive overview of the latest studies into Asian leaf warbler systematics and the taxonomic implications. However, while the *Phylloscopus collybita* (Chiffchaff) complex marginally extends into the Oriental Region, it has not been included in this account as most of the splits within it are by now well-established in the birding world.

On the one hand, the goal of this account is to provide a summary of what has been published on each of a number of relevant warbler species complexes. On the other, I attempt to point out species and areas in which future research is likely to uncover additional splits or lumps. Therefore, species taxonomy in this account closely follows the results of recent publications even in cases where additional splits are almost guaranteed but, at the same time, those likely future splits will be identified in the text. I also make recommendations for English names in a few cases where the original authors chose not to provide them.

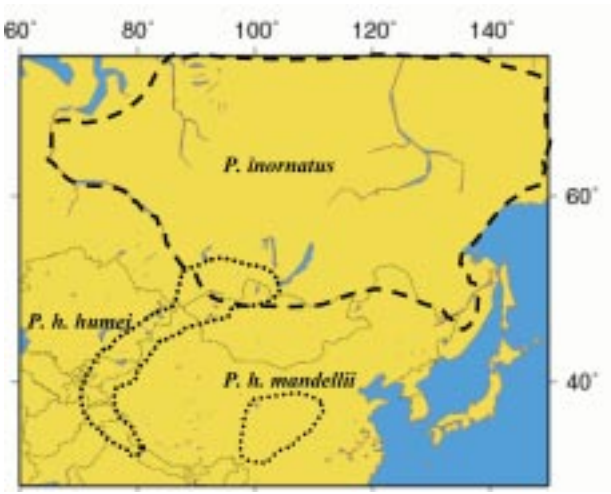
The Yellow-browed Warbler complex

Yellow-browed Warbler *Phylloscopus inornatus* (monotypic)

Hume's Warbler *Phylloscopus humei*

- *P. h. humei*
- *P. h. mandellii*

For most of the twentieth century, the Yellow-browed Warbler *Phylloscopus inornatus* was treated



AURELIAN AUDEVARD

Plate1. *Phylloscopus humei humei.* Kazakhstan, May.

URBAN OLSSON

Plate 2. *Phylloscopus kansuensis* Qinghai, China, June.

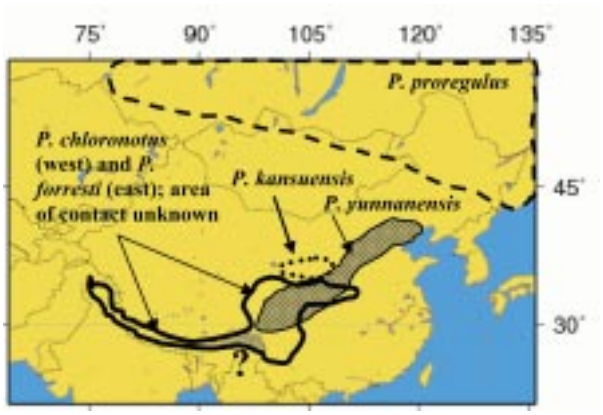
as a single species comprising three subspecies: *inornatus* from Siberia, *humei* from the Central Asian mountains and *mandellii* from West China. This treatment has long prevailed even though it was known that *humei* and *inornatus* are sympatric in the Altai Region (Chrabryj *et al.* 1989). Only recently have differences in vocalisations triggered the suggestion that *inornatus* and *humei* constitute different biological species (e.g. BOURC 1997).

A strong case for splitting the two has been made by a recent study by Irwin *et al.* (2001a): playback experiments in the zone of overlap between *humei* and *inornatus* elicited limited response between but strong response within the two forms. Mitochondrial DNA exhibits differences that are comparable to 4.8% cytochrome-b divergence. Although cytochrome-b was not the actual gene under study, this value provides a reasonable point of comparison with the genetic differentiation among other warbler species, many of which are less divergent in mitochondrial DNA.

On the other hand, Irwin *et al.* (2001a) found few differences in song and plumage between *humei* and *mandellii*. And while their calls do differ, and both forms are entirely separated by the Tibetan plateau, playback experiments revealed that each form strongly reacts to the other's song. All the *humei* and *mandellii* individuals whose DNA they examined sorted into two discrete groups (so-called monophyletic groups), but genetic divergence between them was much smaller than between either of them and *inornatus* (i.e. roughly comparable to 2% cytochrome-b divergence). The two forms seem to be in the initial stages of speciation, but should still be considered subspecies of one biological species owing to the lack of barriers to potential hybridisation.

The Pallas's Warbler complex

An even more complicated situation is presented by the Pallas's Warbler *Phylloscopus proregulus* complex, which has included around five



subspecies in the past. Over 15 years ago species status was proposed for at least two of these races (Alström & Olsson 1990, Alström *et al.* 1997), but it was not until Martens *et al.* (2004) published a detailed phylogenetic and acoustic study of the complex that the true picture became clearer. Following these studies, four members of the complex should be considered as biological species, with an additional one that had historically been described within the complex but remained cryptic for many decades:

Pallas's Warbler *Phylloscopus proregulus* (monotypic)

The name-bearing species of this complex breeds in Siberia and winters widely in tropical Asia.

Gansu Leaf Warbler *P. kansuensis* (monotypic)

Based on vocalisations and playback tests, Alström *et al.* (1997) proposed species status for this very restricted form, whose breeding range is confined to a small area in north-western China centred around Gansu and Qinghai provinces. Martens *et al.* (2004) confirmed the distinctness of this warbler, which is genetically closest to its Siberian neighbour *P. proregulus*, although quite different at 3.1% cytochrome-b divergence. Its English name

has now become thoroughly established in the birding literature.

Simla Leaf Warbler *P. chloronotus*

- *P. c. chloronotus*
- *P. c. simlaensis*

Sichuan Leaf Warbler *P. forresti* (monotypic)

Even before the advent of DNA studies in warblers, Martens (1980) noted the pronounced differences in plumage and especially vocalisations between Siberian Pallas's Warblers *P. proregulus* and their Himalayan and Western Chinese relatives. Alström & Olsson (1990) confirmed this, and additionally demonstrated a lack of response to playback between the two forms, and proposed to split off the non-Siberian populations as "Lemon-rumped Warbler" *P. chloronotus*. Finally, Martens *et al.* (2004) uncovered some extremely high levels of genetic differentiation between Pallas's and Lemon-rumped Warblers (i.e. 4.5% cytochrome-b divergence). However, their studies also revealed that even within "Lemon-rumped Warblers", Nepalese and Kashmiri samples differed dramatically from Western Chinese samples in song and mitochondrial DNA (4.2% cytochrome-b divergence), so they elevated both forms to species level (western *P. chloronotus* and eastern *P. forresti*). Presumably the hitherto unknown boundary between both species lies somewhere in Yunnan, Burma or north-eastern India.

The type locality of *P. chloronotus* is Nepal, so this name clearly refers to the Himalayan (= western) species. Within this new and exclusively Himalayan *P. chloronotus*, Martens *et al.* (2004) decided to retain the Western Himalayan *P. c. simlaensis* as a valid subspecies on account of slight plumage differences from eastern Himalayan birds, even though there are no notable genetic and acoustic differences between *simlaensis* and nominate *chloronotus*. Populations from the east (i.e. from western China) have previously been named *P. forresti* Rothschild, 1921. This name was later discarded as a synonym, but Martens *et al.* (2004) resurrected it to denote the eastern species.

As English names they proposed "Sichuan Leaf Warbler" for *P. forresti* and "Simla Leaf Warbler" for *P. chloronotus*. The latter name, which alludes to the western Himalayan subspecies (*simlaensis*) within *P. chloronotus*, may not be ideal, since it makes geographical reference to a region that is near the margin of the species's distribution and outside the range of the nominate (= name-giving) subspecies. However, considering that a future split between *P. c. chloronotus* and *P. c. simlaensis* is highly unlikely, this name may—at any rate—be better than some cumbersome composite such as "Western Lemon-rumped Warbler".

Chinese Leaf Warbler *P. yunnanensis* (monotypic)

Alström *et al.* (1992) described a new species that closely resembles the members of the Pallas's Warbler complex, but which differs in plumage, vocalisations, habitat choice and nest, and which can be found breeding side-by-side with *P. forresti* and (at one site) *P. kansuensis*. They named it Chinese Leaf Warbler *P. sichuanensis*, but overlooked the fact that five individuals of this species had already been described as *P. proregulus yunnanensis* by La Touche in 1922; the bird was up-graded to species rank a year later, but soon afterwards the name fell into oblivion as a synonym of *P. proregulus*.

Martens *et al.* (2004) confirmed that *P. yunnanensis* is closely related to the Pallas's Warbler complex, although it does not form part of the superspecies because of its sympatric occurrence with Sichuan Leaf Warbler *P. forresti* and Gansu Leaf Warbler *P. kansuensis*, as well as its pronounced genetic differentiation (7.5–8.4% cytochrome-b divergence from members of the Pallas's Warbler complex). They proposed "La Touche's Leaf Warbler" as an English name, which

Plate 3. *Phylloscopus. forresti*, Sichuan, China, May.

URBAN OLSSON

Plate 4. *Phylloscopus yunnanensis*, Sichuan, China, June.

URBAN OLSSON

might be preferable to "Chinese Leaf Warbler" because of the geographic vagueness of the latter and the fact that China harbours so many leaf warblers. However, the name "Chinese Leaf Warbler" has meanwhile found its way into the field literature and should probably therefore stand.

The Greenish Warbler ring species

Greenish Warbler *Phylloscopus trochiloides*

- *P. t. viridanus* ("Greenish Warbler")
- *P. t. ludlowi*
- *P. t. trochiloides*
- *P. t. obscuratus*
- *P. t. plumbeitarsus* ("Two-barred Greenish Warbler")
- *P. t. nitidus* ("Green Warbler")

For several years now, Darren Irwin and his co-workers have closely looked into the phylogenetics and vocalisations of the Greenish Warbler *Phylloscopus trochiloides* complex. In a series of high-calibre publications (Irwin *et al.* 2001b, 2005, Irwin 2002) they revealed a most unusual biogeographic pattern among the forms that comprise this superspecies. The Greenish Warbler is one of few remaining confirmed examples of an avian ring species, in which two terminal forms co-exist without interbreeding, but are linked with each other along a chain of intergrading populations. The western Siberian *P. t. viridanus* ("Greenish Warbler") meets the eastern Siberian "Two-barred Greenish Warbler" *P. t. plumbeitarsus* somewhere in the Altai Region, where the two essentially constitute different biological species. However, their ranges are linked along a chain of vocally and morphologically intermediate subspecies towards the south: *P. t. viridanus* intergrades with *P. t. ludlowi* from the Central Asian mountains and Western Himalayas, which, in turn, shifts into the Eastern Himalayan *P. t. trochiloides* and finally into the Chinese *P. t. obscuratus*. The latter then fuses into the "Two-barred Greenish Warbler" *P. t. plumbeitarsus* towards the north. Additionally, there is an isolated subspecies, the "Green Warbler" *P. t. nitidus*, in the Caucasus and northern Iran.

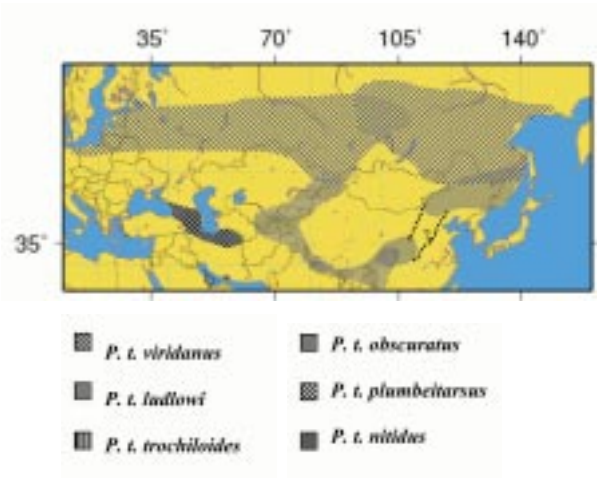


Plate 5. *Phylloscopus trochiloides trochiloides*, Qinghai, near Suichuan border, June 2000.

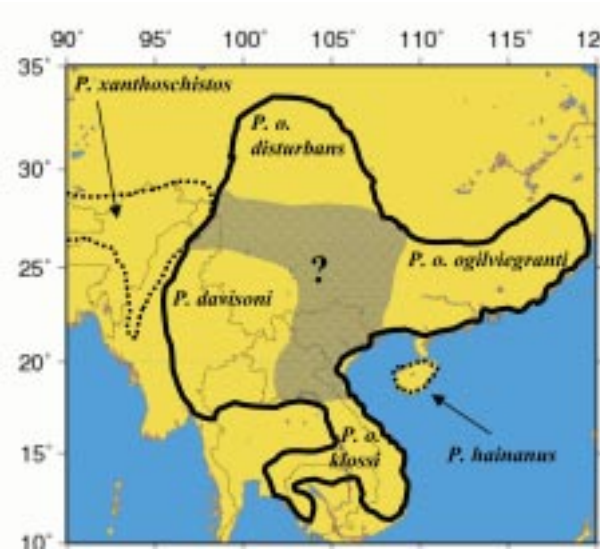
JON HORNBUCKLE

One particular finding of these studies has worrisome implications for ornithologists and should ring alarm bells with those who tend to jump to taxonomic conclusions based on scant genetic data: it was shown that along the smooth gradient of subspecies in the Himalayas there is a deep phylogenetic split in mitochondrial DNA somewhere within the range of *P. t. ludlowi*. Populations east and west of this split are identical in plumage and song, and a later study with nuclear (rather than mitochondrial) DNA confirmed that there is on-going gene flow between birds on either side of the break. Irwin (2002) presented evidence that such "mitochondrial breaks" can occur in the presence of unimpeded gene-flow. Thus it is imperative that ornithologists ensure that species splits based on cytochrome-b or similar sequences correspond to breaks in the distribution of vocal and plumage characters. Otherwise, we might have been tempted to divide *P. trochiloides* into two biological species along an artificial line somewhere in north-west India that is not reflected by the birds' reproductive behaviour.

In terms of taxonomy, Irwin and co-workers show that all forms of the *P. trochiloides* complex have to be maintained within one biological species, although they do not interbreed in Central Siberia. This is true even for the geographically isolated "Green Warbler" *P. t. nitidus*, since it is genetically nested within the complex and its separation would create what biologists term a "non-monophyletic taxon".

The White-tailed Leaf Warbler complex

For many decades, the taxonomy around the White-tailed Leaf Warbler *Phylloscopus davisoni* has been



remarkably constant, and four major subspecies (*davisoni*, *ogilviegranti*, *klossi*, *disturbans*) have been recognised, although the exact extent of their ranges and overlap has remained unknown. A recent phylogenetic study by Olsson *et al.* (2005), however, uncovered highly unexpected results:

"Davison's Leaf Warbler" *Phylloscopus davisoni* (monotypic)

Grey-hooded Warbler *Phylloscopus xanthoschistos*

- *P. x. xanthoschistos*
- *P. x. tephrodiras*
- *P. x. jerdoni*
- *P. x. flavogularis*

According to mitochondrial DNA, the nominate subspecies of White-tailed Leaf Warbler *P. d. davisoni* is more closely related to the Grey-hooded Warbler *Seicercus xanthoschistos* than to the other three races. From previous DNA studies (Olsson *et al.* 2004, Päckert *et al.* 2004), it was known that Grey-hooded Warblers are not actually closely related to other species classified as *Seicercus* leaf warblers and that they would have to be re-assigned to *Phylloscopus*, but it came as a surprise to see them nested right within the White-tailed Leaf Warbler complex. Genetic distances (measured in cytochrome-b divergence) are rather high between nominate *P. d. davisoni* and any of the other forms, including Grey-hooded Warbler (4.0-4.7%). This genetic distinctness and the greater genetic proximity to *Phylloscopus xanthoschistos* led Olsson *et al.* (2005) to suggest that *P. d. davisoni* be split from the other three former races of the White-tailed Leaf Warbler.

They did not suggest an English name for the new *P. davisoni*. Retaining "White-tailed Leaf Warbler" as the English species name would lead to confusion, and in view of the great visual uniformity of all forms it is best to avoid a name referring to plumage. The least ambiguous moniker may be "Davison's Leaf Warbler". Olsson *et al.*'s (2005) genetic sample for this species originates from north-west Thailand, but the distributional boundaries are far from known (see below).

Hainan Leaf Warbler *Phylloscopus hainanus* (monotypic)

"Kloss's Leaf Warbler" *Phylloscopus ogilviegranti*

- *P. o. ogilviegranti*
- *P. o. disturbans*
- *P. o. klossi*

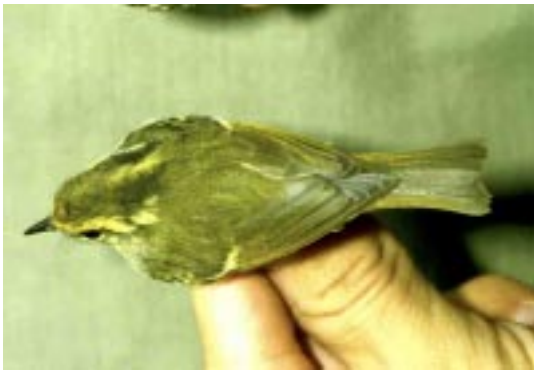
In Olsson *et al.*'s (2005) study, the other three subspecies of the former White-tailed Leaf Warbler (namely *klossi*, *disturbans* and *ogilviegranti*) form one single clade, in which the three races are generally separated by low genetic distances (0.3–1.2% cytochrome-b divergence). This new species is called *P. ogilviegranti*, because this name has priority by a few months. Another surprising finding is that the Hainan Leaf Warbler *P. hainanus*, which Olsson, Alström and Colston newly described in 1993, is the next relative of *P. ogilviegranti* and therefore forms part of the White-tailed Leaf Warbler complex. Although genetic

Plate 6. *Phylloscopus davisoni*, NW Thailand, March.

URBAN OLSSON

Plate 7. *Phylloscopus hainanus*, Hainan, China, May.

URBAN OLSSON



URBAN OLSSON

Plate 8. *Phylloscopus ogilviegranti ogilviegranti*, Fujian, China, May.

URBAN OLSSON

Plate 10. *Phylloscopus ogilviegranti klossi*, S Vietnam, April.

URBAN OLSSON

Plate 9. *Phylloscopus ogilviegranti disturbans*, Sichuan, China, May.

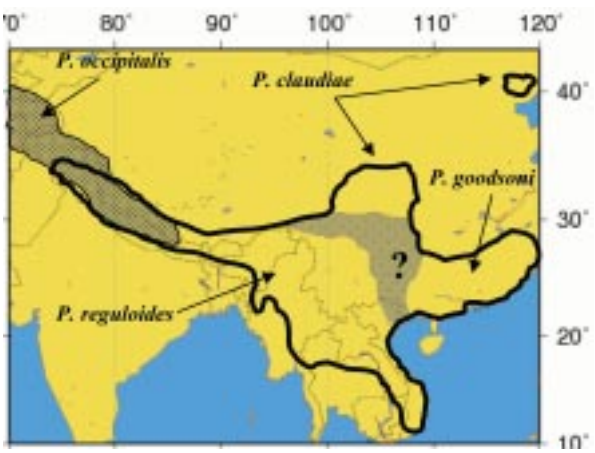
differentiation between the Hainan Leaf Warbler and *P. ogilviegranti* (at 1.5–1.9% cytochrome-b divergence) is not quite as pronounced as between other species-level taxa, Olsson *et al.* (2005) preferred to continue to treat them as different species because of the distinct plumage of *P. hainanus*. However, plumage differences can be of little significance in leaf warblers, and future investigations into vocal data may well show that Hainan Leaf Warbler does not deserve biological species rank and is more appropriately classified as a subspecies of *P. ogilviegranti*.

It is important to note that the distribution of all former subspecies of the White-tailed Leaf Warbler is incompletely known and that nothing has been published about vocal differences. Presently, Davison's Leaf Warbler *P. davisoni* is presumed to range from Burma and Yunnan all the way to northern Vietnam, thereby dividing the range of *P. ogilviegranti* into the southern Vietnamese *P. o. klossi* and the Western/Eastern Chinese *P. o. disturbans*/*ogilviegranti*, respectively. Birders can make a real contribution to figuring out where/if the ranges of these forms meet or overlap by paying attention to potential vocal differences. *P. ogilviegranti* currently lacks an English name. "Kloss's Leaf Warbler" would be an appropriate choice to honour the contribution of that great Oriental ornithologist.

The Blyth's Leaf Warbler complex

In the same study, Olsson *et al.* (2005) also investigated the phylogenetics of Blyth's Leaf Warbler *P. reguloides*, a polytypic species that has been thought to comprise about seven different subspecies. Their findings suggest that the Western Crowned Warbler *P. occipitalis* is a member of the Blyth's Leaf Warbler complex, which fits well with the unique single-wing flicking behaviour of both species. However, within the races of Blyth's Leaf Warbler a few interesting findings came to light.

All former subspecies of Blyth's Leaf Warbler clustered into three discrete clades: one is made up of the western and northern Chinese *claudiae*, the second includes the two south-eastern Chinese forms *goodsoni* and *fokiensis*, and the third comprises the remaining subspecies (*reguloides*, *kashmirensis*, *assamensis* and *ticehursti*) from the Himalayas and Indochina. All three lineages are



separated by huge genetic distances. In fact, as cytochrome-b divergences between the three clades were of the same magnitude as their divergences towards *P. occipitalis* (6–9%), the data did not unambiguously resolve whether the *goodsoni* clade is most closely related to the other former Blyth's members, or whether its nearest relative is the Western Crowned Warbler.

Even though nothing is known about vocal differences between any of the forms involved (including Western Crowned Warbler), and even though there has been no research into potential contact zones between the three Blyth's lineages, Olsson *et al.* (2005) proposed to elevate all three lineages to species rank.

Western Crowned Warbler *Phylloscopus occipitalis* (monotypic)
Claudia's Warbler *Phylloscopus claudiae* (monotypic)

The newly elevated monotypic *P. claudiae* lacks an English name: "Claudia's Warbler" seems to be a sensible option. Its core range is in Sichuan, but a newly discovered "Blyth's Warbler" population in Hebei Province (north China) is genetically indistinguishable from Sichuan birds, and potential undiscovered populations may linger in-between. The nature of the contact zone between Claudia's Warbler and the new *P. reguloides* and/or *P. goodsoni* is unknown (see below).

It would be highly desirable to find out about vocal differences between Claudia's Warbler and its three relatives. As shown in the Greenish Warbler *P. trochiloides* (see above), it is always necessary to match species breaks in DNA with song characteristics or plumage traits, and it may be unwise to accept splits based solely on DNA. Even though the genetic divergence between Claudia's Warbler and the other "Blyth's Warblers" is particularly deep (at 6–9% cytochrome-b), this warning also applies to the present case. Birders should therefore be aware that the current split is provisional pending their input on vocal data.

Ongoing work by J. Martens and his colleagues aims at extending the vocal and DNA sampling in Olsson *et al.*'s investigation (2005). The study is not finished yet, but preliminary results show that "…there is more than one form of Blyth's Warbler at several locations in China, breeding in close vicinity…" (J. Martens *in litt*. 2005). These "forms" may refer to *P. reguloides* and/or *P. goodsoni* reaching into *P. claudiae*'s range, or they may (less probably) refer to new additional splits altogether. Certainly, however, there are a few surprises ahead, and birders are advised to take their recording equipment along when going out to find Claudia's Warbler.

Hartert's Warbler *Phylloscopus goodsoni*

- *P. g. fokiensis*
- *P. g. goodsoni*

The two eastern Chinese races form *P. goodsoni*, which also lacks an English name, and which might best be called "Hartert's Warbler", honouring the man who described both subspecies. *P. goodsoni* was long treated as a subspecies of *P. ricketti*, until Alström *et al.* (1995) noted its affinity to *P. reguloides* and merged it into that species. Genetically, *P. g. goodsoni* from Guangdong and *P. g. fokiensis* from Fujian are near-identical, but their plumage is fairly different, so both should be maintained as valid subspecies. Again, vocal differences from the other "Blyth's Warblers" are as yet unknown and should be a priority in warbler research. Olsson *et al.*'s (2005) genetic data suggest that Hartert's Warbler may actually be closer to the Western Crowned Warbler *P. occipitalis* than to the other "Blyth's Warblers", but statistical support for this conclusion is limited.

Birders are reminded that the contact zone between *P. goodsoni* and *P. reguloides/claudiae* has not been documented yet, and that on-going

Plate 11. *Phylloscopus claudiae* Sichuan, China, May.

URBAN OLSSON

Plate 12. *Phylloscopus goodsoni fokiensis* Fujian, China, May.

URBAN OLSSON

research by J. Martens and colleagues points at the existence of "…more than one form of Blyth's Warbler at various locations in China…", which may well have a future impact on the identity of this species.

Southern Blyth's Leaf Warbler *Phylloscopus reguloides*

- *P. r. reguloides*
- *P. r. assamensis*
- *P. r. ticehursti*

All the remaining subspecies of Blyth's Leaf Warbler fall into one clade that retains the name *P. reguloides*. The races within this new *P. reguloides* are of widely differing distinctness: Western Himalayan *P. r. kashmirensis* is genetically identical to the nominate subspecies from further east in the Himalayas, and since its plumage and voice are doubtfully distinct, Olsson *et al.* (2005) simply subsumed it under *P. r. reguloides*. However, both *P. r. ticehursti* and *P. r. assamensis* differ from the nominate race by up to 3.2% cytochrome-b divergence. Yet the divisions are not clear-cut, and some *assamensis* samples cluster with *P. r. reguloides*, while others align with *P. r. ticehursti*. It is evident that the taxonomic situation within *P. reguloides* is more complicated than currently understood, and further research is in progress to uncover the true boundaries in genetic, vocal and plumage traits within this species and to support potential additional splits. Preliminary data show that there is more than one form breeding in close vicinity to each other in Nepal, but vocal differences seem to be very slight and potentially "…too difficult to tease apart for birders in the field…" (J. Martens *in litt*. 2005). Birders should thus be aware of the provisional nature of this current taxonomic arrangement.

Plate 13. *Phylloscopus reguloides reguloides*. NW Thailand, March.

URBAN OLSSON

Plate 14. *Phylloscopus reguloides ticehursti* S Vietnam, April.

URBAN OLSSON

No English name has been suggested for *P. reguloides*, but retaining the old name "Blyth's Leaf Warbler" would introduce ambiguities, as it would not be clear whether it refers to the former Blyth's Leaf Warbler or the new, more restricted species. Given that there is pronounced genetic differentiation within *P. reguloides* that requires further untangling, and that nothing is known about vocal differences between *P. reguloides* and *P. claudiae/goodsoni* or within the different subspecies of *P. reguloides*, "Southern Blyth's Leaf Warbler" should be considered as a cumbersome but unequivocal provisional name.

