

and disappear into some dense secondary growth at a height of about 2 m. There appeared to be a bulge near the vent on the left side of the flying bird. I looked back to the perch for the chick, but it was not to be seen. All branches were inspected thoroughly, and an exhaustive search of the ground below the tree was made, but no sign could be found of the chick. It was then that I realised that the bulge I had seen was almost certainly the chick being carried away from 'danger' by the adult. Neither has been seen since.

Two and a half months earlier, what was presumably the same adult was misguidedly removed by the owners of the garden from a nearby tree to save it from being consumed by ants. The bird clung to the nest, which came away from the branch. The nest was not recognised as such; and when this was prised off, what they considered a half-grown chick fell to the ground. The nest and chick were replaced in the tree, but both disappeared shortly afterwards, and an exhaustive search for remains turned up nothing. Possibly in this case also the young was carried away by the parent.

Only one parent has so far been seen. This is of the grey phase. The British Museum (Natural History) has sexed specimens belonging to the rufous phase, the grey phase, and an intermediate rufous-grey phase. If the specimens are correctly sexed it would appear that this species is asexually dichromatic, a conclusion reached by Marshall (1978).

The carrying of young in flight has been recorded in the Red-tailed Hawk *Buteo jamaicensis*, Common Moorhen *Gallinula chloropus*, American Finfoot *Heliornis fulica*, Eurasian and American Woodcocks *Scolopax rustica* and *S. minor*, Common Sandpiper *Actitis hypoleucos* and White-browed Coucal *Centropus superciliosus* (Campbell and Lack 1985).

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Hook-billed Bulbul *Setornis criniger* and Grey-breasted Babbler *Malacopteron* *albogulare* at Barito Ulu, Kalimantan

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Sheldon (1987) and Holmes and Wall (1989) postulate that Hook-billed Bulbul *Setornis criniger* and Grey-breasted (White-throated) Babbler *Malacopteron albogulare* are species of nutrient-poor forest such as peat swamp

and *kerangas* forest in their limited Sundaic ranges. There are few records of either species (Holmes and Burton 1987, Sheldon 1987, van Marle and Voous 1988), this paucity of records perhaps being explained by a combination of: (a) genuine scarcity, (b) unobtrusiveness, (c) inaccessibility and neglect of nutrient-poor forests by ornithologists.

Kalimantan has been little studied by ornithologists in recent decades, yet it contains most of the suitable forest for these species. The Barito Bird Project encountered both species frequently in Kalimantan and indicates a revision of the known habitat ranges of both *Setornis criniger* and *Malacopteron albolagare*.

Methods and habitat descriptions

Birds were surveyed in three sites at Barito Ulu (0°6'S–0°11'N 113°49'E–114°19'E), Kalimantan Tengah (Central Borneo), between 120 and 1,000 m altitude, by the 'Barito Bird Project' in summer 1989 (a review of the birds is available in Wilkinson *et al.* in press and full details in Dutson *et al.* in prep.). The general observations in the Table are based on the number of birds seen during 'cold-searching' fieldwork, corrected to a number of full days' fieldwork defined as three observers in the field for seven hours a day. The line-transects are based on twelve (lowland sites) or six (submontane sites) 2 km transects with an estimated 20 m width of bird detection, which appeared to generate fairly accurate population densities for undergrowth species (Dutson *et al.* in prep.). The line-transect figures are hence based on rather small samples but do indicate absolute densities.

The two lowland sites studied were primarily hill forest at 120–250 m altitude. The lowest site (120–200 m) was a *kerangas* mixed dipterocarp transition. Large areas were of virtually *kerangas* forest with typical canopy height 15 m, fairly thick understorey, broken canopy and few emergents, on shallow slopes. Mixed dipterocarp stands were small and localised, these reaching 30 m canopy height with emergents up to 40 m, found usually where the terrain was hilly with occasional steep slopes and bluffs. The middle site (130–250 m) was similar but steeper and with more dipterocarps. Rock faces were common, streams fast-flowing and forest of *kerangas* type restricted to a few areas, especially ridge-tops. The submontane site was an offshoot ridge from the Muller Mountains, fairly low in altitude (800–1,000 m) for its montane habitat. Forest here was generally of lower montane type (Whitmore 1984) with tree heights lower than the lowland sites, more broken canopy and moderately mossy. Areas of extreme mossiness and small stunted trees most like stunted oak-laurel forest (Whitmore 1984) occurred, especially on ridge-tops.

The Tanjung Puting figures are based on work by the same observers in alluvial swamp forest and *kerangas* at Tanjung Puting National Park, coastal Kalimantan Tengah, for three days only. This reserve is known to have high densities of the two species under review (Nash and Nash 1986) but the population densities of most bird and mammal species seemed much higher at Tanjung Puting as well, perhaps derived from regular flooding causing higher forest fertility (pers. obs., R. Bodmer pers. comm. 1989).

