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Notes on the breeding of Jerdon's Baza *Aviceda jerdoni* in Wayanad district, Kerala

C. K. Vishnudas

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C. K. Vishnudas, Vishnu Nivas, Karinkutty P.O, Kalpetta, Wayanad 673121, Kerala, India. Email: ckvishnudas@yahoo.co.uk
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Jerdon's Baza *Aviceda jerdoni* is considered one of the least studied raptors in India. Its distribution is discontinuous and locally it is uncommon-to-rare (Ferguson-Lees & Christie 2001). Of the two races found in India, the nominate, *Aviceda j. jerdoni*, is present in Sikkim, Assam, northern West Bengal and the north-eastern hill states. The southern, *Aviceda j. ceylonensis*, is found south of c12°N, in the Western Ghats of Karnataka, Kerala and Tamil Nadu, and the Eastern Ghats of Andhra Pradesh (Ali & Ripley 1983; Grimmett *et al.* 1998).

Nair (see elsewhere in this issue) reports the bird from Similipal (at the northern tip of the Eastern Ghats range) in Orissa, which is almost midway between north-eastern India and the Western Ghats, indicating a likely intergradation of races in the Eastern Ghats (Praveen J., *in litt.*). Ripley *et al.* (1988) collected a specimen of a non-breeding female *A. j. jerdoni*, south of Similipal in the Visakhapatnam ghats. In Kerala it has been sighted at Kurichyat range of Wayanad Wildlife Sanctuary and Eravikulam National Park (Sashikumar *in litt.*). There are also random sightings from Silent Valley, Peechi, Nelliampathies, Parambikulam, Eravikulam and Periyar (Praveen J., *in litt.*). Ali (1969) reports of an 1890 record of nesting (?), through the contributions of the oologist, J. Stewart, documented by Baker (1935). There is no report since, of breeding in this region. "There is also a juvenile specimen from the Wayanad in the British Museum" (Baker & Inglis 1930).

This note documents the first breeding record, in over a century, of Jerdon's Baza *Aviceda jerdoni* from Vaduvanchl in Wayanad district, Kerala (India), during two breeding seasons, 2006 and 2007.

Methods

Breeding behavior was observed for eight days in 2006, between 15.v–20.vi and again for a total of 20 days between

1.iii.2007 and 5.vi.2007. Most observations were carried out between 09:30hr–17:00hr, from a 15m tall hide placed c.6m from the nest. Some observations were made from the ground. Details of nest tree and nest site were collected as per methods adopted by John *et al.* (1993).

Location

The Wayanad district region of Kerala is characterized by undulating hills and valleys, in the foothills of Chembra Peak (2,100m), the highest geographical point in the region. Isolated human habitations and plantations of tea, coffee, arecanut, *etc.*, surrounded the nesting location. These areas originally comprised semi-evergreen forest, but during the 1960s they were cleared for planting various cash crops like coffee, pepper, tea, *etc.*

A nest was first observed on 6.vi.2006, in an isolated tea garden on a hilltop, 1,000m a.s.l., at Vanduvanchal (Wayanad district, Kerala), supporting Ali & Ripley's (1998) observations. The nest was built among the top branches in the dense canopy of a previously pruned rubber tree, using twigs and leaves. The tree had a diameter, at breast-height, of 68cm. The cup-shaped nest was 13m above the ground and c.50cm from top of the tree. The birds were never worried about the presence of human beings (plantation workers) under the nest tree and in its vicinity.

Breeding

2006 season: On 7.vi.2006 there were two nestlings in the nest. They sported a white-tipped black crest and white underparts with chestnut buff. Bars on the tail were much narrower than those of the parents. Their heads had noticeable black streaks and the bills were slaty black.

Both parents were seen feeding the nestlings, at intervals of c.30min. A major portion of their diet comprised lizards. 12 lizards and three frogs were fed on 8.vi.2006 between 10:00hrs–16:30hrs. Other prey included large beetles and a



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Jerdon's Baza *Aviceda jerdoni* fledgling

rodent (rat?) on 9.vi.2006. Their recorded diet includes lizards, frogs, grasshoppers and other large insects (Ali & Ripley 1983; Grimmett *et al.* 1998). The nest building activities started in the last week of March, in 2006, and the two fledglings flew out from the nest on 16.vi.2006.

2007 season: I first spotted a pair collecting nesting material in early March in the same tea estate. Jungle Crows *Corvus macrorhynchos* tried to hijack the material from one of the bazas on 12.iii.2007. This year too the nest was made on a rubber tree, 10m away from the previous nest-tree and at a height of 15m above the ground, positioned on the top branches, hidden from all directions. The female was seen incubating from 28.iii.2007 onwards. Between 2–5.iv.2007 the male was also found incubating. The tail of the incubating bird could be seen extending out of the nest, as observed by Buij (2003) for *Aviceda j. jerdoni*.

