

- Du, B. (2009) Cuckold or cooperate? A reproductive game of Tibetan Ground Tits *Pseudopodoces humilis*. Post-doctoral dissertation. Wuhan University.
- Kaboli, M., Aliabadian, M., Roselaar, K. S. & Prodon, R. (2007) Ecomorphology of the wheatears (Genus *Oenanthe*). *Ibis* 149: 792–805.
- Lack, D. (1968) *Ecological adaptations for breeding in birds*. London: Methuen.
- Li, S. & Lu, X. (2012a) Breeding biology of Rock Sparrows *Petronia petronia* in the Tibetan plateau, with special reference to life history variation across altitudes. *Acta Ornithol.* 47: 19–25.
- Li, S. & Lu, X. (2012b) Reproductive ecology of Isabelline Wheatears at the extreme of their altitude distribution. *Ardeola* 59: 301–307.
- Lu, X., Ke, D. H., Zeng, X. H. & Yu, T. L. (2009) Reproductive ecology of two sympatric Tibetan snowfinch species at the edge of their altitudinal range: response to more stressful environments. *J. Arid Environ.* 73: 1103–1108.
- Martin, T. E. & Li, P. (1992) Life history traits of open- versus cavity-nesting birds. *Ecology* 73: 579–592.
- Martin, T. E. (1995) Avian life history evolution in relation to nest sites, nest predation and food. *Ecol. Monogr.* 65:101–127.
- Panov, E. N. (2005) *Wheatears of the Palaearctic: ecology, behaviour and evolution of the genus Oenanthe*. Moscow: Pensoft.
- Roff, D. A. (2002) *Life history evolution*. Sunderland MA: Sinauer Associates.
- Wang, Z. W. & Zhang, Z.B. (1996) *Theory and practice of rodent pest management*. Beijing: Science Press.
- Wei, W. H., Zhou, W. Y., Fan, N. C. & Biggins, D. E. (1994) Habitat selection, feeding and caring for the young of alpine weasel. *Acta Theriol. Sin.* 14 (3): 184–188.
- Zeng, X. H. & Lu, X. (2009) Interspecific dominance and asymmetric competition with respect to nesting habitats between two snowfinch species in a high-altitude extreme environment. *Ecol. Res.* 24: 607–616.
- Zheng, G. M. (2002) *A checklist on the classification and distribution of the birds of the world*. Second edition. Beijing: Science Press.

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Similarity of the calls of juvenile Pied Cuckoo *Clamator jacobinus* and its Sri Lankan host species, Yellow-billed Babbler *Turdoides affinis*

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On 7 May 2005 GSW was at Dunuvila Cottage, near Wasgomuwa National Park, Sri Lanka (7.583°N 80.917°E) with Chandrika Maelge and Sunela Jayawardene. At about 10h45 he heard what sounded like the typical whinnying chatter of a Yellow-billed Babbler *Turdoides affinis*. GSW did not investigate further immediately, as the Yellow-billed Babbler is widespread in Sri Lanka, but as the bird continued to call, he noticed that the pitch of the vocalisation changed slightly and decided that it merited further attention, only to find not a Yellow-billed Babbler but a Pied Cuckoo *Clamator jacobinus*. The bird was identified as a juvenile due to its duller colours—more brown than black—although the overall plumage pattern was similar to that of an adult. SJ and CM, both wildlife enthusiasts familiar with the calls of Yellow-billed Babbler, agreed that the cuckoo's call was almost indistinguishable from that of the babbler. At this time it appeared to be alone, with no sign of Yellow-billed Babblers in the vicinity.

A few hours later, in the same area, GSW observed what he assumed to be the same Pied Cuckoo moving through the trees with a flock of Yellow-billed Babblers, about 4.5 m above the ground. Babbler-like calls were heard again, but it was not clear whether any of them came from the cuckoo. No direct begging by the cuckoo was observed during this period. Owing to the lack of sound recordings and experimentation, this cannot be presented as a definite example of vocal mimicry (or even similarity) between an avian host and its parasite. However, the vocalisations of fledgling Pied Cuckoos are little known, even by experienced birdwatchers and ornithologists, and hence details of this encounter have been documented.