The Mountain Leaf Warbler complex

Olsson *et al.* (2005) only just started to scratch the surface of Mountain Leaf Warbler systematics by including two subspecies of the widespread Australasian *P. trivirgatus* in their phylogenetic sampling along with a number of other Indonesian and Melanesian leaf warblers, such as *P. amoenus* and *P. sarasinorum*. It turns out that the two samples of the Mountain Leaf Warbler *P. trivirgatus*, one from Java *P. t. trivirgatus* and one from Luzon *P. t. benguetensis*, are genetically more distant from each other (at 6.5% cytochrome-b divergence) than from any of the other leaf warblers sampled from this Australasian clade. Philippine *P. t. benguetensis* seems to be much more closely related to species from as far afield as the Solomons than to *P. t. trivirgatus* from Java. Obviously, things will have to be split within the Mountain Leaf Warbler complex, but considering that there are so many isolated island races that have not been sampled, proper judgement has to be deferred. Meanwhile, it is important for birders and conservationists to keep in mind that each island race may be worthy of species recognition in the future, as Lambert (1993) long since intimated.

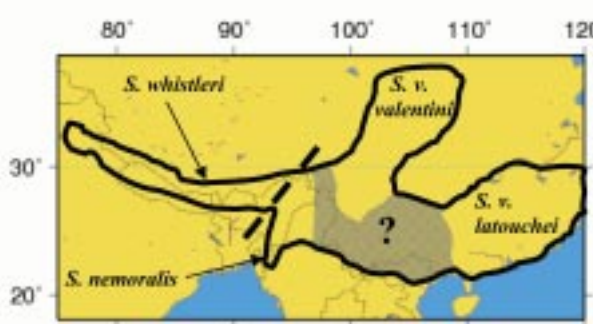
The Golden-spectacled Warbler complex

Few other groups of birds constitute so formidable an example of cryptic speciation as the *Seicercus* leaf warblers of the Golden-spectacled Warbler

complex. They have long been considered to form a group of three loosely associated species: Grey-cheeked Warbler *Seicercus poliogenys*, White-spectacled Warbler *S. affinis* and Golden-spectacled Warbler *S. burkii*. Recent research has almost quadrupled the number of species involved, and ongoing studies are likely to add even more species.

Intriguingly, up to four species can be found on a single mountain, each in its own narrow elevational band. However, on rare occasions up to three species have been found side-by-side at the same elevation in breeding condition. Separating species by plumage is often impossible in the field, and vocal knowledge is essential. Songs follow a common pattern of simple repetitive motifs, but some species incorporate more complex elements and trills. Interestingly, DNA shows that similarities in vocalisations are not necessarily due to close genetic kinship. This complex must be the most fascinating study object to students of bird evolution in the Oriental Region.

All the recent advances in our knowledge of *Seicercus* systematics we owe to the seminal contributions of two independent research teams: a Swedish one centred around Per Alström and Urban Olsson (e.g. Alström & Olsson 1999, Alström & Olsson 2000, Olsson *et al.* 2004) and a German one headed by Jochen Martens and the late Siegfried Eck (e.g. Martens *et al.* 1999, Martens & Eck 2000, Martens *et al.* 2002, Päckert *et al.* 2004). The two teams have not always agreed in their taxonomic conclusions, and it is fair to say that each has made concessions to the other. Current taxonomy is based on a combination of both teams' findings. Neither team has made recommendations for English names of the newly resulting species. In the following, each species of this complex will be looked at in more detail.



Bianchi's Warbler *Seicercus valentini*

- *S. v. valentini*
- *S. v. latouchei*

Both the Swedes and the Germans agreed that the name *valentini* refers to a largish Chinese member of the complex that consistently occupies the highest elevational zone wherever it co-occurs with other *Seicercus* species. *S. valentini* has now become known as "Bianchi's Warbler" in ornithological circles (e.g. Robson 2000), and the name should be maintained. Bianchi's Warbler is a non-triller: its simple repetitive song and its short call (*diu*) are of forceful, robin-like (*Erithacus*) character. It is widely distributed throughout the higher mountains of western and northern China.

MAGNUS GELANG

Plate 15. *Seicercus valentini valentini* Yunnan, China, May.

Vocally similar populations in eastern Chinese mountains vary slightly in plumage and call notes, and are separated as a distinct subspecies *S. v. latouchei*. Martens *et al.* (1999) erroneously applied this name to what is now known as *S. soror* (see below), but later acknowledged this mistake (Martens *et al.* 2002). Olsson *et al.* (2004) finally delivered genetic corroboration that *S. v. latouchei* is the sister group to *S. v. valentini*. The two are separated by 0.5–1% cytochrome-b divergence. Populations from northern Vietnam more closely resemble *S. v. valentini* in call notes; however, genetically they are separated from *S. v. valentini* and Guangdong populations of *S. v. latouchei* by 0.9% cytochrome-b divergence, while they are set apart from Fujian populations of the latter by only 0.4%.

Whistler's Warbler *Seicercus whistleri*

- *S. w. whistleri*
- *S. w. nemoralis*

The situation is similarly complicated in *Seicercus whistleri*, which is the Himalayan counterpart of Bianchi's Warbler. As both research teams agreed, the name *whistleri* refers to a non-trilling species that is always the higher one of two members of the complex occurring in the Himalayas. The territorial song of *S. whistleri* is extremely similar to *S. valentini* (with which it does not overlap in distribution). In fact, song differences are not discernible to the human ear, although they can be demonstrated in sonagrams. Calls, however, are very different between the two. Genetically,

URBAN OLSSON

Plate 16. *Seicercus whistleri whistleri*, China.

Bianchi's Warbler and *S. whistleri* (incl. *nemoralis*) are sister groups. The English name "Whistler's Warbler" has recently been applied in birders' circles (e.g. Robson 2000) and should be kept.

The enigmatic form *nemoralis* has been the subject of disagreement between the research groups. The name is tied to a specimen from the Lushai Hills (north-east India) close to Burma. Alström & Olsson (1999, 2000) recognised slight breast colour differences between the Western Himalayan *S. whistleri* and birds from the Central Himalayas through Burma, which led them to apply the name *nemoralis* to eastern birds all the way west to Nepal. In view of the identical territorial song of both forms and the slightness of colour differences, they classified *S. w. nemoralis* as a subspecies of Whistler's Warbler. In contrast, Martens *et al.* (1999, 2002) discarded colour traits as a useful taxonomic marker, but noted a discrete difference in tail length between specimens from the extreme east (i.e. Lushai Hills to Burma) and those from the remainder of the range. Consequently, they applied the name *nemoralis* exclusively to birds from Burma and neighbouring regions, and re-assigned populations from Bhutan, Sikkim and Nepal to *whistleri*.

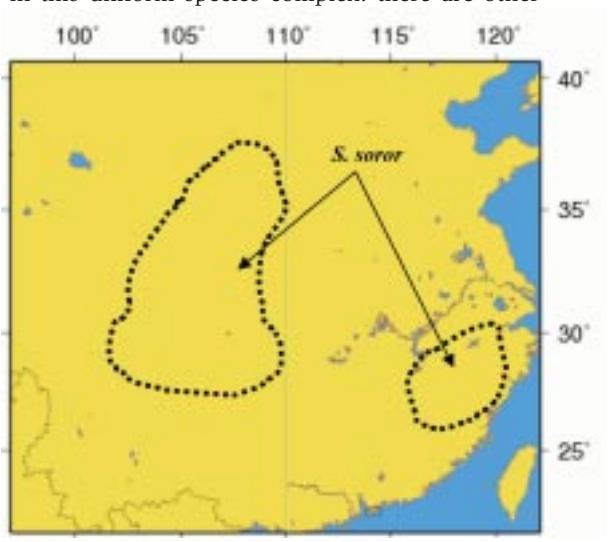
Luckily, Olsson *et al.* (2004) had recourse to samples from Western Burma as well as Nepal for their phylogenetic study of *Seicercus* warblers. It turned out that the Burmese samples form a very distinct group which is separated from *S. whistleri* by up to 2% cytochrome-b divergence. The Nepalese sample is genetically indistinguishable from *S. whistleri*, so Olsson *et al.* (2004) conceded that *nemoralis* is restricted to Burma and adjacent areas south of the Brahmaputra River. Meanwhile, the call notes of Burmese samples have been taped and turn out to "…differ markedly…" from *S. whistleri* (Olsson *et al.* 2004). Olsson *et al.* (2004) stopped short of elevating *nemoralis* to species rank, because genetic divergence towards *S. whistleri* is at the lower end of species-level differences, and because the songs appear to be similar. However, birders should keep in mind that an investigation into vocalisations may demonstrate a discrete split between *nemoralis* and *whistleri*, in which case *nemoralis* should be elevated to biological species level despite its borderline genetic differentiation.

S. w. nemoralis is possibly divided from nominate Whistler's Warbler by the Brahmaputra River. Its eastern boundary and potential contact zone with Bianchi's Warbler *S. valentini* is unknown. Recent tape-recordings of *Seicercus* call notes in Yunnan will potentially help shed light on the distributional boundaries of Bianchi's Warbler and *S. w. nemoralis* there.

"Alström's Warbler" *Seicercus soror* (monotypic)

This species was newly described by Alström & Olsson (1999), who realised that no other name was available to denote this distinct non-trilling member of the complex. *S. soror* has a wide breeding distribution in China and is usually the lowest member of the elevational chain where it co-occurs with other *Seicercus* warblers. *S. soror* has a plain song of simple repetitive motifs, similar in structure to Bianchi's Warbler, although much higher-pitched and flimsier in character. Its call is very distinctive.

Martens *et al.* (1999) initially misapplied the name *latouchei* to this species, but later (2002) acknowledged the validity of the newly coined *soror*. "Plain-tailed Warbler" has been used as an English name to denote this species in one recent field guide (Robson 2000) and will be the name used in a forthcoming handbook and English Names Committee list (in press). However, names alluding to plumage should probably be avoided in this uniform species complex: there are other



URBAN OLSSON

Plate 17. *Seicercus soror*, Sichuan, China, May.

URBAN OLSSON

Plate 18. *Seicercus omeiensis*, Sichuan, China, May.

members of the complex (e.g. *S. tephrocephalus*) which have a similarly plain tail with restricted white outer feathers. Therefore, "Plain-tailed Warbler" as an English moniker is non-distinctive and potentially confusing. Even though the introduction of multiple English names for new species should be avoided at all costs to minimise confusion, in this special case (and an additional one, see below) I discourage the use of the previously employed English name and instead propose "Alström's Warbler" as an extremely appropriate English name in honour of the singular contribution of this man to *Seicercus* systematics.

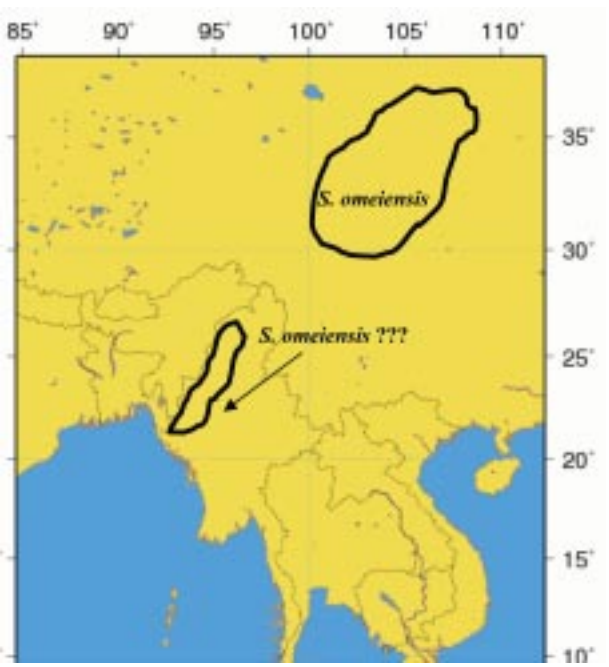
Martens's Warbler *Seicercus omeiensis* (monotypic)

Martens *et al.* (1999) described *S. omeiensis* as a new species for lack of other available names. (It now turns out that—at the time—another name may have been available: for a very confusing taxonomic thriller, see further below.) *S. omeiensis* inhabits fairly high altitudes above most other members of the complex in western and northern Chinese mountains, but it is always found below Bianchi's Warbler in the elevational chain. Its song is dominated by simple repetitions, yet this species frequently incorporates vehement trills into its repertoire. In song, it is very similar to *S. tephrocephalus*, although its call can be easily separated with experience.

This strong similarity between *S. omeiensis* and *S. tephrocephalus* has led to much initial confusion. For example, Alström & Olsson (1999) were reluctant to award *S. omeiensis* taxonomic standing for the time being and merely ascribed it to a nameless "group" within *S. tephrocephalus*, though they noted strong vocal and slight morphological differences, and remarked that it might deserve to be named. In contrast, Martens *et al.* (1999), who described the species, had preliminary DNA data at hand and knew that *S. omeiensis* was genetically distinct. Meanwhile, both teams have added more genetic data (Olsson *et al.* 2004, Päckert *et al.* 2004), which reveal—against all expectation—that *S. omeiensis* is much more closely related to Bianchi's, Whistler's and Alström's Warbler than to *S. tephrocephalus*.

S. omeiensis will be called "Omei Spectacled Warbler" in a forthcoming handbook and English Names Committee list, but the name "Martens's Warbler" has already been introduced by Dickinson (2003) and is certainly the more appropriate choice to honour the person who described this taxon for his immense contributions to *Seicercus* systematics.

The southern extent of the breeding range of *S. omeiensis* is still clouded in mystery. Ten *omeiensis* specimens from Burma with yellowish-tinged backs vividly contrast against a series of 11 specimens



with much duller greenish backs from China (see photos in Eck & Töpfer 2005). Although several people have failed to find Burmese *omeiensis* in the summer (P. Alström *in litt*. 2006), it is certainly conceivable that these birds may represent an unknown southern breeding population of *S. omeiensis* (Martens *et al.* 2002). Preliminary DNA data confirm close affinities with other *S. omeiensis* specimens (J. Martens *in litt*. 2005).

To make things more complicated, Martens *et al.* (2002) insist that the name *tephrocephalus* Anderson, 1871, actually applies to these Burmese birds, rather than to the species that we now call *S. tephrocephalus*. The type specimen of *tephrocephalus* is lost, but Alström & Olsson (1999) concluded that it belonged to the species that now bears this name because of its matching description, and therefore designated a neotype to link this name with the species they had in mind. However, a painting of the type specimen is illustrated in Anderson (1878) and seems to depict a *Seicercus* warbler exhibiting some traits that do not conform to what is now called *S. tephrocephalus* (Martens *et al.* 2002). Fortunately, to avoid further confusion, Martens *et al.* (2002) suggested that Alström & Olsson's (1999) neotype designation should be accepted despite the potential error involved. Future research may or may not demonstrate that the richly coloured Burmese birds which now lack a name are subspecifically distinct from *S. omeiensis*.

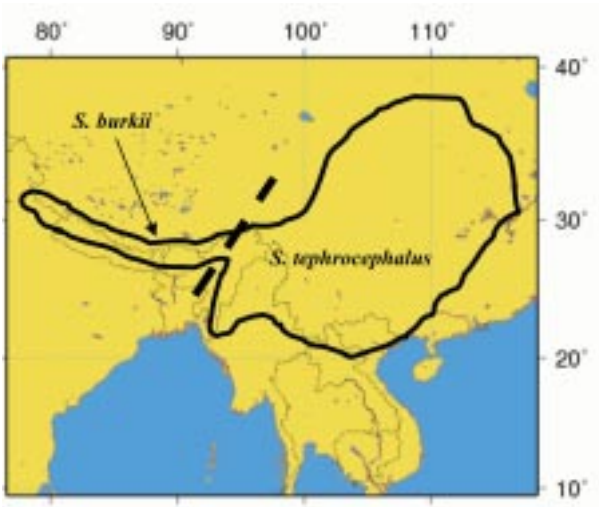
Grey-crowned Warbler *Seicercus tephrocephalus* (monotypic)

As just mentioned, Alström & Olsson (1999) designated a neotype to link this species with the name *tephrocephalus* Anderson, 1871, but Martens *et al.* (2002) contend it is possibly not the species that Anderson had actually described. Nevertheless, Martens *et al.* (2002) suggested that this neotype designation should be accepted to preclude further confusion. Therefore, *S. tephrocephalus* now refers to a species of wide Chinese and northern Indochinese/Burmese distribution that inhabits mid- to low elevational levels.

Seicercus tephrocephalus is a triller with a song that closely resembles *S. omeiensis*, although the two are not particularly closely related and possess very different call notes. In many areas of its range (e.g. Taibai Shan [Shaanxi], Phan Si Pan [Vietnam] etc.), it is associated with secondary habitat, as primary forest is all but gone from its home elevations. Further ecological research is necessary to see whether it has newly adapted to this circumstance or has always been more of an open-country bird. Slight differences in call notes can be made out across its huge range, but these probably refer to clinal variation. Distinct breaks

MAGNUS GELANG

Plate 19. *Seicercus tephrocephalus* Yunnan, China, May.



in vocal or any other characters have not yet been documented. The English name "Grey-crowned Warbler" has been employed in two recent field guides to denote this species (Robson 2000, Rasmussen & Anderton 2005) and should be maintained, even though it is uninformative and adds to a long list of "grey-crowned" bird names.

Green-crowned Warbler *Seicercus burkii* (monotypic)

Seicercus burkii used to be the epithet employed for the Golden-spectacled Warbler, the very species which has lent its name to the entire complex. Ironically, the name now refers to the only species within the complex that is of great conservation concern. Both the Swedish and the German research teams completely agreed that *Seicercus burkii* is a triller of wide Himalayan distribution that always occurs below the range of *S. whistleri*. It is getting more and more difficult to find *S. burkii* within the Nepalese part of its range as forest rapidly dwindles away at these elevations. Its song is generally similar to *S. tephrocephalus* and *S.*

omeiensis, although its call is distinctive. DNA data demonstrate that it is the sister species of the former, although it is genetically quite distant from the latter (Olsson *et al.* 2004, Päckert *et al.* 2005). "Green-crowned Warbler" has been used by Rasmussen and Anderton (2005) as an English name and should thus probably be retained..

Grey-cheeked Warbler *Seicercus poliogenys*

This species, established as long ago as 1847, ranges from central Nepal through Burma to northern and southern Vietnam. For decades deemed close to White-spectacled and Golden-spectacled Warblers, it came as something of a surprise to see that it is nested right within the complex. Olsson *et al.* (2004) showed that both Green-crowned and Grey-crowned Warbler are much more closely related to Grey-cheeked than to other members of the complex, such as Bianchi's or Martens's Warbler.

A second surprise came to light, however: the Grey-cheeked sample from West Bengal (north-east India) shows spectacular genetic divergence from the samples from Yunnan and South Vietnam (6.9–7.3% cytochrome-b). This type of divergence is way above the genetic distances that are usually displayed by closely related warbler species. Unfortunately, nothing is published about potential vocal or plumage differences between the eastern and western forms, let alone their potential contact zones. Therefore it is too early to split Grey-cheeked Warbler into an eastern and a western species at present, although such a split is almost guaranteed: tape-recordings and additional genetic samples confirm that the two clades show vocal differences (P. Alström *in litt*. 2006). The publication of these results is eagerly awaited to confirm where the geographical break between the forms is located.

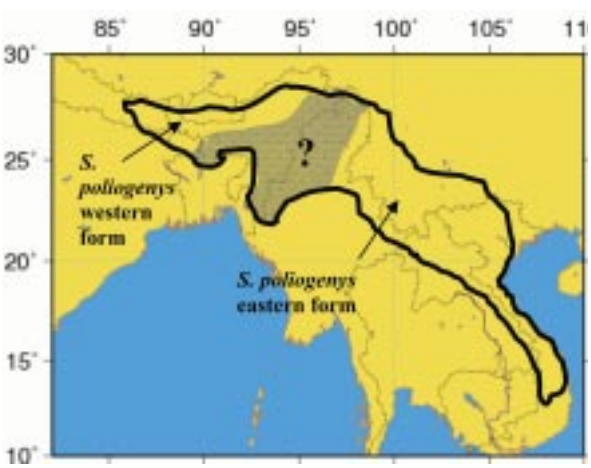


Plate 20. *Seicercus poliogenys*, Digboi, Assam, India, May 1998.

JON HORNBUCKLE

Even within the two eastern samples from Yunnan and South Vietnam, respectively, genetic divergence is respectable at 1.7% (cytochrome-b). However, the two samples are separated by a huge geographic distance, and the DNA divergence may not be meaningful once intervening populations are sampled. Nevertheless, there might be more taxonomic structure to the Grey-cheeked Warbler than we recognise at present, and more attention will have to be given to vocalisations and additional DNA sampling.

White-spectacled Warbler *Seicercus affinis*

- *S. a. affinis*
- *S. a. intermedius*
- *S. a. ocularis*

The least satisfying resolution within the Golden-spectacled Warbler complex has been achieved with respect to the White-spectacled Warbler *S. affinis*. Both Olsson *et al.* (2004) and Päckert *et al.* (2004) demonstrated that *S. affinis* is firmly nested within the other members of the complex. The altitudinal distribution of *S. affinis* is nested between though overlaps widely with *S. omeiensis* and *S. soror*. All the forms included within former *S. affinis* are characterised by a very melodious song, with much richer and more complex repetitive motifs than the other members of the complex, and short trills of an extremely musical and pleasing nature. As with several other species groups within the complex (e.g. *S. valentini/w. whistleri/w. nemoralis* or *S. burkii/tephrocephalus*), the individual "forms" differ greatly in calls but less conspicuously in song. The white ocular ring that lends the species its English name is a field mark of little reliability as it is yellow in some populations (see below). More studies are needed to look into geographical variation in this trait.

There are several fairly deep genetic subdivisions within those samples of *S. affinis* that have been investigated, but at the same time many parts of the range have not been incorporated in genetic sampling, including nominate *affinis* itself (from the Himalayas). In their phylogenetic study,

Olsson *et al.* (2004) included samples from a newly discovered population in Sichuan—classified as the subspecies *intermedius* but treated by Martens *et al*. 1999 as *Seicercus* sp. (see Alström & Olsson 2000)—as well as other *intermedius* specimens from Guangdong and Fujian and the isolated subspecies *ocularis* from the Da-Lat Plateau in South Vietnam. Genetically, specimens from all the sampled localities differ, with the birds from Fujian being most distinct (at 1.9–2.5% cytochrome-b divergence), the birds from Guangdong and Sichuan being most similar to each other (at only 0.8%) and the birds from the isolated Da-Lat Plateau being of intermediate distinctness (at 1.5–1.9% divergence from other samples). The Sichuan and Guangdong "*intermedius*" are more closely related to *ocularis* than to *intermedius* from Fujian, despite that the Sichuan, Guangdong and Fujian samples are similar in plumage, while differing markedly from *ocularis* by, e.g., their yellow rather than white eye-rings. With only this genetic information at hand, and with DNA data from further west missing, it would be impossible to tease out whether discrete species are at play, or whether all populations intergrade into each other.

However, vocal data have meanwhile come to light (work in preparation by P. Alström, J. Martens, U. Olsson and F. E. Rheindt) that show a discrete break in calls and potentially songs within the *S. affinis* complex. Again, it is slightly too early to comment, but biological species status is a reasonable possibility for the isolated *S. ocularis* and the population from Fujian. The type specimen of *intermedius* is from Fujian Province, so this name clearly applies to this isolated population. Fujian specimens with a conspicuous green (rather than grey) median crown-stripe have variously been described as "*cognitus*" or as a mere colour morph of *intermedius*. Olsson *et al.* (2004) showed that these birds are not distinguishable on a genetic basis and reported the existence of intermediate specimens and indistinguishable vocalisations. Therefore *cognitus* should be merged with *intermedius*. If split, the new species-level *S. intermedius* would therefore refer only to birds from Fujian.

Where does this leave the remaining populations of *S. affinis*? We do not know, since nothing has been published about either the genetics or the vocalisations of any populations south and west of Sichuan. There may be additional

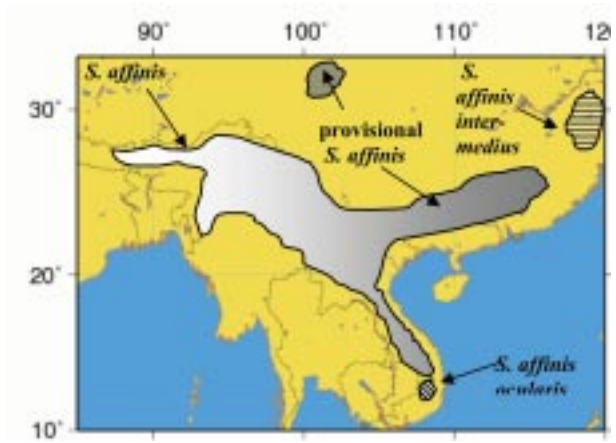


Plate 21. *Seicercus affinis intermedius* ("*cognitus*"), Fujian, China, April.

URBAN OLSSON

Plate 22. *Seicercus affinis ocularis*, S Vietnam, April.

URBAN OLSSON

Plate 23. *Seicercus affinis intermedius* ("*intermedius*"), Sichuan, China, May.

URBAN OLSSON

breaks between populations, e.g. in Burma, the Eastern Himalayas or Yunnan. So long as nothing is known about these populations, the Sichuan and Guangdong birds will have to be subsumed under *S. affinis*. The type specimen of *affinis* is from Nepal. Therefore it is conceivable that the relatively well-known population from Sichuan currently lacks a proper scientific name. It is up to the birders to go out there and tape the birds, so that we can get yet another step closer to untangling the systematics of this fascinating complex.

Acknowledgements

I am most grateful to P. Alström, N. J. Collar and J. Martens (in alphabetical order) for their detailed and constructive input on the first version of this paper. Without their kind cooperation, this taxonomic review would have suffered a few serious flaws. T. Price deserves warm thanks for a series of helpful points.

References

Alström, P. & Olsson, U. (1990) Taxonomy of the *Phylloscopus proregulus* complex. *Bull. Brit. Orn. Club* 110: 38–43.

Alström, P. & Olsson, U. (1999) The Golden-spectacled Warbler: a complex of sibling species, including a previously undescribed species. *Ibis* 141: 545–568.

Alström, P. & Olsson, U. (2000) Golden-spectacled Warbler systematics. *Ibis* 142: 495–500.

Alström, P. & Ranft, R. (2003) The use of sounds in avian systematics, and the importance of bird sound archives. Bull. Brit Orn. Cl. Supplement 123A: 114–135.

Alström, P., Olsson, U. & Colston, P. R. (1992) A new species of *Phylloscopus* warbler from central China. *Ibis* 134: 329–334.

Alström, P., Olsson, U. & Colston, P. R. (1995) Revaluation of the taxonomic status of *Phylloscopus ricketti goodsoni* Hartert. *Bull. Brit. Orn. Club* 115: 53–57.

