

Zubakin *in litt.* 2003). There appear to be few published photographs of young Slender-billed chicks; one in Sauer (1982) closely resembles the second chick described above.

On 26 June, the two younger chicks were ringed in the nests (the older one had already disappeared). As juveniles, the birds had lighter-coloured upperparts, being greyish rather than brownish as in Black-headed Gulls. The base of the bill was pink contrasting with the dark tip, rather than the greyish-pink bill base and less contrasting dark tip of juvenile Black-headed Gull. The last date when the juveniles were seen was 27 July, when they could fly well.

This appears to be the first case of hybridisation between Slender-billed Gull and Black-headed Gulls, and occurred c.2,000 km east of known breeding areas for Slender-billed Gull.

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REFERENCES

- Moores, N. (2002) Additions to the South Korean List: observations of species not listed by Lee, Koo and Park (2000). Downloaded from <http://www.wbkenglish.com/newbirds27.asp> on 30 November 2002.
- Popov, V. V. and Salovarov, V. O. (2000) ['Rare bird species of Angarsk District (Southern Baikal area).'] Pp. 191–194 in Dorzhiev, Ts. Z., ed. *The ornithological observation in Russia. Issue 2.* Ulan-Ude: Buryat University Press. (In Russian.)
- Ryabitsev, V. K. (2001) ['Birds of Ural, Near-Ural area and Western Siberia.'] Ekaterinburg: Ural University. (In Russian.)
- Sauer, F. (1982) *Vögel 2: Wasservögel.* München: Mosaik Verlag.
- Tebb, G. and Ranner, A. (2002) New and significant bird records from Buryatia, Russia. *Forktail* 18: 101–105.
- Tupitsyn, I. I. and Fefelov, I. V. (1995) ['New bird species at the Baikal Lake.'] *Ornithologia* 26: 197–198. (In Russian.)
- Zubakin, V. A. (1988) ['Slender-billed Gull.'] Pp. 105–115 in Il'itchyov, V. D. and Zubakin, V. A., eds. *Birds of USSR: Laridae.* Moscow: Nauka. (In Russian.)

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Notes on the population density and feeding ecology of the Collared Falconet *Microhierax caerulescens* in Buxa Tiger Reserve, West Bengal, India

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The Collared Falconet *Microhierax caerulescens* is found from India, Nepal and Bhutan through to Myanmar, Thailand, Laos, Cambodia and Vietnam (del Hoyo *et al.* 1994). In India, the species is found throughout the lower Himalayan foothills from Garhwal eastwards to Assam, the north-eastern hill states and Arunachal Pradesh, usually up to 900 m occasionally to 2,000 m (Ali and Ripley 1987). It occurs in deciduous, moist-deciduous and evergreen forest, and is most often observed in man-made clearings, natural open spaces and forest margins (Ali and Ripley 1987). Relatively little has been published on the species, apart from observations of allopreening (Sparks 1965), and breeding (Naoroji 1997, Kemp and Van Zyl 1998). Here we present some observations on the feeding ecology and population density of the species in Buxa Tiger Reserve, West Bengal, India.

STUDY AREA

Buxa Tiger Reserve (26°30–55'N 89°20–55'E) is located in the north-eastern corner of Jalpaiguri

district, West Bengal, India at 60–1,750m. It covers an area of 760 km², with a core area of 385 km² and a buffer zone of 375 km². The habitat is mainly tropical moist-deciduous forest (Champion and Seth 1968) dominated by sal *Shorea robusta*, plus evergreen forest, riverine forest, scrub, grassland, and plantations of sal, teak *Tectona grandis* and jarul *Lagerstroemia reginae*. The temperature ranges from 12°C to 32°C, and the average annual rainfall is 4,100 mm.

METHODS

Falconets were observed during a study on raptor ecology carried out in the reserve during 1998–2000. A 45 km transect was driven every two weeks from January 2000 to December 2000 from Damanpur to Checko via Panijhora, Pambubusti, Rajabhatkawa, Santrabari, Jainty and '23rd mile tower'. A 50 m band on each side of the transect was searched, with one person observing each side from a slow-moving (20 km/h) jeep. Each census was carried out during 07h00–11h00. Cloudy and rainy days were avoided.

The population density was calculated as $d=n/lw$ where d = density, n = number of individuals, l = length and w = width of the transect. When foraging attempts were observed, the prey species, perch type and height, hunting method, and habitat were noted, and any prey remains were collected for identification.