The Pied Cuckoo is widely distributed, from sub-Saharan Africa and Iran to Sri Lanka and Myanmar. Yellow-billed Babbler is the only host known in Sri Lanka, but elsewhere in its range a variety of other hosts are parasitised including other *Turdoides* babblers, bulbuls and shrikes (Erritzøe *et al.* 2012). There is a precedent for vocal similarity between Pied Cuckoo and its hosts—Liversidge (1969) claimed that the begging calls of Pied Cuckoos parasitising Common Fiscal *Lanius collaris* are 'similar to that of host chicks'. Similarity has also been noted between the begging calls of nestling

and fledgling Pied Cuckoos and Southern Pied Babbler *T. bicolor* hosts in South Africa (A. Ridley pers. comm.). It should be noted that both these examples differ from the Sri Lankan observation in that the vocal similarity in this account was between a young cuckoo and adults of the host species rather than between young birds of both species.

It is possible that Pied Cuckoo nestlings imitate the different begging calls of their hosts in different parts of their range the better to solicit food from the host parents or to avoid being rejected by them. Such vocal mimicry has already been found in Horsfield's Bronze Cuckoo *Chrysococcyx basalis* of Australia. These birds lay their eggs in the nests of more than one other species. The nestling Horsfield's Bronze Cuckoo alters its begging call to match that of the host chicks (Langmore *et al.* 2008). Adult males of most species of the brood-parasitic indigobirds and whydahs *Vidua* spp. of Africa incorporate elements of their hosts' (both adult and nestling) vocalisations into their own repertoires (Payne *et al.* 1998, 2000), and in some species at least the begging call of *Vidua* nestlings resembles that of their host (Payne & Payne 2002). However, detailed experiments and sound recordings are required to demonstrate if Pied Cuckoos do indeed copy the vocalisations of host species (both young and/or adults), and to interpret the significance of this behaviour.

Birdwatchers and ornithologists are urged to pay attention to the vocalisations of both adult and immature avian brood parasites and their hosts, and to make sound recordings and field notes when possible. GAJ (address below) would be interested to hear of any further examples of such similarity.

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References

- Erritzøe, J., Mann, C. F., Brammer, F. P. & Fuller, R. A. (2012) *Cuckoos of the world*. London: Christopher Helm.

- Langmore, N. E., Maurer, G., Adcock, G. J. & Kilner, R. M. (2008) Socially acquired host-specific mimicry and the evolution of host races in Horsfield's Bronze-Cuckoo *Chalcites basalis*. *Evolution* 62:1689–1699.
- Liversidge, R. (1969) The biology of the Jacobin Cuckoo *Clamator jacobinus*. *Ostrich Suppl.* 8: 117–137.
- Payne, R. B., Payne, L. L. & Woods, J. L. (1998) Song learning in brood-parasitic indigobirds *Vidua chalybeata*: song mimicry of the host species. *Anim. Behav.* 55: 1537–1553.
- Payne, R. B., Payne, L. L., Woods, J. L. & Sorenson, M. D. (2000) Imprinting and the origin of parasite–host species associations in brood-parasitic indigobirds *Vidua chalybeata*. *Anim. Behav.* 59: 69–81.
- Payne, R. B. & Payne, L. L. (2002) Begging for parental care from another species: specialization and generalization in brood-parasitic finches. Pp 429–450 in J. Wright & M. L. Leonard, eds. *The evolution of begging: competition, cooperation and communication*. Dordrecht, Netherlands: Kluwer Academic Publishers.