Alström, P., Olsson, U. & Colston, P. R. (1997) Re-evaluation of the taxonomic status of *Phylloscopus proregulus kansuensis* Meise. *Bull. Brit. Orn. Club* 117: 177–193.

Anderson, J. (1878) Anatomical and Zoological Researches: Comprising an account of the zoological results of the two expeditions to western Yunnan in 1868 and 1875; and a monograph of the two genera, Platanista and Orcella. I (text), II (plates), London.

British Ornithologists' Union Records Committee (BOURC) (1997) Twenty-third report. *Ibis* 139: 197–201.

Chrabryj, W. M., Loskot, W. M. & Vietinghoff-Scheel, E. (1989) *Phylloscopus inornatus*. In H. Dathe & W. M. Loskot, eds. *Atlas der Verbreitung paälarktischer Vögel*, 16. Berlin: Akademie-Verlag.

Derham, W. (1718) *Philosophical letters between the late Mr. Ray and several of his ingenious correspondents, natives and foreigners*. London: William and John Innys, St Paul's Churchyard.

Dickinson, E. (2003) The Howard & Moore Complete Checklist of the Birds of the World. Third edition. Princeton Univ. Press, Princeton, N.J.

Eck, S. & Töpfer, T. (2005) Die Vogelsammlung des Dresdner Tierkundemuseums: Forschung an „Lokalserien". *Falke* 52: 277–279.

Helbig, A. J., Seibold, I., Martens, J. & Wink, M. (1995) Genetic differentiation and phylogenetic relationships of Bonelli's Warbler *Phylloscopus bonelli* and Green Warbler *Phylloscopus nitidus*. *J. Avian Biology* 26: 139–153.

Helbig, A. J., Martens, J., Seibold, I., Henning, F., Schottler, B. & Wink, M. (1996) Phylogeny and species limits in the Palaearctic chiffchaff *Phylloscopus collybita* complex: mitochondrial genetic differentiation and bioacoustic evidence. *Ibis* 138: 650–666.

Irwin, D. E. (2002) Phylogeographic breaks without geographic barriers to gene flow. *Evolution* 56: 2383–2394.

Irwin, D. E., Alström, P., Olsson, U. & Benowitz-Fredericks, Z.M. (2001a) Cryptic species in the genus *Phylloscopus* (Old World leaf warblers). *Ibis* 143: 233–247.

Irwin, D. E., Bensch, S., Price, T. D. (2001b) Speciation in a ring. *Nature* 409: 333–337.

Irwin, D. E., Bensch, S., Irwin, J. H. & Price, T. D. (2005) Speciation by distance in a ring species. *Science* 307: 414–416.

Lambert, F. R. (1993) Some key sites and significant records of birds in the Philippines and Sabah. *Bird Conserv. Internatn.* 3: 281–297.

Martens, J. (1996) Vocalizations and speciation of Palearctic birds. Pp. 221–240 in D. E. Kroodsma & E. H. Miller, eds. *Ecology and evolution of acoustic communication in birds*. Ithaca, NY: Cornell University Press.

Martens, J. (1980) *Lautäußerungen, verwandtschaftliche Beziehungen und Verbreitungsgeschichte asiatischer Laubsänger (Phylloscopus)*. *Advances in Ethology 22*. Berlin, Parey.

Martens, J. & Eck, S. (2000) Der *Seicercus burkii*-Komplex im Himalaya und China oder: Schätzen wir die Diversität der Singvögel falsch ein? *Orn. Anzeiger* 39: 1–14.

Martens, J., Eck, S., Päckert, M. & Sun, Y.-H. (1999) The Golden-spectacled Warbler *Seicercus burkii*—a species swarm (aves: Passeriformes: Sylviidae), part 1. *Zool. Abhandl. Mus. Dresden* 50: 281–327.

Martens, J., Eck, S. & Sun, Y.-H. (2002) Methods of systematic and taxonomic research on passerine birds: the timely example of the *Seicercus burkii* complex (Sylviidae). *Bonn. zool. Beitr.* 51: 109–118.

Martens, J., Tietze, D. T., Eck, S., & Veith, M. (2004) Radiation and species limits in the Asian Pallas's warbler complex (*Phylloscopus proregulus* s.l.). *J. Orn.* 145: 206–222.

Olsson, U., Alström, P. & Colston, P.R. (1993) A new species of *Phylloscopus* warbler from Hainan Island, China. *Ibis* 135: 3–7.

Olsson, U., Alström, P. & Sundberg, P. (2004) Non-monophyly of the avian genus *Seicercus* (Aves: Sylviidae) revealed by mitochondrial DNA. *Zoologica Scripta* 33: 501–510.

Olsson, U., Alström, P. Ericson, P. G. P. & Sundberg, P. (2005) Non-monophyletic taxa and cryptic species—evidence from a molecular phylogeny of leaf-warblers (*Phylloscopus*, Aves). *Molec. Phylogenetics Evol.* 36: 261–276.

Päckert, M., Martens, J., Sun, Y.-H. & Veith, M. (2004) The radiation of the *Seicercus burkii* complex and its congeners (Aves: Sylviidae): molecular genetics and bioacoustics. *Organisms, Diversity and Evolution* 4: 341–364.

Rasmussen, P.C. & Anderton, J.C. (2005) *Birds of South Asia: the Ripley guide*. Barcelona: Lynx Edicions.

Robson, C. (2000) *A guide to the birds of South-East Asia.* London: New Holland Publishers.

Frank E. Rheindt,
Genetics Department, University of Melbourne,
Parkville Campus, Melbourne, Australia

ID FORUM

Adult large white-headed gulls at Okha, Gujarat, India—a photo-documentation

ANDREAS BUCHHEIM

Introduction

Although many new criteria for identifying large white-headed gulls in Asia have been proposed in recent years (see, e.g., Kennerley *et al*. 1995, Ujihara & Ujihara 2000), uncertainty still exists over the ID of most taxa, especially with respect to non-adults. Malling Olsen & Larsson (2003) summarise most information, and Yésou (2002, 2003), whom I follow here, has produced an important overview of gull taxonomy.

Despite the lack of detailed knowledge on the range of plumage variation—to mention just one aspect—observers usually agree over the identity of gulls at certain sites, chiefly based on distributional probability. Much has still to be done to reach proper ID, especially when dealing with the single out-of-range bird. The status of various rarer taxa at given places is often very tentative.

Large white-headed gulls of the *Larus argentatus–fuscus* complex have caused birdwatchers headaches wherever more than one species are known to occur. Several members of this group are found in Asia. The northern coasts are inhabited by the forms *heuglini*, "*taimyrensis*", "*birulai*" and *vegae*, whereas Central Asia holds *cachinnans*, *barabensis* and *mongolicus* (each from west to east). Together with *glaucescens*, *hyperboreus* (of the nominate subspecies and *pallidissimus*) and *schistisagus*, about ten taxa occur in the OBC region regularly. All taxa are more or less migratory and winter along South Asia's coastline, some birds possibly having to cover more than 6,000 km to reach their wintering grounds. Breeding grounds, wintering grounds, degree of overlap between taxa and behavioural traits are all poorly known. With the exception of pure individuals of either *hyperboreus* (either subspecies), *schistisagus* or *glaucescens,* the ID of Asia's large gulls is far from being straightforward.

My personal interest in the large white-headed gulls has brought me to Asia several times and I here present photographic documentation of wintering adult gulls that I have seen in Okha, Gujarat, western India. This paper is mainly intended to provide a preliminary review of the problems concerning the ID of these birds and to encourage more interest in studying them. Gulls are the ideal object for thorough plumage studies, first because of their great plumage variation, second because they usually allow direct comparison with other individuals, being social birds which congregate at certain places, and third, very importantly, they are reasonably tame.

Status of the taxa in India

Although much of the past confusion about the status of each taxon in India has been due to ID difficulties, different taxonomic opinions have also played their part. Until recently, almost every pale-mantled large white-headed gull was assigned to Herring Gull, *L. argentatus* and every darker one to Lesser Black-backed Gull *L. fuscus* (Ali & Ripley 1987). These authors listed three forms: *mongolicus*, *taimyrensis* (both as subspecies of Herring Gull) and nominate *fuscus*.

With Grimmett *et al*. (1998) neither Herring nor Lesser Blackback stayed on the Indian list, and two "new" species were added. The first was Yellow-legged Gull *L. cachinnans* (this was clearly owing to a conservative view, as in continental Europe the scientific name of Yellow-legged Gull was *L. michahellis* and *L. cachinnans* was already Caspian Gull [Klein & Buchheim 1997]), with races *barabensis*, which was given the status of potential visitor, and nominate *cachinnans* (birds from the area east of the Black Sea's west coast), regarded as an uncommon but widespread winter visitor. The second was Heuglin's Gull *L. heuglini*, which had formerly been treated as conspecific with *fuscus*. Nominate *heuglini* had the status of winter visitor, mainly to west coasts, and the subspecies "*taimyrensis*" was mentioned but said to be unlikely to occur in the region.

Two years later, Kazmierczak & van Perlo (2000) produced another list of large white-headed gulls. These authors still ignored results of continental research and called *L. cachinnans* Yellow-legged Gull, now with three subspecies: nominate, *barabensis* and *mongolicus* (none with any status information). Heuglin's Gull was listed with two subspecies, nominate and "*taimyrensis*" (again without status information). Lesser Black-backed Gull, *L. fuscus* was listed but only to indicate that old records of this form should be attributed to nominate *heuglini*. Two species, Vega Gull *L. vegae* and Armenian Gull *L. armenicus*, were also mentioned but only as good candidates for future records.

Backed up with many new insights into the taxonomy of the "Herring-Gull complex" Rasmussen & Anderton (2005) listed five taxa as being hypothetical (thus without a definite record): Armenian Gull, Caspian Gull (!), Mongolian Gull *L. mongolicus*, Lesser Black-backed Gull and "*taimyrensis*". The latter was stated to be a subspecies of Heuglin's Gull but with both its taxonomic status and name open to debate. Only two taxa were left: Heuglin's Gull *L. heuglini heuglini* and "Steppe" Gull *L.* [*heuglini*] *barabensis* (all specimens formerly labelled either *mongolicus* or *cachinnans* having been re-identified by Rasmussen & Anderton). Both were regarded as common winter visitors, mainly along west coasts.

Situation at Okha: total numbers

The fishing village of Okha is situated at the north-westernmost point of the Kathiawar Peninsula, Gujarat, on the southern shores of the Gulf of Kutch. Here a reasonable fishing industry exists, with the larger fish being processed inside halls, thus out of the reach of the gulls. The smaller fish and the by-catch are put outside on the ground/soil for drying and, being only casually guarded, make easy pickings for gulls, Gull-billed Terns *Gelochelidon nilotica* and Black Kites *Milvus migrans*. The majority of gulls are small, mainly Black-headed *L. ridibundus*, plus occasional Brown-headeds *L. brunnicephalus*. However, during my visit in late January 2004 about 1,200 adult large white-headed gulls scavenged the area (plus about 180 first-winters and roughly 100 immatures not considered in this paper). When not feeding, the gulls roosted on flat ground in large groups. Fishermen and the odd dog often disturbed them, but rarely intentionally (see Plate 1 for a loafing group). Thus the gulls are used to the presence of humans and allowed approach down to a few metres. All photographs were taken from a car.

Ageing large gulls

I defined birds as adult which showed no traces of brown on their body (not head) plumage: especially the wings and tail had to be immaculate. No brown was allowed on the alula, though it is known from European gulls that even birds in their eighth winter (from ringed birds, supposedly fully mature then) can have dark markings on the alula (G. Neubauer pers. comm.; pers. obs.). The darker taxa often show clearly demarcated off-black markings on the primary coverts. Birds showing this (infrequent in

Plate 1. Loafing group of *heuglini* plus 1 *barabensis* (third from left: different from *heuglini* by paler grey upperparts, all-white head, bright yellow legs, primary moult completed). Upperpart tone of *heuglini* fairly consistent, slight differences in picture due to different angles of birds to the photographer. Note state of primary moult and amount of head streaking as well as leg coloration.

ANDREAS BUCHHEIM

heuglini, less so in *barabensis*) were excluded from the analysis. Dark markings on the bill were accepted as a sign of non-breeding season and are, unless very large in extent, not a sign of immaturity.

Plumage and bare part details (adults only)
These were noted at a distance of about 20 m with the aid of 10 × 40 binoculars. For different reasons (i.e. disturbance) it was not always possible to check all the below-mentioned features on the same bird, which gave rise to the different sample sizes. As the samples were taken on different days, some individuals could have been checked several times. It was easier to omit double checking in the rarer taxa, but impossible in the most numerous.

Primary moult
Adult gulls usually start with primary moult in their colonies when they have completed their clutch. As a consequence, birds that breed at high latitudes start later with moult and—even more important—interrupt it during their long migration and finish it in their wintering grounds. By contrast, birds of the "southern belt", which start breeding earlier and have to cover less distance to reach their wintering grounds, can complete primary moult without any interruption. The time of finishing moult gives a rough indication of the origin of a gull. At a given time, the outer primaries of birds from the south should be older than those of gulls coming from the Arctic. A complete set of primaries with slightly abraded apical spots at the end of January should point to birds that inhabit the southern belt. Birds that have not completed primary moult by this date (or later) should belong to the northern breeders.

Primary moult state
Gulls moult their primaries in descending order. Thus the innermost primary is shed first and the outermost is renewed last, with the others one by one outwards. Moult interruption has been shown for some taxa, i.e. *fuscus* (Jonsson 1998a) and *heuglini* (Rauste 1999), which adds some further complications.

At first and if present, the number of unmoulted old primaries is counted from 10 (= all = no primary moult) to 0. For the high values (from 10 to 6), this is a bit more time-consuming because the inner primaries are covered by the tertials, so that one has to wait until the bird raises its wings, hopefully for preening and not for taking flight. On

Plate 2. Adult *heuglini* showing the most *graellsii*-like head streaking (very even) plus a very pale eye (score 1). Birds like this only differ in their late primary moult (here: P8 longest) from average *graellsii*.

ANDREAS BUCHHEIM

ANDREAS BUCHHEIM

Plate 3. Rather large (probably male) individual adult *heuglini* with bright yellow legs and much dark on bill (both mandibles), eye score 2, head streaking accentuated on hindneck.

Plate 4. Pale-eyed adult *heuglini* (eye score 1), dark marking on lower mandible only, moult score: P8 longest (note that P9 on far wing is longest).

ANDREAS BUCHHEIM

ANDREAS BUCHHEIM

Plate 5. A short-legged slim *heuglini*, probably female, eye score 3, primary moult complete, head streaking concentrated on hindneck.

the darker taxa, the number of old outer primaries can be difficult to count owing to complete abrasion of the (white) apical spots: the whole area then appears solid dark brown or black and the observer has to approach the birds very close.

If the outermost primary has been shed, I note which primary is the longest on the folded wing. The usually lowest value will be primary 6 (P6), as in many cases this primary will be grown beyond P5 before P10 is dropped. If P10 is longest it means that moult is finished but in practice this and P9 longest are combined, as a fully grown P9 (and not P10, which in most cases is shorter than P9 even if fully grown) forms the wing-tip in many individuals. For those taxa with known moult interruption, like *fuscus* (not dealt with here) or *heuglini*, the number of new *vs* old primaries should be noted (during migration time). Certainly this is not an easy task because the inner primaries are covered by the tertials, so that these feathers look fresher than the exposed ones even when they are of the same age (check the primary coverts for moult contrasts in difficult cases). No such problems occurred at Okha as I visited the site in late winter.

For all features, the decision of borderline cases was made subjectively.

Pattern of head streaking

Most taxa acquire dark markings on the head and sometimes breast-sides outside the breeding season. There is a great deal of variation in the intensity and pattern of this head streaking. It is not well known—not even in Europe, where gulls have been studied by many and for a long time—whether the intensity (at any given time) of head streaking is correlated with the age (the older the less) or indicates the fitness (the fitter the less) of an individual, reflects a different timing of moult in these feathers (which could also indicate fitness), or is simply an individual feature.

Colour of legs (tarsus)

The colour of the tarsus can provide additional information regarding the ID of gulls. I distinguished between bright yellow, pale yellow, yellow-pink (pinkish with yellow), grey-pink, pink and bright pink, following Zagalska-Neubauer *et al*. (submitted).

Iris pigmentation

The degree of pigmentation of the iris was checked on one eye only, regardless of side. I am unaware of any detailed study of individual eye colour, and

ANDREAS BUCHHEIM

Plate 6. Also a probable female *heuglini* with delicate proportions, eye score 4, primary moult completed, just a few head-streaks left, dark markings on both mandibles.

assume that differences (if any) are negligible or irrelevant. Pigmentation of the iris was assigned to five categories following Zagalska-Neubauer *et al*. (submitted): 1—pure pale with no dark pigmentation; 2—a few tiny dark spots (1–10% of iris surface covered by black spots); 3—many tiny or big dark spots, giving the impression of dark iris at a distance (11–50% of black spots); 4—lots of dark spots (covering 51–90%), at a distance looking like a totally dark eye; 5—dark spots covering all or almost all of the iris surface (91–100%). Categories 3–5 give the impression of a dark-eyed bird in the field.

Bill patterning

For the bill pattern, categories followed my own unpublished criteria and Yésou (2001). Presence of black markings: none, upper mandible, lower mandible, both mandibles and complete ring. Size of gonys spot: normal (on lower mandible only, reaching the cutting-edge), reduced (lower only, not reaching the cutting-edge), large (extending onto upper mandible).

Darkness of upperparts

Lars Jonsson introduced the once easily available "Kodak Grey Scale" to the gull-watching community. Originally designed for adjusting photographs, this scale is now widely used for characterising the shade of gull upperparts. Using the scale in the field is difficult (*contra* Gibbins 2003), as birds and the scale have to be checked under similar conditions (same light and same distance from the observer, and with the bird preferably in the hand). Therefore I concentrated on recording relative values (darkest, intermediate and lightest grey). Of course, birds were checked under similar light conditions and angle to the observer. The Grey Scale range variation in Malling Olsen & Larsson (2003) gives no information on sample size or on the relative frequency of each value, so is only a very rough indicator of the darkness of a gull's feathers; the reader is left speculating whether the range can be regarded as being fully or only partly known.

Jizz (structure)

Different proportions result in slightly different taxon profiles. These proportions include size (general), bill size (length and depth), tarsus and tibia lengths, wing-projection, and bulk. The apparently different position of the eye could be a result of the length and thickness of the hindneck feathers, and possible differences in the skull; but

ANDREAS BUCHHEIM

Plate 7. *L. heuglini* with brightly coloured bare parts, eye score 2, primary moult completed, dark markings on both mandibles (just tiny spot on upper).

it has to be borne in mind that females are smaller than males and sometimes show a distinctly different jizz.

Results

Adult upperpart coloration plus jizz (structure)

Three types of adult gull were seen: one common dark taxon and two rare paler taxa. The dark taxon was identified as *heuglini* on the basis of the shade of the upperparts, while the paler taxa differed strongly in jizz from each other. The smaller and more delicately proportioned of the two was the second most numerous taxon (13 adult individuals seen) and was identified as *barabensis*. The third taxon also showed paler mantle and wing coverts than *heuglini* (not compared directly with the *barabensis*) but was really a "size" bigger than even the biggest *heuglini* present. These birds (only three adults seen) had big heads, big bills, looked overfed (fat) and could not be identified.

Moult status of adults

Details are in Table 1. About 45% of *heuglini* checked had not yet completed their primary moult, whereas all adult *barabensis* not only had a complete new set of primaries but also already showed slightly abraded apical spots, indicating that they had completed moult quite a while ago. All three adults of the third taxon were like *heuglini* in timing of primary moult.

Head streaking

Only two *heuglini*, out of 158 carefully checked, had a completely white head (1.2 %). In contrast, all *barabensis* were in breeding plumage (Plates 1, 11–13) and thus all had white heads with one exception, a bird showing very few streaks on the hindneck. The head streaking of *heuglini* either was concentrated on the hindneck (as a shawl, the commonest type) or covered the head (behind the eyes) plus the hindneck, but with

Table 1. State of primary moult in adult large white-headed gulls *Larus* at Okha, end of January 2004.

State	*heuglini*	*barabensis*	unidentified
P9+10old	1	0	0
P10old	6	0	0
P6longest	3	0	0
P7longest	18	0	0
P8longest	75	0	2
complete	127	13	1
sample	230	13	3

ANDREAS BUCHHEIM

Plate 8. Dark-eyed *heuglini* (eye score 5), no dark markings on bill, normal gonys spot, primary moult about to be completed (score: complete: small white dot on far wing = tip on P10), head streaking heaviest on hindneck.

Plate 9. Pale-eyed *heuglini* (eye score 2: just few tiny dark spots visible), dark markings on both mandibles, quite even head streaking, P7 longest.

ANDREAS BUCHHEIM

fine streaks on the head and more obvious blotches on the neck (but see Plate 2 for an unusual strongly and evenly patterned bird). The third taxon (Plates 15–17) showed winter head streaking like *heuglini*.

Iris pigmentation
Of 97 checked *heuglini* 35% gave the impression of dark eyes in the field (Table 2). The other taxa did not show any trend (small sample size each).

Bill patterning and size of gonys spot
See Tables 3 and 4. Of the 164 *heuglini* checked, 27% had no dark markings on the bill.

Leg coloration
See Table 5. The average brightest yellow leg coloration was recorded on *barabensis* (N = 5; 40% showed pale yellow and the rest bright yellow, cf. Plate 1). Leg colour of the three unidentified adults was pink or grey-pink. *Heuglini* (N = 192) showed a range between pinkish-yellow (almost 36 %) and bright yellow (12.5 %) (but not as bright as in *barabensis*), with the majority showing pale yellow legs (51.6%).

Discussion
The occurrence of *heuglini* is not a surprise. Leaving aside the remote chance of a western form of Lesser Black-backed Gull *L. fuscus graellsii* travelling that far to the east, the ID should be regarded as safe. Gulls identified as *heuglini* differed from average *graellsii* by late primary moult, typical of high-latitude breeders. It has to be stressed that moult timing and speed are variable within a taxon (Table 1) and related to the breeding status, age and possibly other factors. In *graellsii*, dark-eyed adults are at most very rare if they exist at all, so that the darkish eyes of the Okha gulls are an additional pointer to *heuglini*. Compared to earlier studies, it is noteworthy that the Okha birds showed a higher degree of iris pigmentation (35% compared to < 10 % in Rauste 1999). If one reasonably assumes that birds at the easternmost end of the species's regular wintering range represent the easternmost breeders, this would suggest a cline in this character. A similar tendency (darker eyes in eastern populations) is known from Herring Gull in Europe. Indeed, gull researchers are well aware of the enormous variation in eye pigmentation in all Asian taxa except Glaucous Gull.

The vast majority of adult *heuglini* showed dark markings on the bill, and the majority had black on both mandibles. Malling Olsen & Larsson (2003) mention that *heuglini* only occasionally shows dark markings, especially on the upper mandible. At Okha, many birds showed black only on the lower mandible. This divergence cannot be explained easily but Malling Olsen & Larsson also indicate the same for Herring Gull (dark markings most numerous on upper mandible), which is in fact wrong (own data, unpublished). It might well be that their sample was taken further west and that there is an average difference in the frequency of dark markings between eastern and western *heuglini*, as with iris pigmentation.

Table 2. Degree of iris pigmentation in adult large white-headed gulls *Larus* at Okha, end of January 2004.

Score	*heuglini*	*barabensis*	unidentified
1	31	1	0
2	32	1	1
3	14	0	1
4	11	1	1
5	9	1	0
sample	97	4	3

Table 3. Bill pattern of adult large white-headed gulls *Larus* at Okha, end of January 2004.

Black	*heuglini*	*barabensis*	unidentified
no	45	0	0
upper	25	1	0
lower	27	0	0
both	62	5	3
ring	5	0	0
sample	164	6	3

Table 4. Size of Gonys spot in adult large white-headed gulls *Larus* at Okha, end of January 2004.

Spot size	*heuglini*	*barabensis*	unidentified
normal	47	3	0
reduced	19	0	3
upper	5	1	0
sample	71	4	3

Table 5. Tarsus coloration of adult large white-headed gulls *Larus* at Okha, end of January 2004.

Colour	*heuglini*	*barabensis*	unidentified
bright pink	0	0	0
pink	0	0	1
grey-pink	0	0	2
yellow-pink	69	0	0
pale yellow	99	2	0
bright yellow	24	3	0
sample	192	5	3

ANDREAS BUCHHEIM

Plate 10. This *heuglini* was not included in the analysis because of brown freckles on the primary coverts, but is shown here because it represents late-moulting individuals with P10 old.

Plate 11. Pale-eyed adult *barabensis* (eye score 1) with brightly coloured bare parts and dark on both mandible, primary moult recently completed as apical spots not yet abraded, all-white head.

ANDREAS BUCHHEIM

ANDREAS BUCHHEIM

Plate 12. Pale-legged individual adult *barabensis* with completed primary moult and apical spot of P6 abraded, all-white head and dark on both mandibles; eye score: none (not visible in photograph).

Simply on geographical grounds *barabensis* was expected. It has been documented further south, in Goa (Richard Lowe, pers. comm., Malling Olsen & Larsson 2003). This southern representative (by breeding range) of *heuglini* is even commoner than nominate *heuglini* in Goa. Its scarcity at Okha is therefore surprising.

There is, however, a remote chance that these birds were eastern *cachinnans*. The few differences known so far are morphometric, with *barabensis* on average smaller (Malling Olsen & Larson 2003). As all adults at Okha were smaller than *heuglini*, it is very unlikely that they were *cachinnans*. Another difference is the shading of the upperparts and wing-coverts, which are darker in *barabensis* (Jonsson 1998b), but this is difficult to judge without direct comparison. Moreover, *barabensis* shows more black on the primaries, but this is not infallible as some eastern *cachinnans* can show as much black, so this difference is only an average (Jonsson 1998b). Some authors regard *barabensis* as having originated from introgression of *heuglini* into the *cachinnans* gene pool (Panov & Monzikov 2000), and indeed *barabensis* and *cachinnans* share some haplotypes, but it is unknown whether the exchange happened in the near or distant past (Liebers *et al*. 2001). That field ID of *barabensis* is a challenge is clearly illustrated by the gulls inhabiting Lake Tengiz, Kazakhstan: Panov & Monzikov (2000) reported them as *cachinnans*, whereas Liebers (2000) decided on molecular evidence that they are *barabensis*.

