

First record of successful breeding of the Ibadan Malimbe *Malimbus ibadanensis*

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Summary

We monitored a pair of Ibadan Malimbe *Malimbus ibadanensis* nesting on an *Antiaris toxicaria* tree in farmland near Agbado Ekiti, SW Nigeria, April–June 2017. The nest was built mainly by the male but both parents fed the nestling. A fledgling was found being fed by adults, 12 days after the last activity at the nest was observed. Native trees left growing in farmland may be important breeding sites for this endangered regional endemic, and local communities need to be made more aware of it.

Résumé

Première observation d'une reproduction réussie du Malimbe d'Ibadan *Malimbus ibadanensis*. Nous avons suivi de près un couple du Malimbe d'Ibadan *Malimbus ibadanensis* nidifiant sur un arbre *Antiaris toxicaria*, sur des terres cultivées près d'Agbado Ekiti, au SW du Nigeria, en avril–juin 2017. Le nid a été construit principalement par le mâle mais les deux parents ont nourri la nichée. Un juvénile a été vu en train d'être nourri par les adultes 12 jours après qu'a été observée la dernière activité au nid. Les arbres indigènes qui poussent sur les terres cultivées peuvent être des sites importants de reproduction pour cette espèce menacée endémique de la région, et les communautés locales doivent y être davantage sensibilisées.

Introduction

The globally Endangered Ibadan Malimbe *Malimbus ibadanensis* is restricted to a small area in SW Nigeria (Elgood *et al.* 1994). A survey in its historical range estimated that only *c.* 2500 individuals remained, the low number being attributed to range contraction due to forest fragmentation (Manu *et al.* 2005a). However, a later sighting of this species outside its then known range suggested a need for conservation efforts beyond this area (Ajagbe *et al.* 2009). In addition, although there is some information about its breeding, no successful breeding attempt has ever been documented, indicating that additional studies were needed (Manu *et al.* 2005b). We present here the first report of successful breeding of the Ibadan Malimbe, at some distance from its previously reported localities.

Methods

We monitored one nest, covering the period from building to post-fledging, at intervals of *c.* 5 days from 15 Apr to 4 June, for a total of 30 h of focal observation during which we maintained a minimum distance of 30 m between the investigators and the nest tree. We recorded the vegetation within a 50 x 50 m quadrat around the nest site, covering the area where most activities (collection of nest materials, courtship display, resting, scanning and preening) were observed. Within the quadrat we identified, counted and measured the height (with a Nikon Forestry Pro Laser Rangefinder) and diameter at breast height (DBH) of trees > 2 m in height. We also recorded other bird species seen or heard within the quadrat, in case of interactions with the Ibadan Malimbés and their nest (unpubl. data). All error measures presented are SD.

Observations

We first sighted a pair of Ibadan Malimbés in farmland near Agbado Ekiti (7.6030°N, 5.5280°E, *c.* 411 m altitude; Fig. 1) on the cloudy and cool morning of 15 Apr 2017, at 11h00. The male was building a nest on an *Antiaris toxicaria* tree, whose measurements, along with those of other trees recorded in the quadrat around the nest tree, are given in Table 1. The ground vegetation within this area was mainly Cassava *Manihot esculenta* and weeds.

The nest (Fig. 2) was built mainly by the male using live tendrils of climbing plants. It was placed on the lowest branch of the tree at 7.1 m above ground level and was similar in structure to that described by Manu *et al.* (2005b). We could not ascertain the number of days it took to build the nest as it was near completion when first observed. Nevertheless, we monitored the remaining stage of nest construction for 8 h on two days: the male brought nest materials 40 times between 11h00 and 15h00

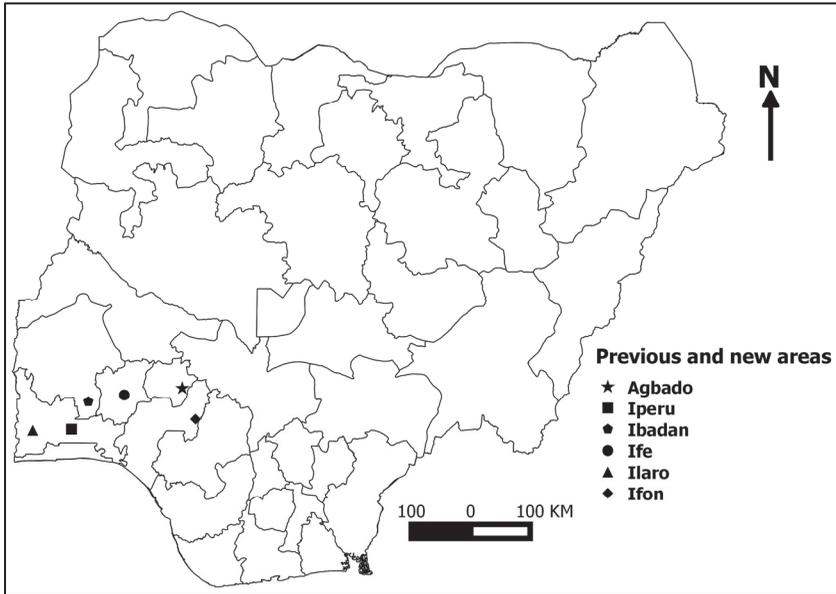


Figure 1. Location of the new sighting of the Ibadan Malimbe (the star) in relation to previously known areas.

on 15 April (10 times/h) and 58 times between 7h00 and 11h00 on 22 April (14.5 times/h), giving special attention to the elongated spout, the last part of the nest to be built. During nest construction, we saw the female enter the nest only once, when it spent 1 min. inside before returning to an Oil Palm *Elaeis guineensis* (12 m tall, 20 m from the nest tree) from where it scanned around. Nesting on the same tree were Red-headed Malimbe *Malimbus rubricollis* and Yellow-mantled Weaver *Ploceus tricolor*; this association has been reported in a previous study (Manu *et al.* 2005b). Unlike the

Table 1. Tree species recorded within a 50 x 50 m quadrat around the nest tree.