On 4.v.2007 one chick was observed in the nest, on 6.v.2007, two, and on 7.v.2007 three! This indicates that the incubation period lasts 37–40 days. Parents began rigorously feeding the young one from 4.v.2007. Feeding behavior was observed for nine days during the nestling stage.

Feeding behaviour

Unlike other raptors, which carry prey in their talons, the Jerdon's Baza invariably carries all its prey in its beak (except on three occasions during this study). The male and the female approached the nest from opposing directions. After feeding the young, both parents would perch for 5min on a neighbouring, densely foliated tree, c.40m away from the nesting tree, attentively looking towards the nest. The male

would perch on the upper branches of an anjili tree *Artocarpus hirsutus* and the female in a silver oak. From this vantage point they uttered a long "Pee-wheeehh"—to which the chicks responded with mixed notes of "kili-kili-kili."

The adults used the same perching trees for the two breeding seasons. Occasionally, after landing, they would call, before approaching the nest. The adults fed the chicks by turns, though on 27.v.2006 the youngest seemed more aggressive than the others to get at the food. During the 2007 season, the third (youngest) chick was much smaller and weaker than the other two. Initially, prey, especially large lizards and rodents, was torn into smaller pieces before being fed to the chicks. The major groups of prey given to the chicks were Malabar flying frogs *Rhacophorus malabaricus*, which are abundant in the region after pre-monsoon showers, green grasshoppers, praying mantis, brown-hoppers, lizards (including a green lizard). In the 2006 nesting season, between the 20th and 30th days after hatching, the parents fed nestlings every 20min. On one morning, between 10:30–12:30hrs, they fed the young every 15min. On one occasion, the male passed the prey (a frog) to the female, on the perch tree, who delivered it to the nest.

The male would generally place prey in the nest and immediately fly away, while the female would stay for a minute in the nest and quite often, tear up the prey. The male collected lizards up to 15m away from the nest site by pouncing on them from a concealed perch. The adults approached the nest by expertly gliding below the canopies of surrounding trees.



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Jerdon's Baza *Aviceda jerdoni* fledgling

Out of 323 prey deliveries in two nests, 33% comprised amphibians, 24% lizards, 19% grasshoppers, 7.7% beetles, 3% preying mantis and 11.5% remained unidentified. One small bird and two rodents (rats?) were also included. The amphibians were mainly Malabar flying frogs.

Nestlings

Nestlings are scaly in appearance (Fig. 2), with white eyes and nine broad white-tipped black crest feathers (29th day after hatching) in ascending order from back to front (Fig. 3). Head is streaked with black. Bill is bluish-black. Upper parts are brown with white buff edged. Throat streaked and white, abdomen and belly white, legs pale rufous-white and tail feathers white tipped brown, primaries and secondaries brown.

Vocalisation

The call of the bird is a “long drawn mournful *queer...*” somewhat resembling the cry of the Crested Serpent-Eagle (Ali & Ripley 1998). The first three notes “*to-wheeh*” resemble the call of Crested Serpent-Eagle. Other than this the adults made a call “*Kit-Kit-Kit*” or “*Kip-kip-kip*”. The chicks make loud “*kili-kili-kili*” calls when the parents are approaching. This was audible up to 30m–45m from the nest.

Survival...

In the last week of June 2006, the family of bazas successfully survived torrential monsoon rain (1,000 mm) and strong winds. The chicks struggled valiantly to remain in their

small, perilously swaying nest. Whenever they were without the adults, the chicks stretched out their wings and stabilized themselves from the winds, moving to the part of the nest closest to a strong branch. In 2007, the family faced a similar situation but miraculously survived a strong wind on 25.v.2007—when the previous years' nest tree and three other rubber trees near it snapped in the middle. One adult used to roost in this previous years' nest tree before this happened.

...and tragedy

During the current (2007) breeding season, a Crested Serpent-Eagle was often seen gliding above the rubber tree canopies. The adult bazas invariably kept it at bay by aggressively chasing it away from the nest. But the situation changed when one of the nestlings flew away from the nest on 30.v.2007. The parents concentrated their attention on this fledgling—feeding it thrice between 11:00–12:00hrs, in comparison to one visit to the nest. On 1.vi.2007, the second nestling also flew out of nest. This indicates a fledging period of 27–29 days vis-à-vis 45 days recorded by Sivakumar & Prakash (2005).

While the parents were busy attending the two fledglings, a Crested Serpent-Eagle predated the smallest chick from the nest on 1.vi.2007. After fledging, the young ones and the adults remained in the tea garden for nearly one week.

I have observed a Scarlet Minivet *Pericrocotus flammeus* attacking the adult baza when it sat on a rubber tree, near its nest. On the same hillside, 20m below the nest tree, was a Shikra's *Accipiter badius* nest. There was no aggressive behaviour between these two species of raptors, during their nesting.

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Jerdon's Baza *Aviceda jerdoni* female