Birds of the unidentified taxon differed from *heuglini* and *barabensis* by their bulk (much larger and bulkier), lighter grey upperparts (only different from *heuglini*, roughly similar to *barabensis*; see above) and pink(-ish) leg and toe colour. Obviously they did not belong to one of the *heuglini* subspecies. So what were they? Both *cachinnans* and *mongolicus* moult their primaries earlier than the birds seen. Although the odd gull of either taxon could delay its moult, it seems highly unlikely that three birds with such untypical moult timing were present at the same site. From their late moult they must have originated in the Arctic, and are thus either "*taimyrensis*", "*birulai*" or *vegae*. According to Yésou (2002, 2003) the first two taxa have no taxonomic status. He believes that "*taimyrensis*" originated from hybridisation of *heuglini* and "*birulai*", the western component of *vegae*, which is itself not distinct enough from *vegae* to qualify as a subspecies. Helbig *et al.* (2004) showed that "*taimyrensis*" has strong similarities to *heuglini* in the frequency of certain haplotypes. Unfortunately

ANDREAS BUCHHEIM

Plate 13. Presumed adult *barabensis* with all visible apical spots (of P5 to P10) abraded, long grey "tongue" just visible on P10 of far wing. This character is known from *cachinnans* also, but this bird is quite small, maybe too small to be *cachinnans*. All-white head with eye score 5 and pale yellow legs.

ANDREAS BUCHHEIM

Plate 14. Unidentified gull *Larus*, with mantle paler than nearby *heuglini*, eye score 3, grey-pink tarsi, a bulky gull with P8 longest and head streaking not different from *heuglini*.

ANDREAS BUCHHEIM

Plate 15. Unidentified gull *Larus* (second individual), grey-pink legs, P9 longest (P10 probably not fully grown), eye score 2, dark markings on both mandibles, head streaking as in *heuglini*.

they did not have blood samples from directly east of the supposed range of "*taimyrensis*" (inhabited by "*birulai*"), so there is no genetic evidence for the alleged hybrid status of "*taimyrensis*". Furthermore, the genetic differences between so-called "*birulai*" and *vegae* remain as unstudied as does the genetic variation within *vegae* (only one sample site for *vegae*, which is more than 3,000 km away from their sample site of "*taimyrensis*"). Given the gaps in our knowledge it is best to leave these three adult birds unidentified until field characters for differentiating the taxa in question have been found.

In recent years improvements in knowledge of intraspecific variation of some taxa (mainly in Europe, less so in North America) have resulted from large-scale colour ringing backed up by studies of phenotypic variation (including measurements) of adults in the hand. The study of phenotypical characters and variation within taxa requires visits to the breeding grounds, where large numbers of adults must be caught and examined with standard methods. Individually marked birds of known origin (then hopefully attributable to taxon) could help test alleged ID criteria and find new ones. In such a project it would be important not only to colour-mark adults but also juveniles. The latter should be included because information on plumage development of Asian taxa is either scant or non-existent. A large-scale ringing-project could help establish a more solid knowledge of the winter distribution and number of the Asian gull taxa and could even enable a population monitoring of these birds which breed in rarely visited regions. It is to be hoped that the new wing-tagging programme (see p.XX, this issue) can be extended to all Asian gull taxa to throw more light onto the life of this fascinating and challenging group of seabirds.

A NOTE ON THE PHOTOGRAPHS: these were taken either in the early morning (low light) or during the day (harsh southern light conditions), so that the grey of the mantle and wing-coverts and also leg coloration cannot be correctly judged from them, and any attempt to do so can be quite misleading.

Acknowledgements
For a fruitful discussion on the topic and especially for upgrading my English I wish to thank Chris Husband, and for safe driving at Okha I would like to thank my driver Dolar, who was always very patient despite my constant "just a few metres ahead please" when I was photographing the roosting gulls.

ANDREAS BUCHHEIM

Plate 16. Unidentified gull *Larus* (third individual), legs pink, eye score 4, P8 longest, dark on both mandibles, head streaking as in the two other individuals.

References

Gibbins, C. (2003) Identification of adult Vega Gull: field observations from Japan, February 2003. web-site www.surfbirds.com/ID%20Articles/JapanGulls/index.html

Grimmett, R., Inskipp, C. & Inskipp, T. (1998) *Birds of the Indian Subcontinent*. London: Helm.

Helbig, A. J., Liebers, D. & de Knijff, P. (2004) Artbildung und Verwandtschaftsverhältnisse im Silber-Heringsmöwen-Komplex *Larus argentatus/fuscus*. *Limicola* 18: 233–258.

Jonsson, L. (1998a) Baltic Lesser Black-backed Gull *Larus fuscus fuscus*—moult, ageing and identification. *Birding World* 11: 295–317.

Jonsson, L. (1998b) Yellow-legged Gulls and yellow-legged Herring Gulls in the Baltic. *Alula* 3: 74–100.

Kazmierczak, K. & van Perlo, B. (2000) *A field guide to the birds of the Indian Subcontinent*. East Sussex: Pica Press.

Kennerley, P. R., Hoogendoorn, W. & Chalmers, M. L. (1995) Identification of large white-headed gulls in Hong Kong. *Hong Kong Bird Report 1994*: 127–156.

Klein, R. & Buchheim, A. (1997) Die westliche Schwarzmeerküste als Kontaktraum verschiedener Großmöwenformen. *Vogelwelt* 118: 61–70.

Liebers, D. (2000) Phylogeographische Differenzierung und Verwandtschaftsbeziehungen von Großmöwen der *Larus argentatus–fuscus–cachinnans* Gruppe: Untersuchungen anhand von DNA-Sequenzen der mitochondrialen Kontrollregion. Dissertation Ernst-Moritz-Arndt-Universität Greifswald.

Liebers, D., Helbig, A. J. & de Knijff, P. (2001) Genetic differentiation and phylogeography of gulls in the *Larus cachinnans–fuscus* group (Aves: Charadriiformes). *Mol. Ecology* 10: 2447–2462.

Malling Olsen, K. & Larsson, H. (2003) *Gulls of Europe, Asia and North America*. London: Christopher Helm.

Panov, E. N. & Monzikov, D. G. (2000) Status of the from *barabensis* within the "*Larus argentatus–cachinnans–fuscus* complex". *Brit. Birds* 93: 227–241.

Rasmussen, P. C. & Anderton, J. C. (2005) *Birds of South Asia: the Ripley guide*. Barcelona: Lynx Edicions.

Rauste, V. (1999) Kennzeichen und Mauser von "Baltischen Heringsmöwen" *Larus [fuscus] fuscus* und "Tundramöwen" *L. [fuscus] heuglini*. Teil I. *Limicola* 13: 105–128.

Ujihara, O. & Ujihara, M. (2000) [*Kamome Shikibetu hand book*.] Tokyo (in Japanese).

Yésou, P. (2001) Phenotypic variation and systematics of Mongolian Gull. *Dutch Birding* 23: 65–82.

Yésou, P. (2002) Systematics of *Larus argentatus–cachinnans–fuscus* complex revisited. *Dutch Birding* 24: 271–298.

Yésou, P. (2003) Les goélands du complexe *Larus argentatus–cachinnans–fuscus*: où en est la systématique? *Ornithos* 10: 144–181.

Zagalska-Neubauer, M., Neubauer, G. & Pierotti, R. (submitted) Variation of three European large gull taxa from the Herring Gull complex. *Condor*.

Andreas Buchheim,
Eichenstr. 1, 45711 Datteln, Germany
email: abu.cachellis@web.de

JOHN HOLMES

Nordmann's Greenshank *Tringa guttifer*

Nordmann's Greenshank breeds on Sakhalin Island and the edges of the sea of Okhotsk, Eastern Russia but it has been recorded as a passage migrant and winter visitor in many other Asian countries.

Occurring as a passage migrant along the Chinese coast, Hong Kong is one of the best places to see the species. It is recorded here annually in small numbers each spring on the tidal flats of Inner Deep Bay including Mai Po, Tsim Bei Tsui and Tin Shui Wai areas. Usually fewer than 10 birds can be seen on the same day in spring and it is estimated that typically 20 plus birds pass through each year but the HKBWS recorded a total of 58 birds in April 1993

It is classified by BirdLife as Endangered, with a world population estimated to be less than one thousand. Numbers are thought to be further declining due to increased human exploitation of coastal wetlands throughout its range.

Both individuals were photographed on the same rising tide from the boardwalk hide at Mai Po Nature Reserve, Hong Kong on April 19, 2004.

Equipment used was a Canon EOS 10D, with 600 mm lens and 1.4x converter.

John Holmes

JOHN HOLMES

ASIAN BIRD: NEW DISCOVERY

A new hanging-parrot from Camiguin Island, Philippines

THOMAS ARNDT

Introduction

In 2004 I learnt that ornithologists from the Field Museum in Chicago were going to describe a new form of the Philippine Hanging Parrot *Loriculus philippensis*. They had noticed that specimens from the small island of Camiguin taken in the 1960s were apparently different from nearby Mindanao's race *apicalis* to which they had hitherto been assigned. Male specimens from Camiguin lack the red throat-spot typical of these hanging-parrots. Moreover, Camiguin birds have distinctly longer tails and wings, the blue part of the cheek is more extensive, the red on the top of the head goes less far down the neck, and the green body plumage is darker, less yellowish, than in *apicalis*.

All in all the Field Museum team had 23 specimens at their disposal, of which only four were female. Of course, theoretically there was the possibility that the 19 males were wrongly sexed or were young birds, but this seemed rather improbable. According to the team's analyses, the Camiguin birds were, in fact, a new species. Their main argument was that the geographical location of the island and its proximity to Mindanao could not have generated such distinct morphological differences unless the population had been isolated for a very long time. If it had been just a normal subspecies, its coloration would have to have been between *L. p. worcesteri* on Bohol and Leyte and *L. p. apicalis* on Mindanao, which are the neighbouring populations to the north and south of Camiguin.

I was not entirely sure whether the males really did not differ from the females, since on a trip to the Philippine islands of Luzon, Leyte and Samar in December–January 2004–2005 I had indeed seen males which could be identified by the red throat-spot but, strangely, with the locals I had only seen females and males that had no full colouring. In one of the bird markets in Manila I even discovered a cage with about 50 Philippine Hanging Parrots, among which there was not a single full-coloured male. So I quickly decided that on my next trip to the Philippines, on which I was planning to search for racquet-tails *Prioniturus*, I would have to make a trip to Camiguin. This I did in January this year. Before I left the Chicago team sent me a first draft of their planned description and a request to check their data in the field, and if possible to check out the current status of the population.

Camiguin

Camiguin (sometimes Camiguin Sur, to distinguish it from Camiguin Norte in the Batanes Islands) is a pear-shaped island of volcanic origin (three volcanoes are considered still active), 238 km² in area, some 10 km off the north coast of Mindanao. In the centre rise the twin peaks of Mambajao (1,420 m) and Timpoong (1,580 m). The climate is pleasant all year round. Rainfall is light from April to June, whereas from November to January the months are cooler and wetter. Average monthly rainfall is 250 mm (min. 77 mm, max. 569 mm). Average humidity is around 89%.

The island can be reached by a regular ferry from Balingoan on the north coast of Mindanao or by ferry or air from Cebu. It is famous for its diving areas, so it is not hard to find good accommodation. The infrastructure is good. There is an 88-km road along the coast which permits a circuit in 2–3 hours. From this road at regular intervals fairly well developed tracks lead up into the interior, although only in a very few places can one penetrate as high as 600 m. Around 25 villages and the little island capital of Mambajal lie on the coast, while in the interior there are only about 10 villages. Camiguin holds about 70,000 inhabitants, giving a relatively high density, so that up to c.600 m one hardly finds any original vegetation. The primary forest has been completely replaced by coconut, fruit, coffee or banana plantations, and in some places by rice paddies.

Even though Camiguin is visible from Mindanao, there was never a land-bridge between the two islands, even in the Pleistocene, some 10,000 years ago, when the sea lay 120 m below its current level. This isolation makes Camiguin the smallest Philippine island on which endemic species were able to develop: only recently two new species of rodent were discovered there—so why not a parrot as well?

The Camiguin hanging-parrots

After arriving at Benoni harbour I found a place at the Highland Resort, one of the few hotels not directly on the beach. Hanging parrots were unknown there, however, but the manager immediately found me a local security guard who knew every corner of the island. Over the next five days we visited even the last village in the interior

of the island, questioned hundreds of people, and followed up every mention or indication of hanging-parrot. The species was certainly well known on the island: I tracked down no fewer than 35 captive birds, practically all of them chained to a wooden perch in the Asian tradition—a sad sight because although the chains were relatively thin their weight must have been a torment for the delicate parrots.

Among these animals there were two birds in juvenile plumage that had not yet been described by the Chicago team. They were easily identifiable by the missing or incomplete red spot of their crown, and the reduced blue spot on their cheek.

I was keen to discover whether males were being kept and whether they had a red throat-spot or not. I repeatedly asked keepers how they distinguished males from females, and the response was always the same: they didn't know, because there was no difference. After talking to the fifth keeper I was convinced, especially because among the people questioned were some catchers who had

Plate 1. Camiguin Hanging Parrot *Loriculus camiguinensis*.

T. ARNDT

Plate 2. Camiguin Hanging Parrot *Loriculus camiguinensis*.

T. ARNDT

Plate 3. The island of Camiguin. To the right of centre lie the peaks of Mambajao and Timpoong.

T. ARNDT

been in the business for decades and who had never seen a bird with a red throat-spot.

Quite quickly something else became clear. According to documentation relating to the Chicago specimens, in the 1960s the species occurred down to about 300 m, but this was clearly no longer the case, doubtless owing to human population increase and the conversion of the original forest to various types of agriculture. Unlike Philippine Hanging Parrots, Camiguin birds seem unable to make use of coconut palms as a food source.

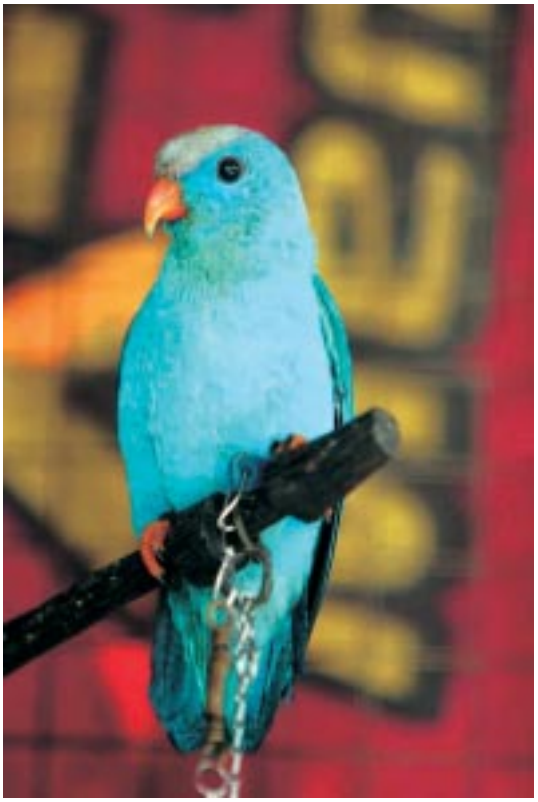
Indeed, the birds did not occur in many parts of the island despite what seemed to me suitable habitat. According to the locals, especially the trappers, the population is concentrated in the uppermost areas of Timpoong and Mambajao, because only there do the trees grow that provide their food. The only two reported exceptions to this were the area between the village of Itum and the Ardent Hot Spring, and the area around the village of Kabadiangan. Here the hanging-parrots are supposed to turn up sporadically in search of food, apparently visiting wild bananas, whose large seeds the trappers say they consume.

I stayed in both areas but never saw the species. I declined an invitation to visit the peak of Timpoong because of the violent downpours that occurred at different times of day and night, precluding a night at the peak. A day-trip made no sense because even if we had set out at dawn we would only have had 1–2 hours on the peak, coinciding with the resting period of the parrots when they are least likely to be seen.

The trappers said that the parrots were mostly to be seen singly, in pairs or little family groups, and occasionally in flocks. Most of the time they perch in trees and bushes in search of food, greatly camouflaged by their plumage. They are shy birds, mostly only noticed when they give their high-pitched call, a quickly repeated *tziit-tziit-tziit*. Their food consists of nectar, seeds (particularly wild bananas), soft fruit, berries and blossoms. As for breeding, I could only discover that it takes place from September to November. A native told me that he had repeatedly found nests in holes in dead tree-ferns.

Plate 4. Juvenile Camiguin Hanging Parrot *Loriculus camiguinensis* (lacking the red crown and with little facial blue).

T. ARNDT



T. ARNDT

Plate 5. Blue mutation of Camiguin Hanging Parrot *Loriculus camiguinensis*.

Population size

By looking at the contours on a map of Camiguin and subtracting the areas in which the parrot does not occur, it quickly emerges that the species is confined to just 40 km², indeed possibly only 20 km². We know from experience that areas of this size can accommodate a few hundred up to a maximum of 2,000 individuals only.

Research to establish the true situation is urgently needed because the parrots are being caught in rather large quantities. In Itum village alone there are around 10 people who occasionally catch parrots, each of them taking around five animals a year, which altogether makes 50 birds. But this figure is reached by one single catcher on the east coast of the island who specialises in hanging parrots and who had 14 animals when I met him. There are other catchers in Kabadiangan where I could have chosen from six birds on offer. Thus well over 100 hanging parrots per year must

Plate 6. Position of Camiguin Island (centre of the red circle) in the Philippine Archipelago.

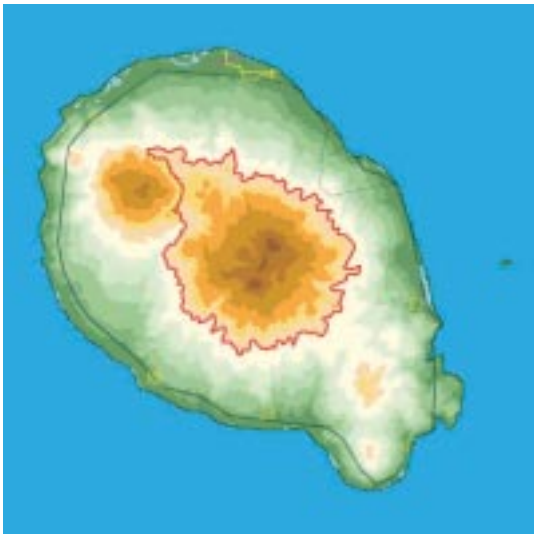


Plate 7. Map of Camiguin with the lower limits of the hanging parrot marked in red.

be caught. They are taken with decoys which they attach to a 3–4 m high pole. Below the top of the pole there are limed perches on which the wild birds are snared. The birds are mainly sold to Filipino tourists for whom Camiguin is a favourite destination.

One indication that the population has possibly already reached a critical limit is the appearance of a wild blue mutation. This was shown me by a dealer who gets his birds mainly from one of the trappers I met. The bird could possibly be a product of inbreeding depression to which the population is exposed.

Conclusion

My trip confirms that the Camiguin Hanging Parrot could indeed be a new species which by virtue of long isolation, in the midst of the range of *L. philippensis*, has developed not only distinct morphological but also ecological differences (use of habitat and feeding habits). It is considered as such by Tello *et al.* (2006), who in April this year gave it the name *Loriculus camiguinensis*. The species perhaps has to be classified as threatened already. In any case, research is needed to determine its ecological needs and true population status.

This article was translated and lightly abridged from Arndt (2006) by I. Weiss and N. J. Collar.

References

Arndt, T. (2006) Eine neue Fledermauspapageien-Art von der Insel Camiguin. *Papageien* 19: 136–140.

Tello, J. G., Degner, J. F., Bates, J. M. & Willard, D. E. (2006) A new species of hanging-parrot (Aves: Psittacidae: *Loriculus*) from Camiguin Island, Philippines. *Fieldiana Zoology* 106: 49–57.

Thomas Arndt,
Brückenfeldstraße 30,
75015 Bretten-Rinklingen, Germany

BIRDING HOTSPOT

Kedarnath Musk Deer Reserve, Uttaranchal, India

SUSAN MYERS & ARUN P. SINGH

Introduction

The Garhwal Himalayas in north west India has some of the highest peaks in India. Revered in Hinduism, it is the source of the great Ganga and Yamuna rivers and houses the sacred Badrinath and Kedarnath shrines. The Kedarnath Musk Deer Reserve (KMDR) is located in the Garhwal Himalayas in the newly formed Rudraprayag District of the state of Uttaranchal, about 300 km northeast of Delhi. The reserve covers an area of 975 square kilometres and protects a variety of habitats over a wide altitudinal range from c. 1,500 to 7,068 m at Mount Chaukhamba.

As one of the centres of Hinduism in India, the Garhwal region is steeped in spiritualism and history—this is Hinduism's *Dhevbumi* or Abode of the Gods. Kedarnath in particular is a very important centre for Hindus in Garhwal. Temples dot the landscape, and glacier fed rivers and streams feed the sacred Ganges and the Yamuna, gradually expanding as they reach down into the foothills. The Kedarnath Musk Deer Reserve is a popular pilgrimage site as it encompasses the temples of Tunganath, Rudranath and Kedarnath, for which it is named. The very important Kedarnath Shrine is dedicated to Shiva who is worshipped mainly in the form of a linga.

KMDR was created in 1972; the reserve comprises the northern catchment of the Alaknanda and Mandakini rivers (major tributaries of the Ganges). In the lower parts of the reserve are small villages and farms. The land between Gopeshwar and Mandal, outside the reserve, has mostly been cleared for agriculture with patches of forest in the nullahs and on hilltops. One progresses upwards from the town of Mandal to Chopta and higher to Tunganath Temple through moist temperate forest, coniferous forest to mixed *Rhododendron*/oak forest to alpine meadows. Numerous fast flowing, clear streams are a feature of the area. There is great altitudinal variation within the park, reflected in a diverse flora and fauna. Forests of chir pine and oaks with *Rhododendron arboreum* in the understorey represent the subtropical zone above Gharsari. At Mandal the vegetation is mainly mixed moist temperate with oaks, elm, horse chestnut, bird-cherry, hazel, maple and ringal bamboo. At higher altitudes, above Kanchila Khark, stands of west Himalayan spruce, silver fir appear along with yew at some places. The subalpine zone above 3000 m has scrubby vegetation with stands of birch and *Rhododendron companulatum*. Alpine meadows of grasses and sedges can be found at even higher altitudes.

Accommodation

At 1,515 metres, Gopeshwar is the district headquarters of Chamoli district. Although it is a rather unprepossessing town, there is a Garhwal Mandal Vikas Nigam's (GMVN) rest house and a few hotels at Gopeshwar. Mandal (1568 m) is a small village 13 km from Gopeshwar and this is the gateway to Kedarnath.

It is possible to drive out daily from Gopeshwar to the reserve and various places on the Gharsari-Mandal-Chopta-Dogalbitta-Okhimath route. With permission birders can stay at the Forest and Public Works Department Resthouses at Gharsari, Chopta, Mandal and Dogalbitta, but these are very basic indeed and it would be necessary to bring all food in and then find someone to cook. Some of the trekking companies in Rishikesh might be worth approaching with this course of action in mind.

Access

The nearest large city to the reserve is Rishikesh, where there is a railway station connected to Haridwar (23 km) which in turn is linked to both New Delhi and Dehradun (state capital). From here hire a taxi (with driver) to cover the ca. 200 km to Gopeshwar. Expect numerous delays as the road is often closed due to minor landslides. From Rudraprayag one road goes along the Alaknanda River to Gopeshwar and other goes along Mandakini River to Kedarnath. Gaurikund, in the reserve's west is connected by direct bus services to Rishikesh, Haridwar, Rudraprayag and Ukhimath.

Regular State Transport bus services run between Gopeshwar and Chopta during all seasons except winter when Mandal and beyond receives heavy snowfall. Situated on the Gopeshwar-Ukhimath road, Chopta is a small village located at 2,700 metres, the highest point on the road. Chopta offers a magnificent view of the surrounding mountains and deep wooded valleys. Simple but very tasty lunches are also available in tea stalls at Chopta. The village is also the road head to the ancient temple of Tunganath, one of the five abodes

of Shiva. The trek from Chopta to Tunganath Temple (3 km) takes 2 to 3 hours with ease, passing through alpine scrub along ridges that offer some magnificent views of the surrounding landscape. From Chopta driving towards Okhimath, the road descends and passes through rocky alpine meadows intermingled with clusters of large oak trees and reaches Dugalbitta (2360 m) after 7 km. Dugalbitta is located amongst the picturesque surroundings of an undisturbed oak forest and offers excellent views of the mountain ranges to the north. There is also a very well maintained and spacious PWD guesthouse with a small garden. There are many trekking routes within the reserve; the most famous of course being the 15 km trek to Kedarnath.

Conditions

The weather in the area, in all seasons can be capricious. Summer mornings are often fine but overcast, with heavy rain after lunch then light rain through the afternoons. Surprisingly, the rain and drizzle may actually enhance the birding with good opportunities for fabulous sightings of thrushes, partridges and pheasants on the roadsides. In general terms the weather in these regions is very unpredictable and birders should be sure to take appropriate warm clothing. From mid October the temples close for winter when the whole region is covered with snow. The snows start to melt after mid June. The best time to visit is between September to October and April to June. The average maximum summer temperature at Kedarnath is 15° C, while the average minimum is 8° C.

Birding

Kedarnath is rich in diversity and density, the forest is stunningly beautiful and a joy to bird in. Although logistics at Kedarnath can be difficult it is well worth the effort! At least three species of conservation concern are found in the reserve the near threatened Cinereous Vulture, Red-headed Vulture and Yellow-rumped Honeyguide.

The density and diversity of birds in this marvellous reserve is noteworthy. In particular the area around Gharsari (1675 m) holds some fabulous and large mixed feeding flocks consisting of up to 40 species. A number of species not usually found in the Western Himalayas occur in the reserve. Of particular note are Collared Falconet, Yellow-rumped Honeyguide, Black-faced Warbler, Yellowish-bellied Bush-Warbler, Great and Black-throated Parrotbill, Gould's Shortwing, Brown Bullfinch, Spotted Laughingthrush, Black-throated Sunbird, Spotted Bush-Warbler and Nepal Wren-Babbler. Anywhere between Gharsari and Chopta is worth birding. The best method seems to be to

SUSAN MYERS

Plate 1. Collared Falconet *Microhierax caerulescens* Doi Inthanon, Thailand, February 2006.

Plate 2. Gould's Shortwing *Brachypteryx stellata,* Bhutan, April 2005.

DAVE FARROW/BIRDQUEST

Plate 3. Yellow-rumped Honeyguide *Indicator xanthonotus* Bhutan April 2005

DAVE FARROW/BIRDQUEST

ARUN P. SINGH

Plate 4. Black-lored Tit *Parus xanthogenys* Jharipani, Musoorie, Uttaranchal, India February 2006.

drive slowly along the metalled road, stopping and walking where there is any conspicuous activity. One may encounter the frequently heard but secretive Chestnut-headed Tesia in the roadside undergrowth. The Black-chinned Babbler, a subcontinent endemic, can be detected skulking in low bushes, often giving its presence away with its pleasant, mellow vocalisations. The mixed flocks often include exciting birds such as Black-lored Tit, Fire-capped Tit, Maroon Oriole, White-tailed Nuthatch, Green Shrike-babbler and Lesser Racket-tailed Drongo. Both Black-backed and Spotted forktails are regularly encountered along the roadside, especially on rainy days. With more time there are plenty of opportunities for trekking to some of the more remote parts of the reserve, away from the road. That said, the birding along the road is world class.