Table. Relative densities of *Setornis criniger* and *Malacopteron albogulare*

Site	Altitude (m)	Method	<i>Setornis criniger</i>	<i>Malacopteron albogulare</i>
Barito Ulu site 1	120–200	General observations (birds/day)	1.5	5.3
		Line-transects (birds/km ²)		
site 2	130–250	General observations (birds/day)	0.19	2.3
		Line-transects (birds/km ²)		
site 3	800–1,000	General observations (birds/day)	1.0	0.67
		Line-transects (birds/km ²)		
Tanjung Puting	< 5	General observations (birds/day)	7.7	2.3

Discussion

Generally scarce at the lowland sites (120–250 m), *Setornis criniger* showed a marked preference for patches of low *kerangas*, for instance on ridge-tops, in accordance with Sheldon (1987). This was well demonstrated at the second site (130–250 m), where typical *kerangas* was found in small patches within mixed dipterocarp forest. It was commonest at the lowest site where the forest was on average lower and more *kerangas*-like. However, it was also seen at the highest altitude surveyed, 1,000 m, well above all previous records, which are mostly from 'lowlands' (Smythies 1981, Sheldon 1987, van Marle and Voous 1988). Smythies (1981) claims that this species is restricted to primary forest in Borneo, but records from Tanjung Puting (Nash and Nash 1986) indicate it to be tolerant of degraded habitat, and at Similajau it was much commoner in secondary forest (J. W. Duckworth pers. comm. 1990).

Malacopteron albogulare was common in forest at 120–250 m, overall about the fourth equal commonest babbler with Chestnut-rumped Babbler *Stachyris maculata*, after Scaly-crowned Babbler *Malacopteron cinereum*, Rufous-crowned Babbler *M. magnum* and Brown Fulvetta *Alcippe brunneicauda*. It was recorded in the entire habitat gradation between hill dipterocarp forest and low ridge-top forest, with greatest abundance in low dipterocarp forest with thick undergrowth. Only two pairs were noted at 900 m – although most of the six days at this altitude was spent looking in habitat most suitable for high-altitude species. *Malacopteron albogulare* is not generally found in dryland dipterocarp forest in Borneo, but has been recorded from Semengoh and Similajau in Sarawak (Fogden 1976, Duckworth and Kelsh 1988); it has regularly been found in such forest in Peninsular Malaysia (D. R. Wells in

Sheldon 1987). The species showed a preference for the areas of dipterocarp forest in the *kerangas* of Similajau (J. W. Duckworth pers. comm. 1990). Wells (in Sheldon 1987) claims that the most important criterion affecting its distribution is level and lowland forest; this is not supported by the Barito Ulu records. Its distribution appears to be less easily defined, low soil fertility and moderately thick undergrowth perhaps being more important, as the steep and rocky terrain at Barito Ulu was clearly not unsuitable for it. Abundance appears to be greater at Barito Ulu than Tanjung Puting and Similajau, so perhaps the species's optimal habitat is closer to mixed dipterocarp forest than pure *kerangas*. This species appears to be intolerant of habitat degradation; records from Tanjung Puting (Nash and Nash 1986) and Similajau (Duckworth and Kelsh 1988) are from high forest habitats only.

Both species were easy to identify and easily seen, *contra* many observers' suggestions (Nash and Nash 1986, Batchelor in Sheldon 1987, Holmes and Wall 1989). *Setornis criniger* was generally found in pairs, often in mixed-species flocks, often rather sluggish and rather like Streaked Bulbul *Hypsipetes malaccensis* in habits. The head-pattern itself is distinctive, whilst the tail pattern and call are also characteristic.

D. R. Wells (in Sheldon 1987) indicated that mist-netting often reveals the presence of *Malacopteron albugulare*; several were netted at Similajau (Duckworth and Kelsh 1988), and two were caught at Barito Ulu out of 113 birds netted. However, the species was obvious in the field at Barito Ulu at the densities encountered. Usually first located by its characteristic scolding of the observer, it is easily seen in the undergrowth, usually in pairs, though occasionally in groups of up to five. Visually it is quite obvious, the supercilium extending back behind the eye with a marked kink over the eye unlike the illustration in Smythies (1981). *Contra* Sheldon (1987), Barito Ulu and Tanjung Puting birds had white, not yellow, lores. Holmes and Wall (1989) suggest that it is overlooked because of its absence from mixed-species flocks and infrequent singing. However, we found it to be more obvious than other non-flockers such as Ferruginous Babbler *Trichastoma bicolor*, owing to its tendency to scold observers openly. We did not identify this species on call but few 'jungle babbler' vocalisations were identified with certainty as their wide repertoire of calls makes aural identification difficult for all but the most experienced observers.

Malacopteron albugulare is a most atypical *Malacopteron*, more like a *Trichastoma* babbler in its inhabiting undergrowth, small group-size, behaviour, calls and short tail. Ripley and Beehler (1985) show that it is aberrant for a *Malacopteron* but maintain it within this genus following Deignan (1964). Two characters used to justify this classification are in our view incorrect for this species. Whilst Ripley and Beehler (1985) claim the species to be 'arboreal', birds at Barito Ulu were usually low in undergrowth and never seen in the canopy, and the 'distinct sooty cap' is in fact concolorous with the rest of the dorsal head and neck.

Both species have been considered threatened to some extent, with *Malacopteron albugulare* considered 'near-threatened' by Collar and Andrew

(1988) and both cited by Sheldon (1986) as threatened in Sabah where *Setornis criniger* is likely soon to lose its last stronghold to logging. However, the altitude and habitat extensions indicated above should be borne in mind in future reassessments of these species' status.

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