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The occurrence of the Willow Warbler *Phylloscopus trochilus* in the Indian subcontinent: notes from museum specimen records

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Introduction

The Willow Warbler *Phylloscopus trochilus* is a strongly migratory species with an extensive breeding range across northern and temperate Europe and Asia, from the British Isles to eastern Siberia. The entire population is believed to winter in Africa (Mayr & Cottrell 1986), mostly in sub-Saharan Africa, although small numbers winter in south-east Somalia, west-central Ethiopia, Egypt, Tunisia and Algeria (Clement 2006). Birds originating in north-east Siberia undertake one of the longest migrations of any Palearctic breeding passerine to reach the East African wintering grounds. It has long been suspected that it occurred in the Indian subcontinent, although until now there have been no confirmed records. Here specimens of Willow Warbler collected from Nepal and Pakistan and held in collections in the USA, and a specimen from Tajikistan housed in the Moscow State University museum, Russia, are documented.

The authenticity and identification of the very few historical claims of Willow Warbler from the Indian subcontinent are open to question. Jerdon (1840) obtained a specimen from the edge of the Western Ghats, in south India, which he believed to be this species. However, Whistler & Kinnear (1934), who extensively covered peninsular India, did not mention this record. It has also been reported from Gujarat (Ali 1954), but the specimen was found to be a misidentified Greenish Warbler *P. trochiloides* and the species was removed from the Indian bird list (Abdulali & Unnithan 1986). Another was reported from Kohima, Nagaland, north-east India, in January 1952 and held in the Meinertzhagen collection (Ali & Ripley 1983), this presumably being the bird referred to by Mayr & Cottrell (1986) on passage from the Naga Hills. However, the Meinertzhagen collection is known to hold specimens that have had the collection details (location, date, etc.) deliberately and fraudulently changed, leaving the origin of many of these specimens open to question (Rasmussen & Anderton 2005). This led Grimmett *et al.* (1998) to express doubt about the Meinertzhagen specimen from Nagaland, while Rasmussen & Anderton (2005) considered it to be fraudulent and the occurrence of the species in the region to be hypothetical. More recently, a sighting of a Willow Warbler has been reported from the Periyar Tiger Reserve, Kerala, south India (Zacharias *et al.* 1997).

Museum records

As part of a wider study into the distribution of *Phylloscopus* warblers in the Indian subcontinent based on museum voucher specimens, several previously unreported specimens of Willow Warbler were discovered. At the Academy of Natural Sciences, Philadelphia, Pennsylvania, USA, an undated specimen labelled *P. trochilus* (ANSP 52636) and as taken in 'Nepal', was examined and

the identification confirmed. Another specimen, collected from Bampur, Baluchistan, Pakistan, on 13 April 1901, was found in the American Museum of Natural History, New York, USA (AMNH 449058), where Thomas Trombone, Collection Data Manager, confirmed the identification. Two skeletons at the Smithsonian Institution (USNM 561494 and USNM 561495) were labelled as *P. trochilus*, but both were found to be *P. trochiloides*.

Slightly outside the boundaries of the Indian subcontinent, some additional interesting specimens of this species have been located, although it is suspected that these were passage rather than overwintering birds. Two specimens from Durud, Iran, held at the Academy of Natural Sciences (ANSP 174238 collected on 13 April 1941 and ANSP 174537 collected on 29 August 1941) were examined. In addition, the Field Museum of Natural History, Chicago, houses a specimen of the Willow Warbler (FMNH 106900) from Sama, Mazandaran district, Iran, collected on 17 August 1969, and the Zoological Museum of Moscow State University has a female specimen collected on 19 May 2012 by Arkhipov and Koblik, from the south slope of the Gissar range in Tajikistan (E. Koblik pers. comm.).

Discussion

The Willow Warbler is likely to occur in the Indian subcontinent, given its close proximity to the migratory route of the species as evidenced by the specimens from Tajikistan and Iran, and Vaurie's (1959) statement that the species occurs in 'Persian Baluchistan' supports this view. The collection dates suggest that a previously undocumented passage occurs through the Indian subcontinent, and further studies may help to elucidate the migration route.

These discoveries highlight the importance of the careful examination of systematic bird collections for historically significant location records. In this case, a species previously unrecorded from the entire subcontinent has been proven to occur, albeit in small numbers, based on museum records providing vouchered records of its existence in the region. This study also highlights how valuable information may be gained from voucher specimens of even seemingly common birds in museum collections.

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