Koklass Pheasant can be seen foraging on the road especially in heavy mist. It is a good strategy to use your vehicle as a hide to enable closer approach to pheasants and thrushes, and others. Koklass Pheasant can also be heard at dawn, calling repeatedly at intervals a loud 'kok,kark,kuk—kukuk' from the mountain slopes, the calls are often responded to with similar calls given by other individuals in the vicinity. Kalij Pheasant (*Lophura leucomelanos hamiltoni* with white crest) and Hill Partridge (feeding on the forested slopes and at times heard giving a loud, far crying, whistle 'hwoaa' or rapidly repeated 'bob-white' notes) are quite common. A number of species of thrush—Long-tailed Thrush, White-collared Blackbird, Grey-winged Blackbird, Mistle Thrush and Long-billed Thrush (rare)—can be seen while birding along the roadside. At Kanchila Khark, Yellow-rumped Honeyguides can be seen attending beehives on the roadside rock walls. The abundance of woodpeckers in this reserve is a good indication of the health of this outstanding forest. Six species woodpecker—Brown-fronted, Fulvous-breasted, Rufous-bellied, Scaly-bellied, Grey-headed and Himalayan—are regularly seen along the lower stretches of the road.

The trek up to the revered Tunganath Temple can be very rewarding for a different range of birds. The route passes from the temperate zone, through the subalpine zone to the alpine zone between the starting point at Chopta and the temple at 3050 metres. Golden and White-browed bush robins, Buff-barred Warbler, and Blue-fronted Redstart are common during summer in shrubbery on the trek

Plate 5. Moist temperate forest with fast-flowing streams represent the subtropical zone above Gharsari.

SUSAN MYERS

Plate 6. Coniferous forest grading into alpine meadows above Chopta and just below Tugnath Temple.

ARUN P. SINGH

to Tunganath and beyond. Himalayan Griffons are a common sight at higher altitudes throughout the reserve, although Red-headed Vulture is much scarcer.

This reserve may be unique as Nepal *Pnoepyga albiventer* and Scaly-breasted *Pnoepyga immaculata* wren-babblers occur together here. Birding in Kedarnath provides a nice opportunity to compare the morphology and behaviour of these two similar species. The latter has very noticeable buff spots over the upperparts, ornate scaling on the breast and a much different call to the former. The Nepal Wren-Babbler has only been recorded at lower altitudes, while Scaly-breasted is generally found higher. This may be how the two similar species are separating their niches during the breeding season (summer). Scaly-breasted Wren-Babbler is often seen and heard en route to Tunganath Temple, while Nepal Wren-Babbler may be found in dense vegetation along the roadside.

There are many opportunities for birding in Kedarnath and a visit to this remarkable area will be well rewarded with sightings of some very exciting birds and mammals as well as magnificent scenery and beautiful forest.

References

Grimmett, R., Inskipp C. & Inskipp T. (1998) *Birds of the Indian Subcontinent.* Helm, London.

Green, M. J. B. (1986) The Birds of the Kedarnath Sanctuary, Chamoli District, Uttar Pradesh: Status and Distribution. *Journal Bomb. Nat. Hist. Soc.* Vol. 83:603–617.

Annotated checklist of Kedarnath Musk Deer Sanctuary, Uttaranchal

This checklist takes into account the areas lying in the south eastern part of Kedarnath Musk Deer Sanctuary—Tunganath, Rudranath, Chopta Chatti, Duggal Bitta, Ansuya Devi, South Kharik, Kanchula Kharik, Gharsari, Mandal, Cattle Camp; all located between ca. 79°10' 79°20'E and 30°27' 30 °33'N along an altitudinal gradient from 1500 m to 3583 m, in the upper Garhwal Himalayas.

This combined checklist of 251 species is based on the accounts published or provided by the 6 birders whose names have been listed below.

MB Michael J. B. Green February 1979–December 1981
RA Ramana M. Athreya May 1991, February–April, 1994
AS Arun P.Singh May 2003
SS Sanjay Sondhi July 1990
DM Dhananjai Mohan early 1990s
SM Susan Myers August 2003

	MG	SS	RA	DM	AS	SM
Crested Honey Buzzard *Pernis ptilorhynchus*	+		+			
Black Kite *Milvus migrans govinda*			+			
Black Kite *Milvus (migrans) lineatus*	+					
Northern Goshawk *Accipiter gentiles*			+			
Shikra *Accipiter badius*			+			
Crested Goshawk *Accipiter trivirgatus*			+			
Eurasian Sparrowhawk *Accipiter nisus melaschistos*			+			
Mountain Hawk Eagle *Spizaetus nipalensis*	+		+			
Golden Eagle *Aquila chrysaetos*	+		+		+	
Steppe Eagle *Aquila (rapax) nipalensis*	+		+			
Black Eagle *Ictinaetus malayensis*	+		+			
Booted Eagle *Hieraaetus pennatus*						+
Red-headed Vulture *Sarcogyps calvus*	+	+	+			+
Himalayan Griffon *Gyps himalayensis*	+	+	+		+	+
Cinerous Vulture *Aegypius monachus*						+
Egyptian Vulture *Neophrons percnopterus*			+			
Lammergeier *Gypaetus barbatus*	+	+	+			+
Hen Harrier *Circus cyaneus*	+					
Crested Serpent Eagle *Spilornis cheela*	+	+	+			+
Shaheen Falcon *Falco peregrinus peregrinator*			+			+
Collared Falconet *Microhierax caerulescens*					+	
Eurasian Hobby *Falco subbuteo*	+					
Comon Kestrel *Falco tinnunculus*	+	+	+			+

	MG	SS	RA	DM	AS	SM
Snow Partridge *Lerwa lerwa*	+		+			
Himalayan Snowcock *Tetraogallus himalayensis*	+					
Black Francolin *Francolinus francolinus*	+	+	+			+
Hill Partridge *Arborophila torqueola*	+		+		+	
Rufous-throated Partridge *Arborophila rufogularis*	+					
Himalayan Monal *Lophophorus impejanus*	+	+	+			
Kalij Pheasant *Lophura leucomelana hamiltonii*	+	+	+		+	+
Red Jungle Fowl *Gallus gallus*		+				
Koklass Pheasant *Pucrasia macrolopha*	+	+	+			+
Eurasian Woodcock *Scolopax rusticola*	+	+	+			
Snow Pigeon *Columba leuconota*	+		+			
Wedge-tailed Green Pigeon *Treron sphenura*			+		+	+
Speckled Wood Pigeon *Columba hodgsonii*			+			
Oriental Turtle-dove *Streptopelia orientalis*	+	+	+		+	+
Eurasian Collared Dove *Streptopelia decaocto*		+	+		+	+
Spotted Dove *Streptopelia chinensis*		+	+			
Emerald Dove *Chalcophaps indica*		+				
Plum-headed Parakeet *Psittacula cyanocephala*			+			
Slaty-headed Parakeet *Psittacula himalayana*	+	+	+		+	+
Large Hawk-cuckoo *Cuculus sparverioides*	+	+	+		+	
Indian Cuckoo *Cuculus micropterus*		+	+		+	
Eurasian Cuckoo *Cuculus canorus*	+	+	+		+	
Ooriental Cuckoo *Cuculus saturatus*	+		+		+	
Lesser Cuckoo *Cuculus poliocephalus*			+			
Moutain Scops Owl *Otus spilocephalus*	+		+		+	
Brown Wood Owl *Strix leptogrammica*			+		+	
Collared Owlet *Glaucidium brodiei*			+			+
Grey Nightjar *Caprimulgus indicus*	+		+		+	
Large-ailed Nightjar *Caprimulgus macrurus*		+				
Himalayan Swiftlet *Collocalia brevirostris*	+	+	+			+
Fork-tailed Swift *Apus pacifus*	+	+	+		+	
Alpine Swift *Apus melba*			+		+	
House Swift *Apus affinis*	+				+	
White-throated Kingfisher *Halcyon symyrensis*						+
Crested Kingfisher *Megaceryle lugubris*						+
Pied Kingfisher *Ceryle rudis*		+	+			
Green Bee-eater *Merops orientalis*			+			
Great Barbet *Megalaima virens*	+	+	+		+	+
Yellow-rumped Honeyguide *Indicator xanthonotus*			+			+
Specled Piculet *Picumnus innominatus*			+			
Scaly-bellied Woodpecker *Picus squamatus*	+	+	+		+	
Grey-headed Woodpecker *Picus canus*	+		+			+
Lesser Yellownape *Picus chlorolopus*			+			
Rufous-bellied Woodpecker *Hypopicus hyperythrus*	+	+	+		+	+
Himalayan Woodpecker *Picoides himalayensis*	+	+	+		+	+
Fulvous-breasted Woodpexcker *Picoides macei*	+	+				+
Brown-fronted Woodpecker *Dendrocopos auriceps*			+			+
Barn Swallow *Hirundo rustica*						+
Red-rumped Swallow *Hirundo daurica*			+			
Northern House Martin *Delichon urbica*	+	+	+			
Nepal House Martin *Delichon nipalensis*			+			
Long-tailed Shrike *Lanius schach*	+	+				+
Grey-backed Shrike *Lanius tephronotus*			+			
Brown Shrike *Lanius cristatus*			+			
Golden Oriole *Oriolus oriolus*		+				
Maroon Oriole *Oriolus traillii*	+	+	+		+	+

	MG	SS	RA	DM	AS	SM
Black Drongo *Dicrurus adsimilis*			+			+
Ashy Drongo *Dicrurus leucophaeus*	+	+	+		+	
Lesser Racket-tailed Drongo *Dicrurus remifer*			+			+
Common Mynah *Acridotheres tristis*	+	+	+		+	
Jungle Mynah *Acridotheres fuscus*	+	+	+		+	
Eurasian Jay *Garrulus glandarius*	+	+	+		+	+
Black-headed Jay *Garrulus lanceolatus*	+	+	+		+	
Yellow-billed Blue Magpie *Cissa flavirostris*	+	+	+		+	+
Red-billed Blue Magpie *Cissa erythrorhyncha*		+			+	+
Grey Treepie *Dendrocitta formosae*	+	+	+		+	+
Spotted Nutcracker *Nuciphraga caryocatactes*	+					
Red-billed Chough *Pyrrhocorax pyrrhocorax*	+		+			
Large-billed Crow *Corvus macrorhynchos*	+	+	+		+	+
Common Raven *Corvus corax*			+			
Black-winged Cuckooshrike *Coracina melaschistos*			+			+
Long-tailed Minivet *Pericrocotus ethologus*	+	+	+			+
Scarlet Minivet *Pericrocotus flammeus*			+			
Short-billed Minivet *Pericrocotus brevirostris*					+	+
Himalayan Bulbul *Pycnonotus leucogenys leucogenys*	+	+	+		+	+
Red-vented Bulbul *Pycnonotus cafer*	+	+	+		+	
Black Bulbul *Hypsipetes madagascariensis*		+	+		+	+
Rusty-cheeked Scimitar Babbler *Pomatorhinus erythrogenys*	+	+	+		+	
Streak-breasted Scimitar Babbler *Pomatorhinus ruficollis*			+			
Black-chinned Babbler *Stachyris pyrrhops*			+			+
Golden-headed Babbler *Stachyris chrysaea* *	+				+	
Winter Wren *Troglodytes troglodytes*	+		+			
Scaly-breasted Wren-babbler *Pnoepyga albiventer*	+		+			+
Nepal Wren-babbler *Pnoepyga immaculata*					+	+
Great Parrotbill *Conostoma aemodium*			+			
Black-throated Parrotbill *Paradoxornis nipalensis*	+					
White-throated Laughingthrush *Garrulax albogularis*	+	+	+		+	+
Striated Laughingthrush *Garrulax striatus*	+	+	+		+	+
Variegated Laughingthrush *Garrulax variegates*	+	+	+		+	+
Spotted Laughingthrush *Garrulax ocellatus*	+		+		+	
Streaked Laughingthrush *Garrulax lineatus*	+	+	+		+	+

Plate 7. Black-chinned Babbler, *Stachyris pyrrhops* Jharipani, Musoorie, Uttaranchal, India, February 2006.

ARUN P. SINGH

Plate 8. Scaly-breasted Wren Babbler *Pnoepyga albiventer*. Musoorie, Uttaranchal, India January 2006.

ARUN P. SINGH

	MG	SS	RA	DM	AS	SM
Chestnut-crowned Laughingthrush *Garrulax erythrocephalus*	+	+	+			+
Green Shrike-babbler *Pteruthius xanthochlorus*				+		+
White-browed Shrike-babbler *Pteruthius flaviscappis*			+		+	+
Chestnut-tailed Minla *Minla strigula*	+	+	+			+
Stripe-throated Yuhina *Yuhina gularis*	+	+	+		+	+
Whiskered Yuhina *Yuhina flavicollis*		+	+		+	+
White-browed Fulvetta *Alcippe vinipectus*	+	+	+			+
Rufous Sibia *Heterophasia capistrata*	+	+	+		+	+
Dark-sided Flycatcher *Muscicapa sibirica*	+		+			
Asian Brown Flycatcher *Muscicapa dauurica*						+
Little Pied Flycatcher *Muscicapa westermanni*	+					
Rusty-tailed Flycatcher *Muscicapa ruficauda*			+			
Rufous-gorgetted Flycatcher *Muscicapa strophiata*	+	+	+		+	
Ultramarine Flycatcher *Muscicapa superciliaris*	+	+	+			
Slaty Blue Flycatcher *Muscicapa leucomelanura*	+		+			
Rufous-bellied Niltava *Muscicapa sundara*	+	+	+		+	+
Small Niltava *Muscicapa macgrigoriae*			+			
Snowy-browed Flycatcher *Muscicapa hyperythra*			+			
Verditer Flycatcher *Muscicapa thalassina*	+	+	+		+	+
Grey-headed Canary Flycatcher *Culicicapa ceylonensis*	+	+	+		+	+
Yellow-bellied Fantail *Rhipidura hypoxantha*	+	+	+		+	+
White-throated Fantail *Rhipidura albicollis*			+			
Asian Paradise Flycatcher *Terpsiphone paradisi*		+	+			
Brownish-flanked Bush-warbler *Cettia fortipes*			+			+
Grey-sided Bush-warbler *Cettia brunnifrons*	+	+	+			
Yellowish-bellied Bush-warbler *Cettia acanthizoides*				+		
Brown Bush-warbler *Bradypterus luteoventris*		+				
Spotted Bush-warbler *Bradypterus thoracicus*	+					
Grey-bellied Tesia *Tesia cyaniventer*		+				
Chestnut-headed Tesia *Tesia castaneocoronata*		+	+		+	+
Striated Prinia *Prinia criniger*			+			+
Grey-breasted Prinia *Prinia hodgsonii rufula*		+	+			+
Common Chiffchaff *Phylloscopus collybita*			+			
Yellow-browed Warbler *Phylloscopus inornatus*	+					
Buff-barred Warbler *Phylloscopus pulcher*		+	+		+	+
Lemon-rumped Warbler *Phylloscopus chloronotus*			+			
Ashy-throated Warbler *Phylloscopus maculipennis*	+		+		+	+
Large-billed Leaf Warbler *Phylloscopus magnirostris*	+		+			
Western Crowned Warbler *Phylloscopus occipitalis*						+
Greenish Warbler *Phylloscopus trochiloides*	+		+			
Blyth's Leaf Warbler *Phylloscopus reguloides*	+		+			
Golden-specticled Warbler *Seicercus burkii*	+		+			
Grey-hooded Warbler *Seicercus xanthoschistos*	+	+	+		+	+
Grey-cheeked Warbler *Seicercus poliogenys*	+					
Black-faced Warbler *Abroscopus schisticeps*			+		+	+
Goldcrest *Regulus regulus*			+			
Common Tailorbird *Orthotomus sutorius*			+			
Gould's Shortwing *Brachypteryx stellata*	+					
Indian Blue Robin *Luscinia brunnea*		+	+			
Orange-flanked Bush Robin *Tarsiger cyanurus*						
White-browed Bush Robin *Tarisiger indicus*	+				+	
Golden Bush Robin *Tarsiger chrysaeus*		+	+		+	
Oriental Magpie Robin *Copsychus saularis*						+
Blue-capped Redstart *Phoenicurus caeruleocephalus*	+		+			
Blue-fronted Redstart *Phoenicurus frontalis*	+	+	+		+	
Plumbeous Redstart *Rhyacornis fuliginosus*	+	+	+		+	+

	MG	SS	RA	DM	AS	SM
White-capped Waterredstart *Chaimarrornis leucocephalus*	+	+	+		+	+
Grandala *Grandala coelicolor*	+					
White-bellied Redstart *Hodgsonius phoenicuroides*			+			
Little Forktail *Enicurus scouleri*	+	+	+			
Black-backed Forktail *Enicurus immaculatus*	+				+	+
Spotted Forktail *Enicurus maculatus*	+	+	+		+	+
Pied Bushchat *Saxicola caprata*			+		+	
Common Stonechat *Saxicola torquata*		+	+		+	+
Grey Bushchat *Saxicola ferrea*		+	+		+	+
Blue-capped Rock Thrush *Monticola cinclorhynchus*	+		+			+
Chestnut-bellied Rock Thrush *Monticola rufiventris*	+	+	+		+	
Blue Rock Thrush *Monticola solitarius*	+					
Blue Whistling Thrush *Myiophonus caeruleus*	+	+	+		+	+
Pied Thrush *Zoothera wardii*		+	+			
Plain-backed Thrush *Zoothera mollissima*			+			
Long-tailed Thrush *Zoothera dixoni*	+					+
Scaly Thrush *Zoothera dauma*	+		+			
Long-billed Thrush *Zoothera monticola*	+		+		+	
Tickell's Thrush *Turdus unicolor*	+					
White-collared Blackbird *Turdus albocinctus*	+	+	+		+	+
Grey-winged Blackbird *Turdus boulboul*	+	+	+		+	+
Eurasian Blackbird *Turdus merula merula*	+					
Chestnut Thrush *Turdus rubrocanus*	+					
Dark-throated Thrush *Turdus ruficollis atrogularis*	+		+			
Mistle Thrush *Turdus viscivorus*	+	+	+			+
Brown Dipper *Cinclus pallasi*	+	+	+			
Alpine Accentor *Prunella collaris*	+		+			
Altai Accentor *Prunella himalayana*	+		+			
Rufous-breasted Accentor *Prunella strophiata*			+			
Great Tit *Parus major*		+	+			+
Green-backed Tit *Parus monticolus*	+	+	+		+	+
Spot-winged Tit *Parus melanolophus*	+	+	+		+	+
Coal Tit *Parus ater*			+			
Rufous-vented Tit *Parus rubidiventris*	+		+			
Grey-crested Tit *Parus dichrous*	+		+			+
Black-lored Tit *Parus xanthogenys*	+	+	+		+	+
Yellow-browed Tit *Sylviparus modestus*			+		+	+
Fire-capped Tit *Cephalopyrus flammiceps*			+			+
Black-thrated Tit *Aegithalos concinnus*	+	+	+		+	+
White-throated Tit *Aegithalos niveogularis*	+		+			
Chestnut-bellied Nuthatch *Sitta castanea*						+
White-tailed Nuthatch *Sitta himalayensis*	+	+	+		+	+
White-cheeked Nuthatch *Sitta leucopsis*						+
Wallcreeper *Tichodroma muraria*	+					
Eurasian Treecreeper *Certhia familiaris*	+		+			+
Rusty-flanked Treecreeper *Certhia nipalensis*	+		+		+	+
Bar-tailed Treecreeper *Certhia hamalayana*	+	+	+		+	+
Olive-backed Pipit *Anthus hodgsonii*	+	+	+			
Rosy Pipit *Anthus roseatus*	+	+	+			
Upland Pipit *Anthus sylvanus*	+				+	
Grey Wagtail *Motacilla caspica*	+	+	+			+
White Wagtail *Motacilla alba alboides*	+					
Fire-breasted Flowerpecker *Dicaeum ignipectis*		+	+			
Green-tailed Sunbird *Aethopyga nipalensis*	+	+	+		+	+
Purple Sunbird *Nectarina asiatica*			+			
Fire-tailed Sunbird *Aethopyga ignicauda*	+		+			

	MG	SS	RA	DM	AS	SM
Black-throated Sunbird *Aethopyga saturata*			+			+
Mrs Gould's Sunbird *Aethopyga gouldiae*			+			
Oriental White-eye *Zosterops palpebrosa*		+	+			
House Sparrow *Passer domesticus*	+	+	+			
Russet Sparrow *Passer rutilans*		+	+		+	+
White-rumped Munia *Lonchura striata*			+			
Scaly-breasted Munia *Lonchura punctulata*						+
Chaffinch *Fringilla coelebs*			+			
Fire-fronted Serin *Serinus pusillus*			+			
Collared Grosbeak *Mycerobas affinis*	+		+			
Black-and-yellow Grosbeak *Mycerobas icterioides*			+			
Spot-winged Grosbeak *Mycerobas melanozanthos*			+			
Plain Mountain Finch *Leucosticte nemoricola*	+		+			
European Goldfinch *Carduelis carduelis*	+					
Yellow-breasted Greenfinch *Carduelis spinoides*		+	+			+
Dark-breasted Rosefinch *Carpodacus nipalensis*	+	+	+			
Pink-browed Rosefinch *Carpodacus rhodochrous*	+	+	+			
Spot-winged Rosefinch *Carpodacus rhodopeplus*			+			
White-browed Rosefinch *Carpodacus thura*	+					
Red-fronted Rosefinch *Carpodacus puniceus*	+		+			
Scarlet Finch *Haematospiza sipahi*	+		+			
Red-headed Bullfinch *Pyrrhula erythrocephala*	+		+			
Brown Bullfinch *Pyrrhula nipalensis*			+			
Rock Bunting *Emberiza cia*	+		+		+	
Crested Bunting *Melophus lathami*	+		+			

* Identity doubtful

NOTEBOOK

Some recent behavioural observations of Masked Finfoot *Heliopais personata* (Gray 1849) in Selangor Darul Ehsan, Peninsular Malaysia

CHRIS R. SHEPHERD

There are three species of Heliornithidae (finfoots) in the world, one each in Africa, the Americas and Asia. In Asia, the Masked Finfoot *Heliopais personata* occurs from north-eastern India and Bangladesh, through mainland South-East Asia and on the Indonesian island of Sumatra (Robson 2000; see also BirdLife International 2001). It has also been recorded on west Java, Indonesia, although this bird is considered to have been a vagrant beyond the limits of its range (Milton 1985). The Masked Finfoot is considered a scarce winter visitor and passage migrant (and probably a local resident) in southern Thailand and Peninsular Malaysia (Robson 2000). Observations in Peninsular Malaysia of this species have been made from December to May, but proof of breeding there is still lacking and, therefore, the bird continues to be considered a non-breeding winter visitor (Chong 1994).

The Masked Finfoot is largely an aquatic bird (MacKinnon & Phillipps 1993, Robson 2000, Anon. 2001). It is found in lowland forested rivers (sometimes into the low hills), swamps and mangroves (MacKinnon & Phillips 1993, Robson 2000, Anon. 2001). It is also recorded on reservoirs and ponds, sometimes away from the forest (Anon. 2001). In Peninsular Malaysia most sightings have been in freshwater areas, including unpolluted pools, ornamental pools and former tin-mining pools, only recorded in the state of Selangor, and especially along slow moving stretches of rivers (Chong 1994). There are also a number of sightings in the mangroves on Peninsular Malaysia's west coast.

A Masked Finfoot was recently observed in the state of Selangor, in a pond at the Forest Research Institute of Malaysia (FRIM). The bird was first observed by local birdwatchers in early December 2004, and remained in the pond until 21 May 2005, after which it was not seen. Local and foreign birdwatchers observed the bird daily, and I observed the bird at this location for more than fifteen non-consecutive days within this period.

The Masked Finfoot was judged most likely to be a juvenile male, based on direct observations and examination of photographs. It had markings like that of a female, but had a "horn" at the base of its bill, as do males of this species. The coloration and markings of juvenile (first-winter) males resemble that of the female (Robson 2000).

The pond where the bird was observed is small (approximately 200 m in diameter) and surrounded by trees on two-thirds of the edges, with one third surrounded by mown lawns, and much human disturbance. It is situated less than 100 m from a road. The actual depth of the pond is not known, but it appears to be relatively shallow, with aquatic vegetation growing over most of the surface area. There are no other such ponds in the vicinity, although there is a small river flowing past the pond, approximately 100 m away. Apart from this small river, this pond is very much an isolated, small body of water.

Feeding behaviour and movement

The Masked Finfoot was observed to be most active in the mornings from first light at approximately 07h00 until about 11h30 and then again in the evening after approximately 17h00. Unlike grebes, the Masked Finfoot roosts in trees (MacKinnon & Phillipps 1993). In the evenings it was observed roosting on an exposed log protruding from the water, about 1 m above the surface. It remained out of sight under thick vegetation along the edge of the pond at midday. It seemed particularly active on hot days (approx. 30°C), and on overcast or rainy days it was either observed for short periods of time, or not at all.

The Masked Finfoot was observed foraging in the centre of the shallow pond and along the vegetation-covered edges. While it sometimes appeared to be searching for food in the exposed vegetation along the pond, it was not seen striking at or eating anything out of the water. It was always seen taking food from the water. It was observed foraging in shallow water along the pond's edge, but more often in the deeper parts, in the floating aquatic vegetation.

The bird was observed continually swimming, with its head moving back and forth in a jerking fashion, or occasionally extended over the water, and looking for food, by peering into the water. When it appeared to have seen potential prey in the water, and leaned back slightly and rapidly "paddled" its feet in front of it (so that they were

ALL PHOTOGRAPHS: CHRIS R SHEPHERD

Plates 1–5. Masked Finfoot *Heliopais personata*. Forest Research Institute of Malaysia, Selangor, Peninsular Malaysia, December 2004
Plate 6. Masked Finfoot *Heliopais personata* with Water Monitor *Varanus solvator*. Forest Research Institute of Malaysia, Selangor, Peninsular Malaysia, December 2004

just visible in front of the bird to observers). This behaviour was also noted by Howes (1988) and Chong (1994) on a lake at Ayer Keroh, Malacca. It appears that the Masked Finfoot was using its feet to stir up the vegetation under the water to bring its prey into view, after which it would strike, driving its head into the water and usually emerging with food in its bill. The Masked Finfoot at FRIM was observed catching mainly freshwater shrimp but also large beetle-like water insects and small fish in this manner. It was often seen plunging its head into the water and coming up with vegetation and small invertebrates or fish. Each time, the plants were discarded, and I did not once observe it consuming any plants. However, vegetation is recorded as being part of the Masked Finfoot's diet in Wells (1999) and Smythies (2001).

