The trees within a 100 m radius of the nest tree included *C. nucifera, Areca catechu, Erythrina indica, F. hispida, Tamarindus indicus, Mangifera indica, Holigarna arnottiana, Artocarpus integrifolia, Borassus flabellifer, Pterocarpus marsupium* and *Cycas* sp.

The incubation period lasted 46 days and the fledging period, 42 days. In the morning of 23.v.2003 the incarcerated female broke open the nest and flew out, accompanied by the fledgling.

Another nest was observed in Tharippilode village in February 2006. The locality was a hilly terrain with a plenty of trees around. Pre- and post-nesting behaviour was as explained above. The bird nested in a natural cavity of a pezha tree *Careya arborea* at a height of 98 cm above the ground and 2.4 m away from a house. The tree was 10 m tall with a DBH of 75 cm. This nest was also oriented towards north-west .The fruits and seeds collected from the midden showed similar items as those observed in the earlier case but, additionally, there were seeds of *Strychnos nuxvomica*. The trees in the vicinity of the nest were identified as *C. nucifera, Areca catechu, Psidium guajava, A. integrifolia, M. indica, T. indicus, C. arborea, Macaranga peltata, Tectona grandis, M. elenji, Anacardium occidentale, Citrullus vulgaris, A. hirsutus* and *Myristica fragrans.*

Discussion

These observations appear significant because, first, the bird left the forest and nested inside villages. Second, it made nests close to human habitation. This may be due to the reduced numbers of suitable nest trees, thanks to the felling of trees for construction of roads. Officially (commercially?), trees with cavities are uneconomical. But the fact remains that such trees are crucial for the survival of hornbills. Decline in fruit trees also may have forced the birds to breed in the villages. Nests of hornbills at such low heights have not been recorded earlier. Malabar Grey Hornbills nest at heights ranging between 9–18 m from ground (Grimmett *et al.* 1998). Mudappa (2000) observed nesting at a height of 14 m. There is no previous record of their, nor that of any other hornbill species, nesting in *C. nucifera* and *C. arborea*. North-western orientation of nest in both cases agrees with the observation of Mudappa (2000) and could actually be helpful in minimizing the direct sunlight into the nest. However nesting of the hornbill in villages is not a good sign since it potentially indicates the loss of adequate breeding conditions in the forests. Conservation of hornbills solely depends on protection of trees, especially figs, and not only retaining but also viewing trees with cavities as an important ecological niche.

Acknowledgements

I am grateful to Jafer Palot for encouraging me to publish my observations and to an unknown referee for reviewed an earlier draft. Thanks are also due to my friend, Sasi Gayathri, who accompanied me in the field for taking photographs.

References

Abdulali, H. 1942. The nesting of the Malabar Grey Hornbill. *J. Bombay Nat. Hist. Soc.* 43 (1): 102–103.

Ali, S. 1969. *Birds of Kerala.* 2nd ed. Bombay: Oxford University Press.

Ali, S. & Ripley, S. D. 1970. *Handbook of the birds of India and Pakistan together with those of Nepal, Sikkim, Bhutan and Ceylon. Frogmouths to pittas.* Vol 4. 1st ed. Bombay: (Sponsored by Bombay Natural History Society) Oxford University Press.

Grimmett, R., Inskipp, C. & Inskipp, T. 1998. *Birds of the Indian Subcontinent.* 1st ed. London: Christopher Helm, A & C Black.

Mudappa, D. 1994. Nesting habitat of Malabar Grey Hornbill (*Ocyceros griseus*) in the Anamalais, southern Western Ghats, India. Dissertation. Salim Ali School of Ecology, Pondicherry University, Pondicherry.

Mudappa, D. 2000. Breeding biology of the Malabar Grey Hornbill (*Ocyceros griseus*) in southern Western Ghats, India. *J. Bombay Nat. Hist. Soc.* 97 (1): 15–24.

Mudappa, D. C. & Kannan, R. 1997. Nest-site characteristics and nesting success of the Malabar Gray Hornbill in the Southern Western Ghats, India. *Wilson Bulletin* 109 (1): 102–111.

The plight of Rollapadu Great Indian Bustard Sanctuary, Andhra Pradesh

Rajeev M. Mathew

Mathew, R. M. 2007. The plight of Rollapadu Great Indian Bustard Sanctuary, Andhra Pradesh. *Indian Birds* 3 (4): 153–154.

Rajeev M. Mathew, 301, Matthews' Mansion, 6-3-912/1, Kapadia Lane, Raj Bhavan Road, Somajiguda, Hyderabad 500082, Andhra Pradesh, India. Email: *raajeev@glenandbrook.com*

Rollapadu, in Kurnool district, Andhra Pradesh, is a designated sanctuary for the Great Indian Bustard *Ardiotis nigriceps*. It is basically flat open grassland with marginal lesser millets cultivated in patches. Due to the lack of rainfall –being situated in a semi arid region – the habitat is inhospitable to many life forms; only the hardy survive.