RESULTS

Collared Falconets were commonly seen at 60–1,000 m in moist-deciduous forest, plantations and around settlements. A mean population density of 1 ± 0.34 birds/km² was recorded, ranging from 0.4 birds/km² in May to 1.7 birds/km² in February. Usually, pairs or groups of 4–6 were seen. Adults with 2–4 fledglings were commonly seen between June and September. The largest flock size observed was 18 adults at a pre-roosting site close to the Jainty Range office of the reserve on 7 November 1998.

Falconets searched actively for prey while perched, rapidly turning their heads. Sixty-two hunting attempts were observed. The mean time between two foraging sallies during active foraging was 7.6 ± 5 minutes (during 325 minutes observations). Forty-three foraging sallies (69%) were successful. Falconets most commonly used trees to perch on when hunting (94% of observations), but electric wires (3%) and fence posts (3%) were also occasionally used. Perches ranged from 2.5 to 35 m in height, and prey were caught up to 50 m from the perch. Most insect prey was caught in the air. Eighty-four prey items were recorded (Table 1), comprising mainly insects (65%), in particular butterflies. The time spent handling prey ranged from 10 seconds (for insects) to 33 minutes (for a bird).

Table 1. Prey items of Collared Falconet recorded during 1998–2000 in Buxa Tiger Reserve.

| Prey items | No (%) |
|---|---------|
| Nepal House Martin <i>Delichon nipalensis</i> | 2 (2) |
| Lizard <i>Mabuya carinata</i> | 1 (1) |
| Insects: | |
| <i>Charaxes bernardus</i> | 21 (25) |
| <i>Graphium cloanthus</i> | 11 (13) |
| <i>Graphium sarpedon</i> | 4 (5) |
| <i>Papilio castor</i> | 6 (7) |
| <i>Papilio polytes</i> | 4 (5) |
| <i>Cartilla</i> sp. | 5 (6) |
| <i>Fulgora</i> sp. | 2 (2) |
| <i>Cicada</i> sp. | 2 (2) |
| Unidentified | 26 (32) |

DISCUSSION

Collared Falconets are fairly common to uncommon throughout much of their extensive range (del Hoyo *et al.* 1994, Ferguson-Lees and Christie 2001). The species is small and can easily be overlooked, but it is relatively conspicuous during courtship (Naoroji 1997). We found it to be common in Buxa Tiger Reserve. The lower densities recorded during April–May may have been because individuals are much less conspicuous during the incubation period.

Our observations were consistent with previous reports that the species feeds mainly on large insects, especially butterflies, but also takes birds and lizards (Ali and Ripley 1987, Kemp and Van Zyl 1998, Grimmett *et al.* 1998, including some larger than itself (Madge 2002, Mahato 2002), and small mammals (del Hoyo *et al.* 1994). Naoroji (1997) reported that three items delivered to a Collared Falconet nest were all birds. Ali and Ripley (1987) stated that larger butterfly species like *Papilio* spp. and *Danaus* spp. are avoided. However, we found that two *Papilio* species comprised 12% of identified prey items. The commonest prey item, *Charaxes bernardus*, is more abundant and larger-bodied than most other similar-sized butterflies found in the reserve.

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REFERENCES

- Ali, S. and Ripley, S. D. (1987) *Compact handbook of the birds of India and Pakistan*. New Delhi: Oxford University Press.
- Champion, H. G. and Seth, S. K. (1968) *A revised survey of forest types of India*. New Delhi: Government of India.
- del Hoyo, J., Elliott, A. and Sargatal, J., eds. (1994) *Handbook of the birds of the world*. Vol. 2. Barcelona: Lynx edicions.
- Ferguson-Lees, J. and Christie, D. (2001) *Raptors of the world*. London: Christopher Helm.
- Grimmett, R., Inskipp, C. and Inskipp, T. (1998) *Birds of the Indian subcontinent*. Delhi: Oxford University Press.
- Kemp, A. C. and Van Zyl, A. (1998) Cooperative breeding by Collared Falconets *Microhierax caerulescens*. *Forktail* 13: 131–132.
- Madge, S. (2002) Collared Falconet *Microhierax caerulescens* taking a Crested Treeswift *Hemiprocne coronata*. *Danphe* 11(1): 25.
- Mahato, B. (2002) On the feeding items of Collared Falconet *Microhierax caerulescens* in lowland Nepal. *Danphe* 11(1): 25–26.
- Naoroji, R. (1997) First breeding record of the Collared Falconet *Microhierax caerulescens* for the Indian subcontinent in Corbett National Park, Uttar Pradesh. *J. Bombay Nat. Hist. Soc.* 94: 267–272.
- Sparks, J. H. (1965) Clumping and allo-preening in the Red-thighed Falconet *Microhierax caerulescens burmanicus*. *Ibis* 107: 247–248.

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