The Masked Finfoot was observed actively swimming and foraging around the entire pond. Occasionally it would leave the water to defecate or preen. I observed the bird in flight only once, when it made a short flight half way across the pond, several feet above the surface. Masked Finfoots are thought to rarely take flight and when

they do, it is only a few feet above the water (Khan 2003). On one other occasion it was seen by other local naturalists taking flight and landing in a small tree protruding from the water, when harassed by a pair of otters (Stephen Hogg pers. comm., April 2005).

Preening, defecating and vocalisation

The Masked Finfoot was seldom seen preening while in the water. It did, however, spend time preening on exposed logs. On four occasions I watched it climbing up a log protruding out of the water at about a 30° angle until it was about a metre above the water and spending approximately 15 minutes there, preening, stretching its legs and wings and peering around its surroundings. On three occasions it was observed leaving the water, immediately defecating on the ground approximately 30–45 cm from the water's edge, and then immediately returning to the water. It was not seen leaving the water during the daytime for any other purpose, except occasionally to preen on exposed logs.

On one occasion, the juvenile male, was observed vocalising while swimming. The call was a bubbling sound that lasted approximately three seconds. No other vocalisations were heard. This is fairly consistent with the call described in Wells (1999).

A second Masked Finfoot

A second Masked Finfoot was observed in the same pond on 23 January 2005. The second bird was observed briefly and only on that one occasion. It had similar markings to the first, but as no "horn" was visible it may have been a female. Both birds foraged in the open and around the water's edge for a few hours, the juvenile male being seen much more often, spending long periods foraging in the open and, at times, climbing on to logs and preening, out of the water. The female was mostly observed at the edge of thick vegetation, often under overhanging plants, barely visible. Only twice were both birds seen in the open pond at the same time. At one point, both were observed foraging on opposite sides of the pond. Later, other birdwatchers saw the juvenile male chasing the female, which presumably moved off to another location.

Both birds, especially the juvenile male, seem undisturbed by people. The juvenile male often approached, while foraging for food in the water, as close as 10 m to birdwatchers observing it from the shore. It also seemed unconcerned with the large Water Monitor Lizards *Varanus salvator* that often swam within less than a metre past it while foraging.

Conservation

Owing to habitat loss and degradation, and continued hunting in some places, this species has a small and declining population throughout its range, and is red-listed as Vulnerable (BirdLife International 2001). In Peninsula Malaysia, the Masked Finfoot is a protected species. However, as was clearly stated by Chong (1994), it is the habitat that should be the focus of protection. The siltation of rivers from logging operations is believed to have restricted inland foraging habitat (Wells 1999). Small ponds, such as the one discussed here, may be of value to Masked Finfoots as non-breeding (at least) habitat, but clearly further research on the habitat requirements and the status of the Masked Finfoot is needed in order better to understand and protect this species and its habitats.

Acknowledgements

The birdwatchers (including those from the Malaysian Nature Society Birders Group) that contributed information and accompanied the author on these trips to the Forest Research Institute of Malaysia are to be thanked. Peter Davidson is also to be thanked for very helpful comments on an earlier draft.

References

BirdLife International (2001) *Threatened birds of Asia: the BirdLife International Red Data Book*. Cambridge, UK, BirdLife International.

Chong, M. H. N. (1994) Masked Finfoot *Heliopais personata* in Peninsular Malaysia. *Oriental Bird Club Bull.* 20: 28–31.

Howes, J. (1988) A note on the foraging behaviour of the Masked Finfoot (*Heliopais personata*). *Enggang* 1(3):13.

Khan, M. M. H. (2003) Masked Finfoot *Heliopais personata* – the elusive bird of the Sundarbans, Bangladesh. *Oriental Bird Club Bull.* 38: 43–45.

MacKinnon, J. & Phillipps, K. (1993) *A field guide to the birds of Borneo, Sumatra, Java and Bali*. New York: Oxford University Press.

Milton, G. R. (1985) Notes on the distribution of the Masked Finfoot *Heliopais personata* in Indonesia. *Kukila* 2: 41–43.

Robson, C. (2000) *A field guide to the birds of South-East* Asia. London: New Holland.

Smythies, B. E. (2001) *The birds of Burma*. Fourth edition. Kota Kinabalu: Natural History Publications.

Wells, D. R. (1999) *The birds of the Thai-Malay Peninsula*, 1. San Diego and London: Academic Press.

Chris R. Shepherd,
TRAFFIC Southeast Asia, Unit 9-3A, 3rd floor,
Jalan SS23/11, Taman SEA, 47400 Petaling Jaya,
Selangor, Malaysia
Email: cstsea@po.jaring.my

NOTEBOOK

First record of Masked Finfoot *Heliopais personata* from Kama, Bharatpur district, north-west India

ASHOK VERMA & VINOD BIHARI MATHUR

The Masked Finfoot *Heliopais personatus*, a globally threatened bird, is known to occur in the north-east Indian subcontinent, being otherwise restricted to South-East Asia, where it undertakes unclear winter movements (BirdLife International 2001, Islam & Rahmani 2004). Undiscovered populations may survive in eastern Arunachal Pradesh, parts of Nagaland, Manipur and Mizoram (Choudhury 1997). With one confirmed breeding record from Dum Duma River, Assam, the bird is believed to be a very rare breeder in India (BirdLife International 2001). The present observation of the species in Bharatpur is the first record of this species from north-west India.

At around 15h00 on 14 September 2005, a sunny cool day, two Masked Finfoot were seen foraging actively along with Little Grebes *Tachybaptus ruficolli*, Little Cormorant *Phalacrocorax niger* and Green Sandpiper *Tringa ochropus* in a small natural waterbody located in a village called Nonera (27°46'26.3"N 77°17'44.0"E) about 12 km from the main town of Kama (or Kaman) and 60 km north of Bharatpur district, eastern Rajasthan (north-western India). The area borders the states of Uttar Pradesh and Haryana. The birds were identified as Masked Finfoots by their prominent long necks and conspicuous stout yellowish bill, and as females or juveniles by their whitish throat, and white and black stripe extending from the eye down the side of the neck. The pond was a natural depression extending over an area of about 50 ha. It receives water from rains and through seepage of the Gurgaon Canal which passes through this village and joins Yamuna River in Uttar Pradesh. The water is brackish and therefore cannot be utilised for crop irrigation; thus the pond remains water-filled throughout the year. Tall grasses *Saccharum* and other perennials like *Typha* and trees *Acacia* border the wetland. Salt-tolerant vegetation is also widespread in the area. The wetland attracts a fairly large concentration of migratory waterbirds including Northern Shoveler *Anas clypeata*, Common Teal *A. crecca*, Northern Pintail *A. acuta*, Little Stint *Calidris minuta*, Ruff *Philomachus pugnax*, Pied Avocet *Recurvirostra avosetta*, gulls *Larus*, Great Cormorant *Phalacrocorax carbo*, Grey Heron *Ardea cinerea*, Greater Flamingo *Phoenicopterus ruber*, Eurasian Spoonbill *Platalea leucorodia* and Painted Stork *Mycteria leucocephala*. During six further monthly visits to the site between October 2005 and March 2006 the finfoots were not seen again. They were probably on passage migration and used this water body as a stopover.

Acknowledgements

The observation was made under the project 'Enhancing our Natural Heritage'—a collaborative project of WII—UNESCO. Villagers of Nonera especially Lakhan Singh, Ramswarup Sharma and Mohan Shyam Jangid are thanked for their hospitality and cooperation. Dharam Singh, Dashrath, Mahender, Ginni and Yogesh and Dhanesh Kumar (Bharatpur) assisted me sincerely during the waterfowl survey. We thank P. R. Sinha, Director, Wildlife Institute of India (WII) for being always encouraging.

References

BirdLife International (2001) *Threatened birds of Asia: the BirdLife International Red Data Book*. Cambridge, UK: BirdLife International.

Choudhury, A. U. (1997) Current status of the Masked Finfoot *Heliopais personata* in India. *Newsletter for Birdwatchers* 37 (5): 90–91.

Islam, M. Z. & Rahmani, A. R. (2004) *Important Bird Areas in India: priority sites for conservation*. Mumbai: Bombay Natural History Society and BirdLife International.

Ashok Verma (email: ashokv@wii.gov.in) and Vinod Bihari Mathur, Wildlife Institute of India, Chandrabani, Dehradun 248001, India

NOTEBOOK

Apparent unrecorded migratory route of Dalmatian Pelican *Pelecanus crispus* in Nag Valley, Pakistan

MUHAMMAD SAJID NADEEM, MUHAMMAD ASIF, GHULAM MUJTABA & TARIQ MAHMOOD

Nag Valley is located at 27°41'N 65°14'E between Besima and Panjgur in south-west Kharan-Balochistan district, Pakistan (see map). It is a narrow valley covering about 1,500 km^2 and lying at 1,100–1,600 m. The climate of the area is generally arid with a maximum precipitation of some 200 mm per annum. Rainfall is usually erratic and irregular, but with most precipitation during winter and very rarely in early spring. Rainfall seems to exhibit a cyclic fluctuation with 2–3 years of drought followed by more generous rain. Wind (speed 10–20 mph) is a constant feature of Nag Valley and this lowers the temperature. Nadeem *et. al.* (2004) recorded mean minimum and maximum temperatures of 16°C and 30°C in April.

The Dalmatian Pelican *Pelecanus crispus* is a conservation dependant species that occurs as a winter visitor to central and southern Pakistan. Little is known about its migration in Pakistan and specifically there are no previous records from interior central Baluchistan. (BirdLife International 2001).

We visited the Nag area every year 1997–2001 to survey the breeding population of Mcqueen's Bustard *Chlamydotis macqueeni* from early March to late May as part of a project funded by the Houbara Foundation International, Pakistan. We have found that Dalmatian Pelicans appear to use the Nag area on migration. In 1998 we stayed in Nag village and on the morning of 7 April 1998, two groups of Dalmatian Pelican, each consisting of 25–30 birds (Plate 1), were observed on the ground near Nag village at about 07h00 when we were en route to the study area. In 1999, we camped in the study area 40 km away from Nag village and visited the village to collect water after completing the daily survey at about 10h30. Groups of about ten and 15–20 pelicans were again seen at the same locality on the same date in 1999 and 2000, at about 11h00. The location was 27°15'N 65°03'E and altitude 1,343 ± 36 m. at a distance of 7.9 km from Nag Village (recorded by GPS) and

Plate 1. A group of pelicans in Nag Valley

some 300–400 m from the main track leading to Panjgur. The dominant botanical species in the area were *Zygophyllum eurypterum*, *Rhazya stricta*, *Pennisetum divisum*, *Otostegia aucheri*, *Cymbopogon jwarancusa*, *Fagonia indica* and *Peganum harmala*. Pelicans were not seen in the area in 1997 or 2001.

Two local people who worked for us as guides advised us that they had seen the pelicans regularly over the previous 15–20 years and their numbers had declined markedly over this period. The local ethnic population is beyond the reach of local authorities and hunting is a traditional activity. The people of Nag consider that the oil of the pelican is an aphrodisiac and also useful as a remedy for arthritis. Consequently the hunting pressure on pelicans is very high in this area during the migration and conservation measures are required. During our stay we succeeded in convincing local people not to hunt bustards during the breeding season by means of poster and pamphlet campaigns. Such awareness campaigns might also be useful for pelicans.

References

BirdLife International (2001) *Threatened Birds of Asia: the BirdLife International Red Data Book*. Cambridge, UK: BirdLife International.

Nadeem, M. S., Mian, A. A., Rashid, H. & Asif, M. (2004) Habitat, population, breeding activities and threats to Houbara Bustard *Chlamydotis undulata macqueenii* in Nag Valley (1999–2001). *Berkut* 13: 244–257.

Muhammad Sajid Nadeem,
Zoology Department, University of Arid Agriculture, Rawalpindi, Pakistan

Muhammad Asif,
Research Associate, Natural History Museum, Islamabad, Pakistan

Ghulam Mujtaba,
Biochemistry Department, Hazara University, Mansehra, Pakistan

Tariq Mahmood,
Department of Biological Sciences, Quaid-I-Azam University, Islamabad, Pakistan

NOTEBOOK

A presumed nest of Guaiabero *Bolbospittacus lunulatus*, an endemic Philippine parrot

M. S. L. MILLS

Guaiabero *Bolbospittacus lunulatus* is a small, stocky parrot endemic to the Philippines. Although it is the sole member of its genus, it resembles in structure the *Psittaculirostris* fig parrots (Juniper & Parr 1998) from the island of New Guinea and surrounds.

Despite being common and widespread on the Philippines, its nest remains undescribed. It has been found with enlarged gonads in March and May (Kennedy *et al*. 2000), but it appears that no more is known about its breeding habits, other than information from attempted captive breeding—clutch size of 3–4 eggs (two clutches) and incubation of 22 days (in Arndt 2005).

At around 10h30 on 8 February 2003 I was observing birds on Mount Makiling, southern Luzon, where the *lunulatus* subspecies of Guaiabero is found. Just above the forest border I found what I believe almost certainly to have been the nest of a Guaiabero. Hearing a bird calling overhead, I looked up and saw it perched at the entrance of a hole in a large earthen mound, apparently the nest of an ant species, 20–25 m above the ground on one of the main trunks of a large canopy tree, among the leaves of a substantial epiphytic fern. The ant nest was a more-or-less circular mass of dark brown earth, c.40 cm in diameter, while the circular entrance to the presumed parrot nest was only slightly wider than the bird (a female), with the tunnel sloping down to the entrance. The head of the bird could be seen protruding from the entrance of the nest, and was observed in this position for at least an hour.

The vast majority of parrot species are cavity-breeders (Juniper & Parr 1998), and the Guaiabero appears to be no exception. That it should nest in earthen cavities is perhaps more of a surprise, as its presumed closest relatives, in *Psittaculirostris*, appear to nest in tree cavities. However, more nests will have to be found before it can be confirmed that ant nests are regularly used for breeding.

References

Arndt, T. (2005) The Guaiabero. *BirdingASIA* 4: 41–46.

Juniper, T. & Parr, M. (1998) *Parrots. A guide to the parrots of the world*. Robertsbridge, Sussex, UK: Pica Press.

Kennedy, R. S., Gonzales, P. C., Dickinson, E. C., Miranda, H. C. & Fisher, T. H. (2000) *A guide to the birds of the Philippines*. Oxford: Oxford University Press.

M. S. L. Mills,
DST/NRF Centre of Excellence at the
Percy FitzPatrick Institute, University of Cape Town,
Rondebosch 7701, South Africa
email: michael@birdingafrica.com

NOTEBOOK

Black-faced Spoonbill article

XXX XXXXXXXX








NOTEBOOK

Bhitarkanika Wildlife Sanctuary (Orissa), a key congregation area for Indian Skimmer *Rynchops albicollis*

G. V. GOPI, A. K. JENA & BIVASH PANDAV

Of the three species of skimmer belonging to the family Rhynchopidae, Indian Skimmer *Rynchops albicollis* is the least studied and has been listed as globally Vulnerable (BirdLife International 2001). Formerly widespread and locally abundant, it now occurs in few isolated colonies with rapid declines in the population.

Here we report Bhitarkanika Wildlife Sanctuary in Orissa as a key congregation area of Indian Skimmers in the country. It was reported from Bhitarkanika by Kar (1991) but not recorded in 1993–1995 by Pandav (1996), so the earlier record was treated as uncertain by BirdLife International (2001). More recently, Nayak (2003) counted about 60 birds from different parts of the sanctuary. On 1 November 2005, while documenting impacts of land-use changes on heronries, we came across a flock of 110 Indian Skimmers flying in unison, which then landed on the sandbars of Praharajpur dhia (island) exposed during the ebb tide. On our subsequent visits to Praharajpur dhia in December 2005 and January 2006, an average of 85–100 individuals were sighted around the same locality. The Annual Midwinter Waterbird Census carried out by the Mangrove Forest Division of Orissa on 11–12 December 2005 revealed 108 birds in Praharajpur and the Barunei estuary. Praharajpur in the Hansua River lies approximately 2 km south of the Barunei estuary. There is a small mangrove patch in the island covered with *Phoenix paludosa*, *Excoecaria agallocha* and *Avicennia officinalis*.

The seasonal movements of this species in the subcontinent are imperfectly known. Although it is said to be a winter visitor to the Orissa coast, the fact that some individuals continue to be sighted during summer in Bhitarkanika (pers. obs.) points to the probable breeding of the species. It is also to be noted here that there are potential habitats like isolated open beaches, sandbars and mudbanks available for nesting of skimmers around the Barunei estuary.

Acknowledgements

We gratefully acknowledge Mr Bijoy and Mr Kirodh, our field assistants, for their sincerity and hard work, and Mr Jayapal for his valuable comments.

References

BirdLife International (2001) *Threatened birds of Asia*. Cambridge, UK: BirdLife International.

Kar, S. (1991) Checklist of birds in the Bhitarkanika Wildlife Sanctuary, Orissa. *Newsletter for Birdwatchers* 31(11/12): 3–6.

Nayak, A. (2003) Preliminary field guide to the Birds of Bhitarkanika. Privately published. Pp. 32.

Pandav, B. (1996) Birds of Bhitarkanika mangroves, eastern India. *Forktail*. 12: 7–17. Sharma, R. K., Sharma, S. and Mathur, R. (1995) Faunistic survey of river Mahanadi vis-a-vis environmental condition in Madhya Pradesh. *Tigerpaper* 22(3): 21–26.

G. V. Gopi[1], A. K. Jena[2] and Bivash Pandav[1]
[1]Wildlife Institute of India, Post Box # 18, Chandrabani, Dehradun – 248001. Email: gopigv@wii.gov.in
[2] Divisional Forest Officer, Bhitarkanika Wildlife sanctuary, Orissa

Letters to the Editor

Regarding the Japanese and scientific names of Japanese and Ryukyu Robin

Dear Sirs

As a speaker of Japanese, I have been intrigued about the seeming confusion surrounding the scientific and Japanese names of Japanese Robin *Erithacus akahige* and Ryukyu Robin *Erithacus komadori* for some time. The Japanese name for Japanese Robin is *komadori*, while the name for Ryukyu Robin is *akahige*. The specific scientific name for Japanese Robin is *akahige* and that of Ryukyu Robin is *komadori*. Interesting to note the names have been transposed! The standard translation for *akahige* would be "red beard" in English. Given that Japanese Robin has a red face and breast, as opposed to the black face and breast of the Ryukyu Robin, it would appear that the scientists are, as usual, in the right and the laypeople are somewhat confused! Mark Brazil also briefly discusses this conundrum in *The birds of Japan* (1991), where he states that he believes the names have been applied to the wrong birds. However, I think I have found an explanation.

Japanese Robin *E. akahige* is a common summer visitor to the main islands of Japan, from Kyushu northwards to Hokkaido, as well as to the Izu Islands and several of the outlying smaller islands. The Ryukyu Robin *E. komadori* occurs throughout the Nansei Shoto (South-West Archipelago) where it is resident from various of the small islands off the coast of Kyushu to the southernmost islands of Yaeyama. The two species overlap only on the small island of Yakushima, located just 60 km from the southernmost point of Kyushu.

A recent discussion with an elderly local resident of Amami Oshima led to the fascinating discovery for my part that the word *hige*, which means "beard" in standard Japanese, is used to mean "feather" in the local Amami dialect. Japanese is exceptionally rich in dialects; the Amami dialect belongs to the Ryukyuan languages found from Amami Oshima to Yonaguni in the southern archipelago. The Ryukyuan languages diverged from other Japanese dialects some time between the 6th and 12th centuries. In very many ways this language differs from standard Japanese but its use is gradually dying out as people under 40 years of age have been educated in standard Japanese. So in fact the Japanese name *akahige* for Ryukyu Robin, which is probably derived from the Ryukyu dialect, may describe its most striking feature—its rich red plumage. It would seem that the scientific names for both species is in fact, strictly speaking, in error and may have been originally applied in the mistaken belief that the Japanese names are incorrect. That said, both birds feature striking red plumage.

Of course, the local Japanese names undoubtedly have a long history and it is quite probable that, until recent times, the people of the Ryukyu or Nansei Islands were not aware of the existence of the Japanese Robin, which is restricted to the main islands. So there was never any cause for confusion on the part of the islanders—they merely gave an appropriate local name to describe the bird's most outstanding feature.

Reference

Brazil, M. (1991) *The birds of Japan*. London: Christopher Helm.

Susan Myers,
13 Ryan Street, Brunswick East VIC 3057 Australia.
myers_susan@yahoo.com.au

Bird species recorded on Lombok in October 1992

Dear Sirs

We were interested to read the paper in *Forktail* 21 on bird records from Lombok (Myers & Bishop 2005) and had not previously appreciated the paucity of information about the avifauna of the island. We made a short visit to Lombok, 20–23 October 1992. Unlike most recent visitors who have targeted the montane species to be found on Gunung Rinjani, we spent our time on the west coast near Senggigi and Tanjung and the lower-lying western fringes of Gunung Rinjani National Park north of Mataram and Senggigi. A day trip to the Gili Islands that lie close offshore in the Lombok Strait produced several species not seen elsewhere. In all we recorded about 60 species and our complete list is available on request. What we take to be our more interesting observations in the light of the paper by Myers & Bishop are summarised below.

Seabirds On the late afternoon of 20 October we noted a large gathering of about 500 terns, noddies and boobies following shoals of fish on the west coast between Ampenan and Senggigi. Many were too far out to allow positive identification, but Great Crested Tern *Sterna bergii*, Bridled Tern *S. anaethetus*, at least five Brown Noddy *Anous stolidus* (possible first record for Lombok), about 20 Brown Boobies *Sula leucogaster* and one Red-footed Booby *S. sula* were confidently recorded. Surprisingly, no frigatebirds were amongst them although they were seen on the following days flying from north to south along the western coastline between Tanjung and Senggigi. Two groups of Great Frigatebird *Fregata minor* were seen on the afternoon of 21 October, one of which contained a single female Christmas Island Frigatebird *F. andrewsi*. On 22 October a mixed group of Great and Lesser Frigatebird *F. ariel* was noted.

The Gili Islands During the outward boat trip on 21 October

Reviews

Birds in Bhutan: status and distribution. By Peter Spierenburg. 2005. Oriental Bird Club, Bedford, UK. 383 pp., 950 maps and graphs. ISBN 0-9529545-1-6. Hardback, £40.

One of the last countries on earth to be ornithologically explored, Bhutan has very recently become far better known through the extensive efforts and activities of bird tour groups, biodiversity surveys and private birders. This book is an excellent compilation of the vast amount of observational data thus generated. Nevertheless, the author points out that knowledge of avian diversity and distribution is still in its infancy in Bhutan, and many areas are still completely or nearly unknown ornithologically.

The introduction gives a careful and thorough exposition of the methodology used in preparing the dataset, analysing and presenting distribution patterns, and an analysis of the completeness of the data. Despite the welcome attention to detail manifested by these sections, I was left wondering how records went from simply being records to becoming confirmed records, in my view a most important and difficult issue that requires much greater transparency than accorded here and elsewhere. The author's decision not to include rationale for non-included records seems regrettable, as this could have been done with minimal impact on the length of the book, which is not in any case formatted for field use. Numerous helpful maps and figures supplement these sections of the Introduction, such as a map of the geographical coverage of the whole dataset on bird distributions for Bhutan and a graph of their distribution by season and altitude. Other sections of the introduction cover in a concise and useful manner the history of ornithology, habitats, migration and conservation.

Each species considered reliably recorded from Bhutan is accorded an account that typically consists of text summarising its broader geographical occurrence and habitat, followed by data specific to Bhutan, including residential status, abundance, and elevational range. Singular or key records are referenced to source. Details are provided for evidence of breeding, and the various types of evidence are categorised in a standard manner explained in the introduction. Each text (except for the rarest species) is accompanied by an attractive map of Bhutan showing the grid squares for which there are records considered confirmed, as well as overlays in various shades of green showing probable winter, year-round and summer ranges, which are based on the species's altitudinal range, its occurrence in each of nine biogeographical units and, in some cases, its habitat associations. Frequent non-congruence evident between mapped records and the predicted ranges must reflect not only the lack of observer effort in many areas, but also in some cases our weak knowledge of the ecological factors governing bird distributions. Although these maps will no doubt be very useful in a variety of ways, I feel they would have benefited from the use of more contrasting colours such as those typically seen in field guides, and especially from the use of differing symbols to indicate differing types of data and seasonality. Presumably a system such as that used in Inskipp & Inskipp (1991: *A guide to the birds of Nepal*. Second edition, Christopher Helm, London), in which specimens are distinguished from sight records, and breeding *vs* non-breeding season records (among others) are indicated, could have been adopted to the great advantage of the user. A major and very helpful additional feature for each regularly recorded species is a graph plotting month on the x-axis against elevation on the y-axis. Quite a few accounts are accompanied by pleasing and evocative black-and-white drawings.

Following the species accounts is a useful list of accessible birding sites for the country accompanied by a clear map. Given that the author must have geo-referenced each locality, it would have been very beneficial and presumably not much additional work had a gazetteer been presented as an appendix, especially since many localities published for Bhutan are difficult or impossible to locate using readily available sources.

Among the more specific problems I noticed are inaccuracies in the account for Spotted Bush Warbler *Bradypterus thoracicus*, which is said not to have been recorded in the country between the 1930s and 1995, while in fact two published specimens exist from 1967 and 1986 (Ali *et al*. 1996, *Birds of Bhutan*, Zoological Survey of India, Calcutta). The considerable data available from the Ludlow Bhutan series held at the Natural History Museum in Tring is not fully utilised, and users should be aware that this appears to be the case for the entire book. For the case of the Russet Bush Warbler *Bradypterus seebohmi*, not only is a junior synonym perpetuated for *B. mandelli* (despite the treatment of this matter in Dickinson *et al*. 2000, *Zool. Verh*. 331:11–64), but so is the misconception that this species was only recently discovered in the Indian subcontinent and Bhutan, when in fact numerous nineteenth century specimens (also detailed in Dickinson *et al*. 2000) exist, although their identity had been confounded by an erroneous prevailing taxonomic treatment.

All in all, this book is well produced and provides a wonderful resource. I highly recommend it to anyone interested in any aspect of the region's birds.

Pamela C. Rasmussen

Birds of tropical Asia 3: sounds and sights v3.0 DVD-ROM for Windows. By Jelle Scharringa. 2005, Bird Songs International BV, Rondostraat 158, 7534 GN Enschede, The Netherlands. www.birdsongs.com

This is the third version of *Birds of tropical Asia* in just six years. However, in this period the content has increased dramatically, not only in sound recordings but also photographs. Comprising 2,090 sound recordings and 700 photographs of 911 and 483 species respectively, this is the largest commercial package of Asian bird recordings. The increased capacity now means that it is stored on a DVD-ROM, as opposed to the previous versions which were just a CD-ROM.

