

the south-west monsoon in June to August. Mating was observed mainly in December. Eggs were mostly laid during the last week of December to the first week of January. Selection of the nest-hole takes place after many prolonged inspections of holes and hollows by both sexes. No nest materials were seen to be taken into the hole, and no excavation or alteration of the entrance hole was observed. Mean clutch size was 4 (range=2–5, n=11). The mean incubation period was 23 days (range=22–25, n=11). Initially, the female guarded the chicks and the male brought the food whereas later the roles were reversed. The male was first seen to bring food to the nest hole when the chicks were three days old. The mean fledging period was 32 days (range=31–34, n=11). The majority of chicks fledged during the last week of February to the first week of March. Eleven nests were located in three tree species: *Grewia tiliaefolia* (seven), *Melia dubia* (three) and *Tectona grandis* (one). The preponderance of *Grewia tiliaefolia* may be attributed to its greater height and spread. All three tree species are common in the study area and no immediate threat to them was evident. The mean height of the 11 nest trees was 14.5 m (range: 13.1 to 16.9 m). The mean nest hole height was 7.9 m (range: 4.8 to 8.3 m). The Malabar Parakeet breeds much earlier than other secondary hole nesters in the study area (Gokula *et al.* 1999), and this may reduce competition for nest holes. Chicks are occasionally caught by the local tribespeople.

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Breeding behaviour of Jerdon's Baza *Aviceda jerdoni* at Gunung Leuser National Park, Sumatra, Indonesia: the first nesting record for Sumatra

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Jerdon's Baza *Aviceda jerdoni* is a widely distributed species which is largely resident in a discontinuous range from south-west India and Sri Lanka through parts of South-East Asia, the Philippines, and Indonesia (del Hoyo *et al.* 1994). It is relatively uncommon to rare throughout its range (del Hoyo *et al.* 1994, Ferguson-Lees *et al.* 2001). Due to its secretive breeding behaviour, its status in some parts of its range, in particular Sumatra, Vietnam and Peninsular Malaysia, is uncertain (Ferguson-Lees *et al.* 2001). It has been suggested that the handful of records from Sumatra (van Marle and Voous 1988, Holmes 1996) may at least partly be assigned to resident breeders (van Marle and Voous 1988). However, since no evidence exists to confirm breeding, records are generally ascribed to juvenile birds

dispersing or migrating into Sumatra from breeding sites in southern Thailand (Ferguson-Lees *et al.* 2001).

Between July 1998 and March 1999, I regularly observed an adult male and female Jerdon's Baza in the surroundings of the Ketambe Study Area, located in the centre of the Gunung Leuser National Park, Sumatra, Indonesia. The Ketambe Study Area (03°41'N 97°39'E, 350–700 m) comprises primary tropical lowland alluvial rainforest (Rijksen 1978). The Alas river, which is 50–100 m wide and edged by low scrubs, flows through the area. The Kutacane-Blangkejeren road (c.5–7 m wide) runs parallel to the river. The birds were identified as belonging to the subspecies *A. j. jerdoni* (four other subspecies are recognised: del Hoyo *et al.* 1994). In January 1999, the female was discovered sitting on



Figure 1. Female Jerdon's Baza nest-building (with male hidden behind).

her nest in a tall tree at the edge of lowland forest. Since few nests of Jerdon's Baza have been studied in detail (Ferguson-Lees *et al.* 2001), this provided a unique opportunity to study the breeding behaviour of this unobtrusive raptor.

METHODS

Observations were made from a ridge opposite the nest tree. Using a hide constructed from branches and a 20–60 x 60 telescope mounted on a tripod, disturbance to the nest was avoided as much as possible. Observations of breeding behaviour were made on 22 separate days between 18 January and 20 March 1999 from 07h30 to 15h30 and occasionally from 17h45 to 18h45. Since female and male plumages differ markedly in this species (Ferguson-Lees *et al.* 2001), sexing was relatively easy.

RESULTS

The nest tree was located at the edge of the primary forest at 400 m, adjacent to the Kutacane–Blangkejeren road. The tree was approximately 35 m tall with diameter at breast height of 0.6 m. The trunk had only a few main branches, and the nest was positioned on one of the upper branches, c.7 m from the top. The small nest, which measured about 35–40 cm across and 20–25 cm deep, was a relatively simple structure, containing a few thick twigs 40–50 cm long, and several smaller twigs.

