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## Further parallels between the Asian Bay Owl *Phodilus badius* and *Tyto* species

by D. R. Wells

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Stresemann & Stresemann (1966) have investigated moult pattern, Ford (1967) a range of mainly osteological evidence, Feduccia & Ferree (1978) the form of the bony stapes and de Boer (1984) karyotypes in the Asian Bay Owl *Phodilus badius* and all agree it is a tytonid, close to the 'monkey-faced' owls *Tyto*. Much of the structural evidence that has been produced in support of a formerly widely held, alternative view, that it is a strigid, is compromised by variation to be found between and even within accepted strigid genera, and is better interpreted as convergence. Thus the broad, steep-faced (versus narrow,



tapered) skull of *P. badius* and most strigids relates to the mechanical support of proportionately large eyes and is likely to be a derived, adaptive character. Ford further points out that it is matched in one exceptional *Tyto* species, the Sooty Owl *T. tenebricosa* of Australasia. This bird, too, has eyes proportionately far larger than those of true barn and grass owls (Ford 1967; see also photographs in Fleay 1968). Like *P. badius*, *T. tenebricosa* lives mostly in the interior of evergreen or semi-evergreen forest where, as among nocturnal strigids, large eyes must help with the exceptionally dark night encountered beneath a closed, multi-layered tree canopy.

Perhaps not surprisingly, parallel behavioural evidence for a relationship has been more elusive; indeed, in Thailand, Marshall (1966) found that *P. badius* used apparently unique modes of perch-and-wait hunting and produced vocalisations without obvious homology in either of the recognised owl families. These characteristics are now well known also in Peninsular Malaysia, where the chief (and most spectacular) call of *P. badius* is a loud, almost musical wail of 3-4 notes, stressed on the second note and rounded off by up to 4 short, sharply upswept, tremulous phrases introduced at a successively lower pitch. Thorough reviews of the repertoire of the Common Barn Owl *Tyto alba*, both in Malaysia (G. M. Lenton) and elsewhere (Bunn *et al.* 1982), confirm Marshall's claim of complete lack of similarity to *P. badius* in all of its elements. On the other hand, no case can yet be made for assuming that *T. alba*'s vocalisations typify all members of the genus *Tyto*, since this familiar bird has forest-living relatives that rank among the world's least known owls – virtually in the category of the very rare *Phodilus prigogenei*, the central African supposed counterpart of *P. badius*.

*Tyto tenebricosa* is exceptional as the one forest-living *Tyto* about which at least something is known – and it is known to be more versatile vocally than *T. alba* (Fleay 1968). A recent tape-recording from Queensland includes a 'skree' call of obvious Barn Owl affinity, together with a prolonged, down-sliding, whistling wail that is evocative of Bay Owl voice quality. The wail appears to be *T. tenebricosa*'s main loud vocalisation and it may have an advertising function (Fleay 1968, Slater 1971), since, unlike *T. alba*, Sooty Owls are stated to be strongly territorial. The more complex but likewise totally descending song of *P. badius* tends to be repeated in long bouts from regular points in a particular patch of habitat, and so may have a similar territorial function. That, of course, does not exclude the vocal characteristics developed for such a function from showing evolutionary convergence in these 2 species, adapted to some acoustic property of evergreen vegetation structure that their ranges, perhaps, have in common. Recordings of other forest *Tyto* species may eventually help to clarify this point.

Perhaps less easily compromised support for the systematic link between *Phodilus* and *Tyto* is provided by a unique observation of defence/threat behaviour, described here from my field notes on an adult *P. badius* freshly released after having been ringed at Pasoh research forest, 2° 59' N, 102° 18' E, Negeri Sembilan state, Malaysia. This bird, mist-netted after dark in the forest understorey where it had probably been hunting, was afterwards set down on a low stump a few feet from observers and within the lighted circle of a lamp, so that it may not have realised immediately that it was free to leave. Instead of



escaping, it stood up on stretched legs, turned towards the observers and with forward-inclined body arched its wings out and down to below the level of its toes. Swaying from side to side in this stance it suddenly deeply bowed its head and shook it while facing more or less backwards between its own feet. After a few seconds with the uniform-coloured neck and nape thus presented, the head was flung up and forward again to expose a pale facial disc with enormous, widely staring black eyes and open bill. This sequence was repeated at least once before observers moved and the bird flew off unharmed.

Arching of the wings, which enhances the impression of size, is not confined to *Phodilus*; in various postures, often accompanied by plumage ruffling, it is a well known, widespread confrontation behaviour of owls. Associated rocking of the body from side to side, sometimes actually from one foot to the other, has also been described in several other genera, including *Tyto* (Fleay 1968, Bunn *et al.* 1982), *Bubo* (Mikkola 1983) and *Otus* (Thomas 1977). The bizarre head bowing and shaking component seems to be more restricted and has otherwise been reported only in *Tyto* – in the Common Barn Owl by Coward (1928) and by Bunn *et al.*, and in the Sooty Owl by Fleay (1968), who states that ‘like the Barn Owl [this bird] occasionally expresses emotion by bending its head to a position almost between its own feet, and slowly shaking it from side to side’.

The mammal-like facial outline of tytonids, suddenly presented, is likely to be the factor that makes this peculiar behaviour disconcerting, and shape and behaviour could well have co-evolved. With broad, protrusible, dorso-lateral ‘earflap’ extensions of the ruff margin (Marshall 1966), *P. badius* may actually have achieved a more convincing civet or cat face simulation than *Tyto*, even though its ruff is less complete ventrally. At the same time, scarcity of records of head-bowing behaviour even in the well studied *T. alba* may, perhaps, be because this ruse is not ordinarily used against an intruder of large size. It is distinct from the hissing, forward-facing, snake-like head-weaving that *T. alba* always exhibits when cornered, for example in a nest chamber. Bunn *et al.*, nevertheless, do describe instances of the hissing/head weaving display being punctuated by head-bowing and D. K. Read points out that both behaviours could be elements of a bluff-and-escape syndrome that Common Barn Owls seem to substitute for the more aggressive attack response of many equivalent-sized strigids under threat. Asian Bay Owls are tree cavity nesters and it would be interesting to find out if they, too, also headweave and hiss rather than attack when cornered.

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## Two additions to the avifauna of China, *Anas angustirostris* and *Hippolais pallida*

by W. G. Harvey

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On 18 June 1985 I identified 7 or 8 Marbled Teal *Anas angustirostris* at an artificial, brackish lagoon near the power station in the Karamay oilfield (c. 46°N, 85°E) in the Xinxiang Autonomous Region of China, within c. 300 km of the Kazakhstan border of the USSR. It is a desert region with sparse tamarisk scrub, but the environment has been dramatically transformed locally as a result of the need to store water for the town's population and for oil extraction processes. Spillage from the water pipeline is responsible for a 1 km<sup>2</sup> shallow lagoon, extensively fringed with *Phragmites* sp. reedswamp and *Salicornia* mudflats.

Excellent views were obtained of 3 of the teal, apparently a male with 2 females, the male head-bobbing and making occasional short rushes at the females, suggesting possible breeding. This record is apparently the first for China, although the species occurs in the steppe lakes of southern USSR.

Later I heard a familiar song coming from a small patch of tamarisk and located an Olivaceous Warbler *Hippolais pallida*. The species breeds in neighbouring parts of the USSR but this is apparently the first record for China. I located only one bird.

Detailed descriptions of both species are lodged with the Oriental Bird Club, Sandy, England and a more detailed account of my visit to Karamay is given in their publication, *Forktail* (Harvey, W. G. 1986 in press).

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