The user-friendly interface remains (see review of version 1 by Pete Morris, *OBC Bulletin* 30, 1999), making for easy reference, although the search tool enables a quicker search for a particular species or family. Once a species is highlighted, extra information is brought up, either with photographs or sound recordings (between one and six recordings per species) and, on a few occasions, both. The recordings are generally of a high standard, Phasianidae and Timaliidae being particularly well represented, although some of the rarer species are understandably of a poorer quality to the general standard. However, I particularly enjoyed listening to the many rare and range-restricted species whose vocalisations are relatively little known, including Bornean Peacock Pheasant, Bulwer's Pheasant, Negros Bleeding-heart and Simeulue Scops Owl. The photographs are of an equally high standard (see, for example, the gripping Masked Finfoot photo), although it is slightly disappointing to find the large number of in-hand photographs, especially given the continuing expansion of the Oriental Bird Images database (http://www.orientalbirdimages.org) which now has over 2,300 species from the Oriental region.

The most innovative improvement on previous versions of this DVD is being able to store the recordings as .WAV files, so that you can produce playlists for trips and for reference. This capability also allows the user to record songs onto personal recording equipment with ease. Another addition to the program is the inclusion of vocalisations and photographs of mammals, reptiles and amphibians, although this feature is still in its infancy, with just a single species for the amphibians section; hopefully, this will increase in future versions.

My personal favourite feature is the "Slides and Sounds Show", where the program can choose a random selection of sounds and photographs from any selected country within the region. This is a great learning tool for all levels of birders.

Overall, this is a worthy upgrade for PC users and an essential purchase for anyone interested in learning more about the birds of this fascinating region.

James Eaton

Handbook on Indian wetland birds and their conservation. By Arun Kumar, J. P. Sati, P. C. Tak and J. R. B. Alfred. 2005, Zoological Society of India, Kolkata. 494 pages. 42 colour plates, numerous colour photos and figures. ISBN-81-8171-058-4. Hardback. Rs 1500/$80/£60.

India's great diversity of climate and topography are reflected in its wealth of wetland habitats and wetland birds. From remote Himalayan lakes to the arid zone wetlands of Gujarat, and from the well-protected jewel of Bharatpur to the highly utilised wetlands of East Kolkata, India is a country where wetlands are prominent features, of great importance both to wildlife and humans. It is highly appropriate therefore that this book encompasses this diversity: a fact-packed 494 pages containing pretty much everything you could conceivably wish to know about Indian wetland birds and their habitats. The full extent of the contents is almost too much to list in full here: an introduction has sections on biogeography, wetland birds and their values, habitats, heronries, migration, major flyways, and watching wetland birds. The second chapter constitutes the bulk of the book: a checklist followed by descriptions of 310 wetland and "wetland-dependent" (though I'm never quite sure what the difference is) bird species, with illustrations, photos and distribution maps. Subsequent chapters explore the status of wetland birds, socio-economics of wetlands, the protected area network, and a framework for wetland conservation. References follow, and there are eight appendices, mainly providing information on relevant international conventions (focusing not surprisingly on the Ramsar Convention).

For many potential readers, the main feature of a book like this is the species accounts, and these do fill the bulk of this title. They are presented from an Indian perspective, which gives this book a degree of distinctiveness, but possibly little material not found in other handbooks. The maps are detailed (using a somewhat confusing array of symbols), and at least one colour photograph is provided for almost all species. The 42 identification plates offer relatively elementary (by modern field guide standards) but basically accurate portrayals of the 310 species covered.

However, what appealed to me about this book was the remarkable quantity of information provided in the remainder of the book. It would be beyond the scope of this review to present a critique of all aspects covered, and it is all too easy to find fault in a book which covers so much ground, so instead I will focus on a few features that I really liked.

I was particularly pleased to find, in what is essentially a bird book, a quite detailed section on wetland habitats, and a chapter dedicated to the socio-economics of wetlands, where links between species and habitats could be explored, together with the value that these habitats provide to people. This is also highly appropriate in a book about India, where many people's lives are so closely linked to wetlands and their wildlife. The emphasis placed on the

protected area network, the threats faced by wetlands and wetland birds and strategies for their conservation is also to be commended. The inclusion of "wetland dependent" bird species is also an asset, although this inevitably highlights grey areas (Winter Wren *Troglodytes troglodytes* is included but whistling-thrushes *Myophonus* are not).

That so much information is presented in a readable way in a book which is quite compact is a credit to the authors and publishers. Anyone with an interest in Indian wetlands and birds would find something of interest within its pages.

Seb Buckton

Handbook of the birds of the world. Volume 10: cuckoo-shrikes to thrushes. Edited by Josep del Hoyo, Andrew Elliott and David Christie. 2005, Lynx Edicions, Barcelona. 895 pages, 81 colour plates, 427 photographs. ISBN 84-87334-69-5. Hardback, £120.

HBW 10 is another outstanding volume in the ongoing series, and a key reference for Oriental birders, covering a number of typical Old World families, namely the Campephagidae (cuckoo-shrikes, minivets, flycatcher-shrikes, wood-shrikes, trillers), Pycnonotidae (bulbuls), Chloropseidae (leafbirds), Irenidae (fairy-bluebirds), Aegithonidae (ioras), Prunellidae (accentors) and the huge (336 species!) family Turdidae, which includes the thrushes, chats, robins, shamas, whistling-thrushes, rock-thrushes, forktails and wheatears. Dippers, wrens, Hypocolius and waxwings are also covered. Of all the recent *HBW* volumes, this is perhaps the most important to have on your bookshelf if you are a keen Oriental birder.

The foreword, "The ecology and impact of non-indigenous birds", makes interesting reading, although it primarily draws on data and examples from New Zealand and Hawaii, with almost no reference to the Oriental region. Nevertheless, this is an incredibly important subject to be aware of, considering that non-indigenous species represent the second most-frequent threat of species extinction after habitat loss, especially on oceanic islands. Some of the most successful non-indigenous bird species are Oriental in origin, including various mynas and Java Sparrow *Padda oryzivora*.

As with recent volumes, this is a huge tome with a remarkable diversity of excellent photographs and 737 distribution maps to accompany the species accounts. The quality of maps is quite varied. For example, for many species occurring on Borneo and Sumatra, the map shows the entire island as the range of the species, even for species that are rarely encountered above 900 m (e.g. Olive-winged Bulbul *Pycnonotus plumosus*). In contrast, maps for certain Sundaic Campephagidae and Turdidae, such as Bar-bellied Cuckoo-shrike *Coracina striata* and Chestnut-capped Thrush *Zoothera interpres,* appear to be much more precise. Mapping, of course, is highly time-consuming and never going to be completely accurate, but it should be fairly easy to exclude the mountains from the depicted range of lowland birds.

One thing that I could not help but notice is that there appears to be considerable inconsistency in the approach of the different family authors in dealing with taxonomic issues. Some authors appear to have adopted a very conservative approach, apparently mainly following existing taxonomy rather than taking the opportunity to re-evaluate the ranking of some of the more obvious candidates for species. Some would argue that *HBW* is not the place to elevate particular taxa to species level, but there are already precedents in previous volumes, and many birders, including professionals, take taxonomic decisions made by *HBW* family authors very seriously. Hence, I was disappointed to see little attempt to revise the taxonomy of the Campephagidae in this volume, particularly since there are some very good candidates for elevation to species level, but also because some of these were elevated to species level by Rasmussen & Anderton (2005) in a book also published by Lynx Edicions. In contrast to *HBW*, Rasmussen & Anderton recognise Andaman Cuckoo-shrike *Coracina dobsoni* of the Andamans (retained with *C. striata* in *HBW*) and Malabar Woodshrike *Tephrodornis sylvicola* of the Western Ghats (retained as *T. virgatus* in *HBW*) as full species. Some of the other Campephagidae, such as Wallacean Cuckoo-shrike *Corancina personata,* with six highly differentiated subspecies, surely also include taxa that could be elevated to species level with a little additional research. Perhaps, however, some *HBW* authors have inadequate access to skin collections and relevant literature to undertake such work.

The taxonomic approach taken with some of the other families treated in the volume would appear to be more consistent with recent works. Hence, for the most part, Rasmussen & Anderton's (2005) recent splits amongst the bulbuls and thrushes of the Indian subcontinent appear to have been followed, with the exception of *Zoothera neilgherriensis* which is retained as a race of Common Scaly Thrush *Z. dauma* in HBW, and the Andaman Shama *Copsychus albiventris*, which is treated as a race of White-rumped Shama *C. malabaricus*.

Existing taxonomy of many polytypic species in the Sundaic region and in Wallacea requires closer scrutiny, and I was happy to see that the species accounts for leafbirds, bulbuls and thrushes reflect this need. Elevated to species rank in *HBW* are Sumatran Leafbird *Chloropsis media*, Northern Golden Bulbul *Thapsinillas longirostris*, Southern Golden Bulbul *T. affinis*, Cinereous Bulbul *Hemixos cinereus*, Ruby-throated Bulbul *Pycnonotus dispar* and Bornean Bulbul *P. montis.* Grey-backed Thrush *Turdus hortulorum* has been split from Black-breasted *T. dissimillis*. For Indonesian thrushes, *HBW* follows Collar (2004), which revised the taxonomy of, amongst other things, the long-neglected whistling-thrushes and *Zoothera* thrushes of the region. However, not all good candidates for splitting have been split in *HBW,* so, for example, the north Bornean race *leucops* of Flavescent Bulbul *Pycnonotus flavescens*, despite its

geographic isolation and obvious morphological differences, remains for the time being as a subspecies, as do the various distinct races of Mountain Bulbul *Ixos mcclellandii* and Himalayan Black Bulbul *Hypsipetes leucocephalus*. Good candidates for lumping or splitting within the Turdidae are listed on page 529.

Another notable taxonomic decision is the inclusion within the thrushes of two of the most enigmatic of Sulawesi's endemics, the Geomalia *Geomalia heinrichi* and Sulawesi Thrush *Cataponera turdoides* (which have both sometimes been treated as babblers), and the Black-breasted Fruithunter *Chlamydochaera jefferyi* of Borneo. This seems highly appropriate, based on the evidence presented. The painting of Geomalia, however, is one of the poorest in the volume; to me it looks very much like a long-tailed *Zoothera,* whilst in *HBW* it is depicted as rather babbler-like. Finally, it is worth mentioning that Blue-wattled Bulbul *Pycnonotus nieuwenhuisii* is retained as a good species despite the suggestion that it is a hybrid (Williams 2002).

References

Collar, N. J. (2004) Species limits in some Indonesian thrushes. *Forktail* 20: 71–87.

Rasmussen, P. C. & Anderton, J. C. (2005) *Birds of South Asia: the Ripley guide.* Barcelona: Lynx Editions.

Williams, R. S. R. (2002) The rediscovery and doubtful validity of the Blue-wattled Bulbul *Pycnonotus nieuwenhuisii*. *Forktail* 18: 107–109.

Frank Lambert

Important Bird Areas in Asia: key sites for conservation (BirdLife Conservation Series No. 13) By BirdLife International, Cambridge, UK. 2004. 297 pages; numerous colour photographs and regional maps. ISBN 0-946888-54-X. Softback, £19.00. Available from NHBS Ltd, Totnes, Devon.

This well-produced and attractive publication turns the spotlight onto Asia, home to 332 threatened species. It aims to identify a network of regionally important locations that qualify as Important Bird Areas due to their significantly high species diversity, high degree of endemism, or importance to the long-term survival of one or more species. Data are presented in a clear and precise format, with numerous colour photographs of sites and primary habitats, national maps showing the location of each site, and tables presenting individual site and species data. Appendices provide further summary information within several clear and concise tables. Although repetitive at times, their provision enables users to extract information in a format most suited to their needs.

Covering 28 countries and territories extending from arctic Siberia to Indonesia, and west to Pakistan and Mongolia, a total of 2,293 IBAs are discussed. IBAs are listed on a country-by-country basis, numbering between one site (Macao) and 465 sites (India). Although these identified IBAs are crucial to the long-term survival of so many species, it is startling to realise that 43% have no official recognition and lie outside formal protected area networks, while a further 14% enjoy only partial protection. The IBAs identified here total 2,331,560 km^2, which amounts to just 7.6% of the total land area of the region under review.

Key habitats and important bird species are summarised for each country, along with an overview of the national conservation infrastructure and the systems in place which define and protect important species and sites. This is followed by a breakdown and summary of the national IBA inventory and the threats and conservation issues that the country faces. The bulk of each national account is, however, taken up with individual site summaries. Although some sites, such as the Mai Po Marshes in Hong Kong, and Izumi, Japan, enjoy a high international profile, others including the threatened Saemangeum mudflats in South Korea, are equally high profile for all the wrong reasons. Strangely, despite its imminent demise, Saemangeum is not listed under this name, and only by carefully scanning through the introductory text does it become apparent that it spans two adjacent localities and is listed under two unfamiliar names. Many of the sites listed will, however, be largely unknown to readers. Each summary provides a list of "Threatened species" recorded at the site although, in some cases, their occurrence may be occasional and erratic. Where relevant, site summaries also provide lists of "Congregatory waterbirds" or "Congregatory seabirds", species not necessarily threatened but where the numbers using the site exceed 1% of the biogeographic or global population.

For conservation workers, this volume brings together and neatly summarises the key conservation priorities for Asia into the foreseeable future, and presents a regional overview, enabling each to see how individual efforts fit into the jigsaw of regional and global strategies. Inevitably, priorities will change, but contained within its pages is the Holy Grail: conserve and protect these sites, and the hope remains that species extinction can be postponed indefinitely.

Peter Kennerley

Important Bird Areas in Nepal: key sites for conservation. By Hem Sagar Baral and Carol Inskipp. 2005. Bird Conservation Nepal and BirdLife International, Kathmandu and Cambridge. 242 pages; many photographs, maps and tables. ISBN 99933-792-2-0. Paperback. £25. Distributed by NHBS Environment Bookstore www.nhbs.com

The Maoist insurgency in Nepal has largely ended the extraordinary appeal of the country for foreign birdwatchers, whose expeditions in the 1970s and 1980s contributed richly to Nepali ornithology. This publication is a testament both to their work and to that of a young

cohort of skilled Nepali scientists and bird guides, who are now at the cutting edge of study into the country's threatened birds and habitats. Fittingly, the two lead authors, Hem Sagar Baral and Carol Inskipp, are two of the outstanding representatives of these home-grown and foreign generations of ornithologists.

The book's layout is similar to that of other national IBA publications. The small size of Nepal is reflected in the inclusion of just 27 IBAs. This, together with the attractive layout, makes the book particularly easy to get to grips with. The introductory sections on birds, habitats and selection of IBAs bring out well the terrific bird and habitat diversity in relation to geographical area, including the remarkable fact that six biomes are represented in Nepal, only two fewer than India.

These biomes are all well featured in the IBA list and, in terms of area, about 81% of Nepal's IBA network is included in the protected areas that cover an impressive 18% of the country. Of more concern is that 12 IBAs (44%) have no statutory protection and that the average size of these IBAs is just 35,000 ha, compared to 150,000 ha for protected areas. The IBAs include such favourites as Chitwan National Park and the Annapurna Conservation Area. But many other sites are little known to foreign birdwatchers and several have been poorly studied (the same is true for the five potential IBAs that are included). There are therefore great opportunities for visiting birdwatchers and Nepali workers to start filling in these gaps in our knowledge. The current security situation is clearly an issue and potential visitors should liaise closely with their embassies and local ornithologists to assess risks.

It will come as no surprise that Nepal's birds face a range of threats familiar in other Asian countries, such as loss of forests, wetland degradation, conversion or degradation of grasslands, and hunting and fishing. The book also highlights the catastrophic reduction in numbers of *Gyps* vultures as a result of diclofenac poisoning, the spread of exotic invasive plants, and the threat posed by climate change. The authors make a range of recommendations for action, including building on Nepal's remarkable success in allowing communities to manage forests, which has led to phenomenal local increases in forest cover.

This book is the most important publication to date on bird conservation in Nepal. Let us hope that peace will soon return and allow a rapid increase in effective conservation work in this spectacular country.

Mark Mallalieu

Short Reviews

A bibliography of the Anatidae of South Asia By Aasheesh Pittie. *Buceros* 9 (3): 1–90. Bombay Natural History Society, Mumbai, 2004.

This special issue of *Buceros* is devoted entirely to a single paper. The region covered is the Indian subcontinent, but also includes Afghanistan, Tibet and Myanmar (Burma). A total of 46 species is treated, spanning a period of over two and a half centuries, from 1750 to 2004. This is a useful source of reference for all wildfowl enthusiasts in the region.

Ornithological gazetteer of the Indian Subcontinent By Patsy Lozupone, Bruce M. Beehler and S. Dillon Ripley. 2004, Center for Applied Biodiversity Science, Conservation International, Washington DC. 190 pages. ISBN 1-881173-85-2. Paperback. No price. PDF version downloadable from www.biodiversityscience.org

This useful work is a geographic companion to *Ornithology of the Indian Subcontinent 1872–1992: an annotated bibliography* by Burg, Beeher and Ripley (1994). Its sole aim is to provide the means to locate every locality mentioned in the 10-volume *Handbook of the birds of India and Pakistan* (Ali & Ripley 1968–74). As well as achieving almost 100% coverage, this gazetteer also includes ornithological place names found in a range of other publications including later issues of the *Journal of the Bombay Natural History Society* and *A guide to the birds of Nepal* (Inskipp & Inskipp 1985). Almost 4,000 place names are listed. For each entry, the information presented includes (where possible) a description of the geographic location, its coordinates, alternative names, names of fieldworkers who visited the locality and relevant publications, and a source reference.

Birds of Taman Negara: an illustrated guide and checklist By Morten Strange and Dennis Yong. 2006, Draco Publishing, Singapore. 120 pages, 98 colour photographs. ISBN 981-05-4441-3. Paperback. No price.

This slim, pocket-sized book is a companion to *Birds of Frasers Hill* (reviewed in *BirdingASIA* 3) and covers Malaysia's premier national park. After a short introduction to the park, which includes two maps and a section on important birdwatching sites, 98 characteristic species are described and illustrated with colour photographs taken on location. The book concludes with a complete, annotated checklist; information provided includes status, range, habitat, threat status and abundance. This is a useful publication for anyone visiting this superb site.

Nigel Redman

From the field

COMPILED BY CRAIG ROBSON

These are largely unconfirmed records covering the period from April 2005 to March 2006. We urge that if they have not already done so, contributors provide full details to the relevant regional organisations in due course.

BANGLADESH

At least 11 **Spoon-billed Sandpipers** *Calidris pygmeus* were found at three sites along the coast of Bangladesh in January 2006, during an international expedition by British, German, Russian and Bangladeshi Ornithologists, funded by the German based Manfred-Hermsen Foundation. The sightings are all from previously unknown sites and crucial in the understanding of the wintering (*per* CZ)

CAMBODIA

A single dark morph **Booted Eagle** *Hieraaetus pennatus* soaring together with a pale **Oriental Honey-buzzard** *Pernis ptilorhyncus* over the waterfall at Bokor National Park (no date provided), was apparently in exactly the same spot where the first for Cambodia was seen in early March 2005; must be same bird returning? (EV,BD,JH). A pair of **Orange-necked Partridges** *Arborophila davidi* were seen in degraded evergreen forest with bamboo in southern Mondolkiri province (east Cambodia) about 5 km north of the border with Vietnam, on 24 February (DS). This represents the first direct observation of the species by an ornithologist in Cambodia. The birds were seen c.5 km from where one was camera-trapped on 18 February 2002 (DS). Omaliss Keo's fieldwork nearby on **Giant Ibis** *Pseudibis gigantea*, aided by a contribution from OBC's Conservation Fund, continues. Highlights in February ,during feeding observations at waterholes, included two single adult ibises each with a fledged youngster, and a **Black-necked Stork** *Ephippiorhynchus asiaticus* with three fledged young (DS,OK).

CHINA

The OBC NE Tibet tour ran successfully during 3–20 August (JeH,TA,KB,MC,CH,EK,RKl,DS,RT,RW,SW). Some of the more unusual records included an impressive c.1,400 **Red-crested Pochards** *Netta rufina* at Qinghai Hu on 18th, and a single juvenile **Grey-headed Parakeet** *Psittacula finschii* at Kanda Shan on 14th, perhaps the first from Qinghai/Tibet. A juvenile **Red Knot** *Calidris canutus* at Qinghai Hu on 18th constitutes a good record for the area. Cheng Tso-hsin (1987) listed the species for Qinghai Hu as a migrant, but it was not among the 42 species of shorebird recorded at Golmud during 1988–94 by JeH. An adult **Broad-billed Sandpiper** *Limicola falcinellus* at Qinghai Hu on the same date was also of interest. The species was not recorded for Tibet by Vaurie (1972) or Cheng Tso-hsin (1987). Wader counts at Golmud however, yielded 31 bird-days for the species, of which 30 were in autumn between 21 July and 20 September (JeH *pers obs*). A single **Common Buzzard** *Buteo buteo* north of Xining on 19th was probably a local breeder rather than an early migrant. The species is not currently known to breed in Qinghai. Three **Tibetan Siskins** *Carduelis thibetana* at the Nangqian forest reserve on 9th (MC), a species that was not list the species for Qinghai by Cheng Tso-hsin (1987) but is regular on the Sichuan border, and was first recorded in the Nangqian Forest Reserve in 2004 (JeH *pers obs*). Several other good records came from Qinghai Hu in September (PH/Sunbird): a single **Baikal Teal** *Anas formosa* on 21st, possibly the first from Qinghai, single Greater Ringed Plovers *Charadrius hiaticula* on both 20 and 21 September. Elsewhere in Qinghai, a single **Eurasian Golden Oriole** *Oriolus oriolus* was seen at Chaka on 23 September (PH/Sunbird). In Yunnan, nine **Alexandrine Parakeets** *Psittacula eupatria* were found by the Dayingjiang River, Yingjiang, Tengchong on the 10 January (PH), only the second record from China, a single **Jerdon's Baza** *Aviceda jerdoni* was near Ruili, Mangshi on the 18 January (PH), perhaps only the third from Yunnan, seven and 20 **Grey-backed Thrushes** *Turdus hortulorum* were in Laifengshan Park, Tengchong on the 6th and 7 January (PH) respectively, a very rare winter visitor to Yunnan with perhaps only one previous record, two **Wire-tailed Swallows** *Hirundo smithii* were seen over the Zhong Mian Wan Rui He, near Ruili on the 17 January (PH), the second record from Yunnan (close to the site of the first record two years previously), two to six **Wedge-billed Wren Babblers** *Sphenocichla humei* on all four days at Baihualing, Gaoligongshan Nature Reserve, Baoshan during 29 December–1 January (PH), and a single male **Slaty Bunting** *Latoucheornis siemsseni* was near Baihualing on 2 January (PH), perhaps the first record for Yunnan. In the north-east, interesting records were of: 18 **Lesser White-fronted Geese** *Anser erythropus* at Xianghai NNR, Jilin on 5 October (PH/Sunbird), and 22 at Momoge NNR on 8 October (PH/Sunbird), 12, 500 **Baikal Teal** *Anas formosa* and an adult **Black-faced Spoonbill** *Platalea minor* at Momoge NNR, Jilin on 8 October (PH/Sunbird), and 7,880 **Relict Gulls** *Larus relictus* and 864 **Saunders's Gulls** *Larus saundersi* on the inter-tidal mudflats at Jing Qu, Dagang, Tianjin on the 23 December (PH), an exceptional winter count for the latter species this far north in China.

INDIA

A male **Baikal Teal** *Anas formosa* was at the Yamuna River, Delhi (between the Noida Bridge and the temple) on 15 February (JoH); apparently only the fourth ever sighting of the species from the region. A visit to Nagaland between 21–29 December resulted in a number of noteworthy records (MR,PL,MaC). The first recent sightings of **'Naga' Wren Babbler** *Spelaeornis chocolatinus* were made, with a

pair seen well above Khonoma Village (Mount Japvo), and the song (two types) was recorded for the first time. Other noteworthy records included a single **Solitary Snipe** *Gallinago solitaria* c.15 km from Khonoma, two wintering flocks of **Grey-sided Thrushes** *Turdus feae* totalling c.15 birds, and three **Vivid Niltavas** *Niltava vivida*. Two very interesting ducks, a male **Baer's Pochard** *Aythya baeri* and a female **Greater Scaup** *A. marila*, where at Deepor Beel, Guwahati (MR,PL,MaC). Interesting sightings at Kaziranga National Park were a first-year **Imperial Eagle** *Aquila heliaca* and an adult **Cinereous Vulture** *Aegypius monachus*. A visit to South Andaman during 19–24 January (GP) turned up three species that were apparently new for the islands: a single **Pheasant-tailed Jacana** *Hydrophasianus chirurgus*, a **Sand Martin** *Riparia riparia*, and five **Striated Swallows** *Hirundo striolata*, all at Sippighat on 23rd. Also of interest were two **Himalayan Swiftlets** *Collocalia brevirostris*, a first-year **Gull-billed Tern** *Gelochelidon nilotica*, a first-year **Western Marsh Harrier** *Circus aeruginosus*, and a single **Peregrine Falcon** *Falco peregrinus*, all at Sippighat on 23rd, and a calling **Barn Owl** *Tyto alba* at Chiriya Tapu on 19th.

INDONESIA

Java

Three different **Fire-tufted Barbets** *Psilopogon pyrolophus* were seen at two locations within Gunung Gede Pangrango National Park, west Java during 11–15 September (PeL). At Freddy Homestay the bird log contained more records of the species from the national park, and there are also at least two other recent sightings (including July; JE), as well as another from Cibodas Botanical Gardens (*per* PL). It appears that the species was first noted in mossy oak forest on Gunung Gede in September 2003 (NR/Birdquest), but at the time the observer thought that it may be of escaped origin, as there were no previous records from Java.

LAOS

A juvenile **Red-billed Starling** *Sturnus sericeus* was also at Luang Namtha town, N Laos on 20 November (RoT), the first Lao record. A single **House Sparrow** *Passer domesticus* was seen in Savannakhet on 19 September, apparently the first from C Laos, and eight were found at Luang Namtha town on 12 November (RoT), the most northerly records of the species in the country to date. A most interesting record was of a flock of at least 55 (and probably over 70) **Ashy Wood Pigeons** *Columba pulchricollis* in the southern part of Nakai-Nam Theun NPA, C Laos, at c.575 m elevation, on 5 November (WR); the first from C Laos and the most southerly record in South-East Asia to date.