Among these, the mega-fauna are: Great Indian Bustard, Blackbuck *Antelope cervicapra*, Wolf *Canis lupus* and the Lesser Florican *Sypheotides indica*. For the Bustard and the Lesser Florican this is a critically important area since this is where they breed in relative safety.

Biodiversity at Rollapadu thrived due to its remoteness. There were times when, in just under an hour, forty-four bustards have been seen. Blackbucks were seen occasionally, as were wolves. Foxes *Vulpes bengalensis* were the commonest canids. Over the years, the numbers of blackbuck increased to

the detriment of bustard populations. Blackbuck fed on all edible grasses, which were the favoured food of grasshoppers and locusts, which in turn were food for the bustard. Problems due to the lack of food were compounded by grazing blackbuck, which caused the grass cover to disappear, resulting in poor nesting success of these ground nesters. This also had an adverse effect on the Lesser Florican whose habitat and habits are similar to its larger and more famous cousin. The problem only aggravated with cattle, sheep and goats grazing, thus competing for meagre resources, and a shepherd with dogs is a definite deterrent to wild herbivores. They also kept the wolves at bay, which occasionally took livestock but still mainly preyed on the blackbuck—as several kills are testimonial. Wild boar *Sus scrofa* were seen extremely rarely; mainly towards the lake and other thick cover.

Close to the sanctuary is Alagnoor tank, which hosts vast numbers of birds (mainly waterfowl) during winters. Large gaggles of Bar-headed Goose *Anser indicus* and occasionally vast flocks of Demoiselle Cranes *Grus virgo* are a common sight here. This tank has been deepened, extended and connected to the Telugu Ganga canal, making it a balancing reservoir. This has led the groundwater levels to rise. The sudden inflow of water into a semi-arid zone – the habitat of which is predominantly grassland with stunted trees and Phoenix palms – has altered the ecosystem considerably. All these changes will have a detrimental effect on the environment, the fauna and flora. Earth, brought from outside, could harbour seeds of Mesquite *Prosopis juliflora*, that hardy species which overruns local flora and provides excellent cover for Wild boar. The two would prove to be the bane for the wildlife and the villager alike.

The cropping pattern around Rollapadu is changing slowly but surely, steering away from traditional dryland crops towards water intensive cultivation, as can be seen with the cultivation of Sugarcane (*Sacarum* sp.). The soil, naturally deficient of nutrients, is being excessively doused with fertilizers and, sprayed copiously with chemical pesticides. The obvious result is a stunningly downward spiral in life forms. These changes are no more than two years old and already the damaging effects are manifest. As the farmer grows prosperous, fertilizer and pesticide salesmen descend upon him. The gritty soil, has so far been good only for the cultivation of meagrely profitable lesser millets,. Now soil will be imported for more remunerative produce, especially for the wet cultivation of sugarcane and paddy. This will definitely turn the entire ecology of the place and stand it on its head.

Rollapadu was famous for its harrier (*Circus* sp.) roosts. Several hundred birds (numbering close to two thousand) would roost in the fallow grasslands and fields. In the winter of 2005–2006 over two hundred were picked up dead—presumably poisoned by pesticides ingested by rodents, insects and birds, which make up their prey. Foxes too have disappeared, many being found dead, has much of the other wildlife. Bustards have become very difficult to come by and are extremely shy. Their numbers too are down as fewer and fewer birds are seen with each passing year. The Lesser Florican has not been sighted for over a year now. Clouds of Short-toed Larks *Calandrella cinerea* that were seen earlier have disappeared completely with just a vestige of their former numbers remaining.

With friends I visited the sanctuary on 13.i.2007. We were disappointed in the numbers of birds and other wildlife seen. Of the harriers, only Montague's *Circus pygargus* was spotted, about eight or nine individuals. Kestrels *Falco tinnunculus* were much fewer in numbers. A night drive with spotlight also proved futile, as even the Black-naped Hare *Lepus nigricollis* were absent. In fact, not an eye shone in the spotlight's beam. This is a dismal sign of things to come.

With the advent of water and the change in habitat it brings, wild boar numbers are increasing. These animals will cause great strain on the already fragile ecosystem. Their penchant for tubers and their omnivorous diet could put all ground-nesting birds at great risk. Their habit of entering standing crops will put them at odds with the local populace, which is already vexed with the blackbuck menace. Sugarcane brakes would provide them ample cover while paddy, excellent wallow.

The Rollapadu of the Great Indian Bustard and the wolf seems to be on the road of extermination.

Aashesh Pittie

Rollapadu Great Indian Bustard Santuary