Between 18 and 26 January 1999, the female was usually observed sitting or lying flat on the nest in the morning, her tail protruding markedly over the edge of the nest (Figure 1). Both male and female were seen collecting nest material, although the male's contribution was significantly greater. When on the nest, both birds uttered soft contact calls, best transcribed as *tjip-tjip*, repeated several times. Around midday, the male flew in once or twice every hour to add a twig to the apparently flimsy nest structure. From 26 January, the female's share in collecting mostly leafy twigs gradually



Figure 2. Female Jerdon's Baza carrying twig to the nest.



Figure 3. Male and female Jerdon's Baza mating and calling.

increased (Figure 2). Mating was recorded 3–5 times per day from 28 January to 2 February, usually in the early morning. Typically, the male would start calling from a tree 25 m from the nest tree, and the female would join him, followed by copulation, which was accompanied by loud calls from both birds (Figure 3). On 5 February, the male was observed lying flat on the nest for the first time, later to be relieved by the female bringing a fresh twig in her talons. Their behaviour indicated the presence of one or more eggs on the nest. Between 5 February and 9 March, the female was almost constantly at the nest. The female was relieved from the nest by the male on a few occasions, for 10–20 min. The nest relief was accompanied by loud, whining

vocalizations *peee-ow*, given by both birds. On 9 March, the female was seen brooding a newly hatched nestling. Since egg-laying occurred between 2 and 5 February, incubation took 32–35 days. Among the food items the male was observed feeding to the chick were cicadas *Cicadidae* sp. and a green lizard. On 15 March, only the male was present near the nest tree; the female was not observed; despite heavy rain, the male made no visits to the nest. The chick was not observed at the nest, and may have been depredated or fallen out of the nest due to strong winds.

DISCUSSION

This breeding record of Jerdon's Baza constitutes the first for Sumatra. Since breeding in the extreme north-west of Peninsular Malaysia has not been confirmed to date (Ferguson-Lees *et al.* 2001), it represents an extension of the known breeding range by approximately 500 km to the south-west of the southern boundary of the breeding range in southern Thailand.

The nest was located at the edge of primary tropical lowland rainforest, which is reported to be typical throughout the species's range (del Hoyo *et al.* 1994, Ferguson-Lees *et al.* 2001). The pair was seen exclusively in or above primary lowland forest or near its edges (bordering rivers or a small road); the birds were never observed near or above nearby rice paddies or other cultivated areas, despite the close proximity of such habitat. Unfortunately, illegal forest clearance has become a serious problem at the Ketambe Study Area, and at other lowland sites in the Leuser ecosystem (S. Wich verbally, 2000). Stimulated by recent economic and political crises, illegal logging occurs at catastrophic rates throughout Sumatra's lowland forest, even inside official park boundaries (Jepson *et al.* 2001). If the

current state of forest mismanagement continues, lowland forests on Sumatra will have disappeared by 2005 (Holmes 2000, Jepson *et al.* 2001), which will severely impact Jerdon's Baza as a breeding species on Sumatra.

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High-altitude records of the House Crow *Corvus splendens* in Himachal Pradesh and Jammu and Kashmir, India

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In June and July 2001 we observed House Crows *Corvus splendens* at high altitudes on several occasions in Himachal Pradesh, and the Ladakh region of Jammu and Kashmir, India. Singles were seen at the human settlements of Koksar, Himachal Pradesh (32°50'N 77°05'E) at 3,200 m and Dracha, Himachal Pradesh (32°55'N 77°01'E) at 3,370 m on 22 June 2001. One individual was seen at Karu, Ladakh (34°04'N 77°59'E) at c.3,500 m on 27 June 2001. Finally, two birds were observed near the *gompa* (monastery) of Hanle, Ladakh, (32°55'N 78°55'E) on 29 June 2001 at 4,240 m, which

probably represent the highest altitude record for this species.

According to Kazmierczak and van Perlo (2000) the species is chiefly found below 1,600 m but sometimes up to 2,400 m. Grimmett *et al.* (1998) noted it occurs up to 2,100 m in India and up to 2,500 m in summer in Bhutan. In Nepal it is found below 1,525 m, with only one report from a higher altitude: 2,100 m at Nagarkot on 9 February 1993 (Inskipp and Inskipp 1991). In Sikkim, an individual was recorded by F. N. Betts at 2,600 m (8,900 feet) in May 1943 (Ali 1962).