MALAYSIA

Peninsula Malaysia

A **Horsfield's Bronze Cuckoo** *Chrysococcyx basalis* photographed in mangroves off Kg. Likir, Sitiawan, Perak on 24 July (TAL), was new for Peninsular Malaysia. A single **Bridled Tern** *Sterna anaethetus* at Temengor Lake, Hulu Perak on 14 September (LKC) was amazing, being c.100 km from the Straits of Melaka, and c.140 km from the South China Sea! Cyclonic sea conditions had prevailed prior to the observation. **Black-winged Stilt** *Himantopus himantopus* was found breeding in the Bidor area on 13 May (NC,KSS). Three to four pairs were suspected but just one nest was examined with four eggs. Nesting behaviour was also reported on 30 April (CKF). These appear to constitute only the second breeding record from Peninsular Malaysia. Other noteworthy breeding records were four adult **Black-naped Terns** *Sterna sumatrana* seen with three downy chicks at Kampung Salang, Pulau Tioman, Pahang on 12 October, at least 1,000 **Bridled Terns** , 5–10% of which were judged to be juveniles, on three isolated rocky stacks at Pulau Tokong Burung Besar, Pahang (the primary breeding site) on 15 October (both KKF,YC), and a nest of **Chestnut-backed Scimitar Babbler** *Pomatorhinus montanus* with three eggs at Bukit Larut, Taiping, Perak on 18 April (LAT). **Blue-winged Pitta** *Pitta moluccensis* was found breeding in central Peninsular Malaysia for the first time in July, when two adults were seen feeding three young in a nest at Kuala Tahan, Taman Negara (AM,RH). A new host for **Large Hawk Cuckoo** *Hierococcyx sparverioides* was discovered, when a juvenile was seen being fed by a **Chestnut-capped Laughingthrush** *Garrulax mitratus* at Fraser's Hill, Pahang on 10 June (NCB & family).

Sarawak

An active **Little Tern** *Sterna albifrons* colony was discovered at Sejingkat on 31 August (MNSKBBG,AMi); apparently the first evidence of breeding in Sarawak

MYANMAR

The remote Hukaung Valley in N Myanmar was visited during December–January (WD,RoT). **Lesser Fish Eagle** *Ichthyophaga humilis*, **Green Peafowl** *Pavo muticus*, **White-winged Wood Duck** *Cairina scutulata*, and **Great Thick-knee** *Esacus recurvirostris* were said to be "all over the place", with suitable habitat for these patchily distributed and in some cases threatened species being "both extensive and seemingly fully occupied". Six **White-bellied Herons** *Ardea insignis*, c.12 **Long-billed Plovers** *Charadrius placidus*, at least six **Slender-billed Vultures** *Gyps tenuirostris*, an impressive 30+ **White-backed Vultures** *G. bengalensis*, a few **Lesser Adjutants** *Leptoptilos javanicus* and **Black-necked Storks** *Ephippiorhynchus asiaticus*, quite a few **Woolly-necked Storks** *Ciconia episcopus*, four adult **White-tailed Eagles** *Haliaeetus albicilla* and good numbers of **Black-headed Munia** *Lonchura malacca* (a species now thought to be undergoing serious decline in much of South-East Asia) were also reported. The first **Gold-crested Mynas** *Ampeliceps coronatus* from N Myanmar were also recorded, and **Black-chinned Yuhina** *Yuhina nigrimenta* was found down at only 200 m elevation (RoT).

PHILIPPINES

Two **Ashy Minivets** *Pericrocotus divaricatus* at the PICOP Concession, Bislig, on 20 March (TF,SH/Birdquest) appear to be the first from Mindanao.

SRI LANKA

One or two male **Red Collared Doves** *Streptopelia tranquebarica* at Shastrawela, south of Arugam Bay on 16 October (UH,CdS), represented apparently only the third Sri Lankan record, and the first since 1951.

THAILAND

The latest batch of sightings are from the period August–March. Perhaps the most exciting recent sighting was that of a **Red Phalarope** *Phalaropus fulicarius* seen and photographed at Ban Pak Thale, Ban Laem District, Phetchaburi, on 5 January (JW), the first South-East Asian record. Good waterfowl sightings included counts of 336 **Cotton Pygmy-geese** *Nettapus coromandelianus* at Nong Lahan, Chaiyaphum on 27–28 December (MM,PR), and c.10,000 **Lesser Whistling-ducks** *Dendrocygna javanica* at nearby Nong Waeng, Khon Sawan on 16 January (LM), five **Ruddy Shelducks** *Tadorna ferruginea* at Khao Sam Roi Yot National Park from 6 December (CK) to at least 2 January (anonymous posting on BCST web-page), a single **Common Shelduck** *T. tadorna* at Bung Boraphet on 18 December (SM), 12 **Comb Ducks** *Sarkidiornis melanotos* at Huai Talat, Buriram during 21–23 December (SP *per* WS), the largest number recorded in recent years, a single female **Gadwall** *Anas strepera* at Bung Boraphet on 12 January (WA,HS,RK,RK), 16 **Tufted Ducks** *Aythya fuligula* and 80 **Spot-billed Ducks** *Anas poecilorhyncha* at Nong Bong Khai, Chiang Rai on 5 December (KS), and two **Spot-billed Ducks** off the Pak Chong to Khao Yai National Park road, 6 km towards Bonanza Ranch Resort on 17 January (WA,HA,HS,RK). In Nakhon Si Thammarat, S Thailand, five to six **Large Hawk Cuckoos** *Hierococcyx sparverioides* were seen in mangroves and coastal scrub at Laem Talumphuk on 11 January (PA,YM,PR), while another was found at Sa Bua, Tha Sala District, on 10 January (PA,YM,PR). An **Indian Cuckoo** *Cuculus micropterus* was seen on Ko Surin during 3–5 December (CK,SK *et al*.). A **Rufous-backed Kingfisher** *Ceyx rufidorsa* was reported from the Mosingto study plot, Khao Yai National Park on 9 September (WS), apparently the first from the NE. Two **Short-eared Owls** *Asio flammeus* were at Sukhothai Airport on 29 December (NP, *per* RuK). A male **Ruddy-breasted Crake** *Porzana fusca* behind Nai Yang Beach, Phuket on 3 March, was apparently new for the island. The spread of **White-browed Crake** *P. cinerea* in South-East Asia continues apace, with seven seen near Nong Bong Khai, Chiang Rai during 19–23 December (MD,DD) and later, as many as 15 on 2 January (MD,DoD), and there were eight at Khlong Bang Kaew on 7 January (RL,AS,PW), and nine at Nong Samrong, Udon Thani, including one with three chicks on 20 January (PhB). A **Black-tailed Crake** *P. bicolor* was seen on Doi Lang, Doi Pha Hom Pok, Chiang Mai, 21 January (SdW), and a **Slaty-legged Crake** *Rallina eurizonoides* was photographed at Silpakorn University Thap Kae, Nakhon Pathom on 4 January (AR), confirming that the species can at least occasionally winter this far north. Good wintering shorebird totals at Khok Kham (SuD) were 60 **Nordmann's Greenshanks** *Tringa guttifer* on 24 December, the largest ever single count in Thailand, and 150 **Asian Dowitchers** *Limnodromus semipalmatus* on 3 January. Shorebirds at Huai Sawai, Buriram on 27 August included 30 **River Lapwings** *Vanellus duvaucelii*, and a single **Whimbrel** *Numenius phaeopus*, the first from the NE (observer not specified). Two adult **Little Stints** *Calidris minuta* were netted and ringed at Laem Phak Bia on 3–4 September (PR,KS,CT *et al*.). Following this, there was at least one more (unringed) bird at Laem Phak Bia on 27 September (TS) and later, a single reported from Khok Kham on 22 October (AJ). The earliest autumn date yet for **Spoon-billed Sandpiper** *Calidris pygmeus* was set, with the sighting of one on 6 October, at Khok Kham (SuD). Eight **Spoon-billed Sandpipers** were again counted at Pak Thale on 5 January (JW) and 6 January (PK,JW). An estimated 2,000 **Red-necked Stints** *C. ruficollis* were counted between Laem Pak Bia and Pak Thale on 6 November, most of which were concentrated at Pak Thale (JMSN,PR). There were several **Dunlin** *Calidris alpina* records, with a partial breeding plumage bird at Ban Pak Thale on 16 October (KS), three there on 28 October (PS), and two on 5 February (Wings) and 4 March (SM *et al*.). There were at least 500 **Small Pratincoles** *Glareola lactea* on the Mekong River at Chiang Saen on 12 December (WB,RuK). An impressive count of over 100 **Eurasian Thick-knees** *Burhinus oedicnemus* was made at Pong Salot, Phetchaburi on 10 October (PJ,RaK), and two were also seen near the Huai Sing Guard Station in Mukdahan National Park, Mukdahan on 14 October (AR,VPh), apparently the first from NE Thailand. Two **Beach Thick-knees** *Esacus neglectus* on a beach promontory at Chaiya District, Surat Thani on 22 October (BK) was a remarkable find, as there are no other east coast records. Four **Great Thick-knees** *E. recurvirostris* were seen together with 14 **River Lapwings** on the Mekong at Kaeng Ka Bao, Ban Non Bok, Na Tan Subdistrict, Ubon on 13 October (DP,AR,WS,VPh). Additionally another 8 **River Lapwings** were seen at Hat Salung, and ten more at Keng Chang Mop. At Laem Phak Bia, a black-backed third winter gull, first found on 21 October (AJ,RK,SK,KS), was thought to be South-East Asia's first genuine **Lesser Black-backed Gull** *Larus fuscus*. It was still present on 6 November (many observers), and up to at least 1 December (PN). 15 **Black-headed Gulls** *L ridibundus* at Pak Phanang, Nakhon Si Thammarat on 10 January (PA,YM,PR) where good, and there was an adult **Slender-billed Gull** *L. genei* at Bang Pu on 28 November (AP). Another good Palearctic rarity, a first-winter **Black-legged Kittiwake** *Rissa tridactyla* photographed on the Laem Phak Bia sandspit on 30 December (PS), was only the second record for the country and South-East Asia. 100 **Great Crested Terns** *Sterna bergii* at Laem Sui, Chaiya District, Surat Thani on 12–13 January was probably the largest single count ever made in the country (PA,YM,PR), and there were also 16 **Lesser Crested Terns** *S. bengalensis* at there on 10 January (PA,YM,PR). 50 **Lesser Crested Terns** and a single **Brown Noddy** *Anous stolidus* were reported off Ko Surin, Phang-nga on 5 December (CK,SK *et al*.). A **River Tern** *S. aurantia* was seen

on the Mekong at Chanuman, Amnat Charoen on 27 January (DP,WS *et al.*). Approximately 520 **Black Kites** *Milvus migrans* dispersed from a roost around Sri Mahosot on 30 December (MM). There was a remarkable concentration of c.122 roosting harriers, mainly **Eastern Marsh Harriers** *Circus (a.) spilonotus*, near Kusalot on 25 November (CK). Another harrier roost on the south side of Nong Bong Khai, near Wat Jin, held an even more impressive c.199 birds, of which at least 100 were **Pied Harriers** *C. melanoleucos* on the evening of 23 December (MD,DD). A further harrier roost at Sob Ruak, Chiang Saen held 48 harriers, almost all **Pied**, on 30 November. The harrier roost to the south of Nong Bong Khai was said to hold 238 birds on 15–16 January (MD,DoD), most of which were **Pied**. The more noteworthy sightings of *Aquila* eagles were single **Greater Spotted Eagles** *A. clanga* at Nong Bong Kai on 17 December (MD,DD) and Hat Yai on 25 February (SK/TRG), and single juvenile **Imperial Eagles** *A. heliaca* at Kusalot, Sena District, Ayutthaya on 11 December (ThS), and between Nakhon Pathom and Suphanburi on 10 November (MD,DD). A **Short-toed Snake Eagle** *Circaetus gallicus* was photographed at Lopburi on 14 February (CK/TRG), while a dark morph **Booted Eagle** *Hieraaetus pennatus* behind Mai Khao Beach, Phuket on 1 March (WA,HS), was apparently the first fom the island. A **Darter** *Anhinga melanogaster* near Phuket Municipal Rubbish Tip on 25–30 December (SdW) accords with the pattern of increased sightings of many medium to large waterbirds in the peninsula. Another was seen at Khlong Bang Kaew, Samut Prakan on 7 January (VP). A **Great Cormorant** *Phalacrocorax carbo* was seen at Nong Bong Khai on 13 December (KS). Two apparently new sites for **Chinese Egrets** *Egretta eulophotes* on the east coast of the peninsula are Laem Talumphuk, Nakhon Si Thammarat, which held four, probably six different individuals on 11 January (PA,YM,PR), and Laem Sui, a sand spit in Chaiya District, at the north-west corner of Ao Bandon, Surat Thani, which held three, probably four, on 13 January (PA,YM,PR). A **Greater Flamingo** *Phoenicopterus ruber*, (presumed escaped), was seen at Tanot Noi, Cha-am, Phetchaburi on 12 January (AG,NS). 46 **Spot-billed Pelicans** *Pelecanus philippensis* flew south over Pak Plee, Nakhon Nayok on 13 November (PN), while a **Black-faced Spoonbill** *Platalea minor* flew past the Samut Sakhon Mangrove Research Centre on 15 January (DMCR/YT). A juvenile **Malayan Night Heron** *Gorsachius melanolophus* turned up at 1,600 m on Doi Suthep on 16 October (DK), a presumed migrant at this uncharacteristic location and elevation. A count of 48 **Glossy Ibises** *Plegadis falcinellus* roosting at Ko Wat, Bung Boraphet, Nakhon Sawan on 10 November (PKh,SS), was the largest yet. A **Milky Stork** *Mycteria cinerea* with 36 **Painted Storks** *M. leucocephala* was reported from Wat Kusalot, Ayutthaya on 22 November (SS). The long-staying **Milky Stork** in Buriram Province was still present at Huai Talat on 24 December (KS). 100 **Painted Storks** were reported from Bang Chai [*sic*], Ayutthaya on 7 January (WS *per* WC). Several sightings of **Black Storks** *Ciconia nigra* included a juvenile at Khao Yoi, Phetchaburi on 12 November (STh), the first record from C Thailand, a single bird at Thaton, Chiang Mai on 23 December (KK,MT,ST) and, remarkably, four (*per* RuK) with 14 **Glossy Ibises** (RuK) on a small pond to the south of Nong Bong Khai on 15 January (*per* RuK), the latter the first from NW Thailand. A group of **Red Collared Doves** near Ban Riang (Phuket) on 4 October (SdW) included 5 males. This species is very scarce and local in the peninsula. A juvenile **Greater Adjutant** at Huai Sawai Reservoir, Buriram on 20 August (BK) was said by non-hunting area officials to have been present since 6 August. This very welcome arrival perhaps stems from the improved protection of the Cambodian breeding populations. The bird was still present on 27 August, along with a single (long-staying) **Milky Stork** (KS). There were some welcome sightings of **Silver Oriole** *Oriolus mellianus*, with a male on Doi Luang, Doi Chiang Dao, Chiang Mai on 1 January (ST), both male and female, at Thinuey Guard Station, Thung Yai on 15 January (ST), and a female at Phu Soi Dao, Uttaradit on 30 January (SdW). Two **Lesser Racket-tailed Drongos** *Dicrurus remifer* were seen in a bird wave at only c.433 m elevation, at Dong Na Tham, Khong Chiam, on 12 October (WS).There was an unusual midwinter record of a male **Siberian Thrush** *Zoothera sibirica* on Doi Luang, Doi Chiang Dao on 1 January (ST), and a first-winter male of this specie found dead at Khlong Bang Kaew, Samut Prakan on 6 November (NB,PK,VP,TT), was probably the first from C Thailand. A **Grey-sided Thrush** *Turdus feae* was reported from the Phrom Leng Guard Station, Nam Nao, NE Thailand on 18–19 January (ST). Three **Brown-breasted Flycatcher** *Muscicapa muttui* (probably two adults and one juvenile), a poorly-known species in Thailand, were seen on Doi Inthanon on 29–30 August (DP,AR,WS *et al.*). A male **Slaty-backed Flycatcher** *Ficedula hodgsonii* just outside Khao Yai National Park on 28 January (WA,HS) was of interest, as were a single **Bluethroat** *Luscinia svecica* near Pathiu, just north of Chumphon on 12 February (WA,HS), the second recent record at the southern extremity of its Thai range. A male **Black Redstart** *Phoenicurus ochruros* was seen and photographed at Tilosu Waterfall, Umphang, Tak on 5–7 December (SiP), and was probably only the third Thai record. A male **Blue-fronted Robin** *Cinclidium frontale* was reported from Doi Chiang Dao on 2 January (ST). An impressive 300 **Purple-backed Starlings** *Sturnus sturninus* at Chumphon Sports Stadium on 11 October (CN), were joined by a **Chestnut-cheeked Starling** *S. philippensis* on 13 October (CN), and on 14 January (CN) and 9 February (WA,HS,CN) there were three birds. at Chumphon during 18 November to 4 January. The peak count of **Chestnut-tailed Starlings** *S. malabaricus* here, included ten nominate *malabaricus* on 4 January (CN). Remarkably, a **Common Starling** *S. vulgaris* appeared at the Sports Stadium on 1 January (CN), the first from S Thailand, and there were several reports of **Rosy Starling** *S. roseus* from the same location, with a juvenile on 11 October and two juveniles on 13 October (CN), three birds on 16 October (CN,SmS), and an adult on 9 February (WA,HS,CN). Another **Rosy Starling** was seen at Ban Riang, Phuket Island during 26–28 September (SdW). Four **Chestnut-tailed Starlings**

were present among a group of about 40 starlings, which also included **White-shouldered Starling**, at Laguna Phuket on 29 December (SdW), and both appear to be new for the island. A **Brahminy Starling** *S. pagodarum* was seen near Kamala Beach, Phuket on 30 December and was still present on 1 January (AC,SdW). Away from the vagrant sturnids, a single flock of 130 **Hill Mynas** *Gracula religiosa* at Khao Yai on 11 October (PhB) was a great record. Another encouraging count was of 165 **Wire-tailed Swallows** *Hirundo smithii* along the Mekong River between Hat Salung, Ubon Ratchathani and Amnat Charoen during 13–15 October (DP,AR,WS,VPh), most (100 or so) being near Kaeng Chang Mop, Khemmerat, Ubon. 12 **Dusky Crag Martins** *H. concolor* were found at Pha Khob, Phu Luang Wildlife Sanctuary, Loei on 18 December (CK,DP). An estimated 1,000 **Sand Martins** *Riparia riparia* flying westwards, to a presumed roost, at Rangsit, Pathumthani on 28 December (MM,PR), is the largest ever count from the Bangkok area. A report of a **Straw-headed Bulbul** *Pycnonotus zeylanicus* was received from Klong Noi, 20 km east Nakon Si Thammarat, on the road to Pak Phanang, on the 16–17 February (MW); the species is thought long extinct in the country, through habitat loss coupled with over-trapping for the cage-bird trade. A **Red-whiskered Bulbul** *P. jocosus* near the summit of Doi Pha Hom Pok, 2285 m, on 24 January (SdW) was c.400 m higher than its previously documented upper range limit in the region. Several hundred **White-headed Bulbuls** *P. thompsoni* were feeding on nectar in flowering trees on Doi Ang Khang during 21–23 December (RO,JT). The sighting of up to five **Limestone Wren Babblers** *Napothera crispifrons* (race *calcicola*) at Tham Phaya Nak, Khao Hin Phun, Nam Nao, Phetchabun on 18–19 January (ST) constitutes a considerable range extension for this species and subspecies. Probably the most exciting passerine record during the period under review, was of three **Mekong Wagtails** *Motacilla samveasnae* at Chanuman, Amnatcharoen Province on 27 January (DP,WS *et al.*) which indicates that the species is more widespread as a breeding bird along the Mekong than was previously thought. Earlier, a single bird had been seen at Keng Chang Mop, Khemmaraj, Ubon Ratchathani on 14 October (WS). A single first winter **Citrine Wagtail** *M. citreola* at Lam Ta Prong Lake, just north of Pak Chong on 27 January (WA,HS,RK) was good, as was a male '**Yellow-browed' Wagtail** *M. (f.) taivana* at Suan Thao Suranaree, Lum Takhong Reservoir, Nakhon Ratchasima, on 27 December (MM,PR), apparently the first recorded from the NE. A flock of c.150 **Red-throated Pipits** *Anthus cervinus* at Laem Sui, Chaiya District, Surat Thani on 12 February (PA,YM,PR), were seemingly roosting on coastal flats. Good breeding records were: a group of four **White-crowned Hornbills** *Aceros comatus* delivering a lizard to what was presumaed to be a fledged, but still partly dependent juvenile on 15 September (PK), two **Collared Scops Owls** *Otus bakkamoena* fledged from a nest in a palm on a suburban housing estate at Bang Phli, Samut Prakan on 3 February (ST), **White-browed Crake** with four chicks near Bang Pu on 14 January (JP/WWF), a nest of **Blue-winged Pitta** *Pitta moluccensis* with three eggs, at Mahidol University, Sai Yok, Kanchanaburi on 11 August (PR,MU), a **Long-tailed Minivet** *Pericrocotus ethologus* feeding a fledged youngster at Thinuey, Thung Yai WS on 15 January (ST), adult **Spangled** *Dicrurus hottentottus* and **Greater Racket-tailed Drongos** *D. paradiseus* feeding fledged young on 29 and 30 January respectively, at Kaeng Krachan (ST), and **Chestnut-bellied Nuthatch** *Sitta castanea* feeding two partly fledged young at Sap Sadao, Thap Lan, Nakhon Ratchasima, on 25 June (ST).

VIETNAM

At least 28 **Amur Falcons** *Falco amurensis* migrating through Xuan Thuy on 29 October (SD) must have been exciting, and other interesting migrants recorded by the same observer here included a single **Himalayan (Common) Buzzard** *Buteo (b.) burmanicus* on 29 October, and single **Oriental Scops Owl** *Otus sunia* and **Grey Nightjar** *Caprimulgus (i.) jotaka* (the latter photographed) on 30 October. Also of interest in E Tonkin, was a single **Pied Avocet** at Van Long Marsh on 7 January (PB). A male **House Sparrow** *Passer domesticus* was seen at the ferry pier of Binh Phuoc, at the northernmost tip of Can Gio District, Ho Chi Minh City, on 23 November (SD), proving that the species is spreading throughout Cochinchina after its arrival in the west of this region recently, while two groups totalling at least 30 **Black-headed Munias** *Lonchura malacca* were seen on a cultivated island in the Red River channel, Hanoi, on 3 December, and up to 15 were seen on Ha Nam Island, Quang Ninh Province, Red River Delta, far from any urban centre from which the birds could have been released, during 7 January–4 March (SD). These appear to be the first records of the species from E Tonkin. Also of interest at Ha Nam Island (SD), were a single **Pied Avocet** *Recurvirostra avosetta* on 7 January, up to 89 **Great Cormorants** *Phalacrocorax carbo* during 7 January–4 March, a single **Sand Martin** *Riparia riparia* on 4 March, the first confirmed for the region, and five or six **Asian House Martins** *Delichon dasypus* on 4 March. A quite remarkable range-extension record was received with news of a male **Eared Pitta** *Pitta phayrei* at Deo Nui San, south of Di Linh, Lam Dong Province, S Annam on 3 March (HH). Also of interest here was a single **Orange-flanked Bush Robin** *Tarsiger cyanurus* on the same date (HH). A single **Plain-tailed Warbler** *Seicercus soror* at Cat Tien NP (140 m elevation) on 29 January (CR *et al.*/Birdquest), appears to be the first from Cochinchina, as well as a new low altitude record for South-East Asia. A male **'Vietnamese' (Red) Crossbill** *Loxia (curvirostra) meridionalis* was nest-building on Mount Lang Bian, Lam Dong, S Annam on 24 January (CR *et al.*/ Birdquest). At Sa Pa, W Tonkin on 12 March (SD), a single **Chinese Pond Heron** *Ardeola bacchus* and a **Hwamei** *Garrulax canorus* were seen at 1,550–1,600 m elevation.

Contributors: H. Allen (HA), W. Allen (WA), T Allwood (TA), P. Archarit

(PA), P. Bawden (PhB), P. Benstead (PB), Birdquest, K Blomerley (KB), W. Boonkhwamdee (WB), N. Bupachat (NB), M. Camici (MaC), M Catterall (MC), W. Chanittawong (WC), Chan Kin Fatt (CKF), N. Cheng (NC), A. Colthorpe (AC), S. Daengphayon (SuD), M. Davies (MD), D. Davies (DD), B. Demeulemeester (BD), Department of Marine and Coastal Resources (DMCR), C. de Silva (CdS), S. de Win (SdW), S. Doppagne (SD), D. Downard (DoD), W. Duckworth (WD), J. Eaton (JE), T. Fisher (TF), J. Hammar (JoH), S. Harrap (SH), C. Hendley (CH), H. Hendriks (HH), U. Hettige (UH), P. Holt (PH), J. Hornbuckle (JH), J. Hornskov JeH), R. Hutchinson (RH), P. Janhom (PJ), A. Jearwattanakanok (AJ), R. Kaichid (RaK), Rungsrit Kanjanavanit (RuK), K. Kanikul (KK), C. Kasorndorkbua (CK), P. Katsura (PK), B. Kekule (BK), R. Kengsungnoen (RK), O. Keo (OK), Khoo Swee Seng (KSS), S. Klabdee (SK), E Klim (EK), R Klim (RKl), Koo Kui Fong (KKF), D. Kuehn (DK), Lim Aun Tiah (LAT), Lim Kim Chye (LKC), P. Lobo (PL), P. Logtmeijer (PeL), MNS Kuching Branch Bird Group (MNSKBBG), Mahidol University Ornithology Class (MU), A. Mears (AM), Y. Meekaew (YM), A. Mizutani (AMi), S. Mukachonpan (SM), L. Mulford (LM), J. Murray (JM), Neoh Chin Boon (NCB), S. Nimnuan (SN), P. Nontapa (PN), C. Nualsri (CN), R. Orenstein (RO), J. Parr (JP), G. Pettersson (GP), V. Phumphuang (VPh), A. Pierce (AP), V. Pongpanit (VP), S. Pothisaka (SP), S. Poungmali (SiP), D. Prathumthong (DP), N. Redman (NR), M. Ritschard (MR), W. Robichaud (WR), C. Robson (CR), A. Roisri (AR), P. Round (PR), T. Saengdokmai (ThS), P. Saengkaew (PS), W. Sanguansombat (WS), H. Serafinowicz (HS), D. Showler (DS), S. Sermsai (SS), T. Supindham (TS), Sunbird, Kaset Sutasha (KS), S. Suthibut (SmS), Tan Ah Lai (TAL), T.i Tanaree (TT), Sopitcha Tantitadapitak (ST), Y. Tatuwan (YT), C. Termtanan (CT), Thai Raptor Group (TRG), S. Thanombuddha (STh), R. Tizard (RoT), J. Toettrup (JT), R Tolk (RT), E. Vercruysse (EV), M. Waters (MW), Wings, R Winspear (RW), P. Wisia (PW), WorldWide Fund for Nature-Thailand (WWF), S Wotton (SW), J. Wright (JW), Yang Chong (YC), C. Zockler (CZ). [PKh,NP,MT observers names not listed; BCST Newsletters.]