	Status	Number	Height (m)	DBH (m)
<i>Antiaris toxicaria</i>	Native	1	14.8	0.46
<i>Elaeis guineensis</i>	Native	10	15 ± 4.6	0.28 ± 0.3
<i>Gliricidia sepium</i>	Introduced	6	10 ± 4.2	0.12 ± 0.02
<i>Lonchocarpus sericeus</i>	Native	3	18 ± 1	0.32 ± 0.05
<i>Pouteria alnifolia</i>	Native	1	13	0.43
<i>Senna siamea</i>	Introduced	8	9 ± 3	0.18 ± 0.04
Total		31	13.5 ± 12.8	0.29 ± 0.41



Figure 2. Nest of Ibadan Malimbe, 22 Apr 2017 (photo: AGA).

Red-headed Malimbe, which placed its nest in the middle of the tree canopy, the nest of the Ibadan Malimbe was positioned towards the tip of the lowest branch, *c.* 4 m away from the nest of the Red-headed Malimbe.

The male was seen chasing the female (perhaps for mating) on two occasions on 22 Apr. On 29 Apr, the female spent *c.* 2 h in the nest before going out and returning after 2 min.. During this period, the male vigorously guarded the entrance of the nest, calling actively, and chasing and attacking intruding Yellow-mantled Weavers, one of which lost a wing feather during one of the attacks. This behaviour had not been observed before that, during nest building, which suggested it might be associated with incubation. The male did not chase nor attack the Red-headed Malimbe despite the fact that it came close to the nest of the Ibadan Malimbe several times.

Hatching was successful, as both parents were observed bringing food to the nest on 13 May. Monitoring for a total of 16 h between 7h00 and 13h00 on 13, 20 and 23 May showed that food was brought for at least 11 days. Provisioning by the male was more frequent (129 times) than by the female (66 times). The main food was green insect larvae (Fig. 3). Food provisioning declined gradually, with the male providing food 58, 42 and 29 times and the female 28, 20 and 18 times on the three days respectively. No activity was observed around the nest site the next day (24 May); therefore we started looking for the fledglings, searching within a 4-km radius of the nest site between 24 May and 4 June. On 4 June, we sighted a juvenile female in a tree canopy *c.* 200 m away from the nest. It was being fed by two adults and was restless. The parents raised the alarm immediately they noticed us, so we did not approach to



Figure 3. Male Ibadan Malimbe providing insect larvae for nestling, 13 May 2017 (photo: AGA).

take photographs as we wanted to minimize disturbance. Nevertheless, we observed that the juvenile had dark brown plumage with dull red on the nape, crown and breast, a pale brown mask and bill, and resembled overall the colouration described by Borrow & Demey (2010). Thereafter, we inspected the nest and nest tree in order to know if it would be used for further breeding or roosting. Surprisingly, the nest was already derelict and about to fall off the tree. This suggests that the Ibadan Malimbe uses its nest for breeding only once and abandons it afterward.

Discussion

This seems to be the first successful breeding of the Ibadan Malimbe to be documented. Although our observations do not permit precision, they suggest that the incubation period was about 14 days, the nestling period between 11 and 14 days and

(assuming the family we found on 4 June to be the same), the period during which fledglings remained dependent was at least 11 days.

In previous studies, competition with other bird species, such as the aggressively territorial Fork-tailed Drongo *Dicrurus adsimilis*, for nest sites, nest materials and food, perhaps exacerbated by habitat loss, was a probable cause of observed nest failures (Manu 2001, Manu *et al.* 2005b). During our study no Fork-tailed Drongo nested close to the Ibadan Malimbe, though one was sighted *c.* 100 m away. Furthermore, our observations showed that nest materials and food seemed plentiful, as both were provided regularly at short intervals. The observation that food provisioning rate to the nestlings declined towards fledging resembled what has been previously observed for Splendid Sunbird *Cinnyris coccinigastrus* (Adeyanju *et al.* 2013).

All reported breeding attempts of Ibadan Malimbe have been in native trees, including *Ceiba pentandra* and *Celtis zenkeri* (Manu *et al.* 2005b). In April 2015, an Ibadan Malimbe nest was located on a *Daniellia ogea* tree within the campus of the International Institute of Tropical Agriculture, Ibadan, but it was probably predated by Yellow-mantled Weavers and was subsequently abandoned by the breeding pair (Bown 2015). These observations suggest that native tree species may be vital for the breeding success of the Ibadan Malimbe. While reducing habitat loss in natural areas is crucial, the restoration of degraded habitats with native tree species, such as those found in our study, may also be important for its conservation. As the Ibadan Malimbe occurs in community forests and farmlands (Manu *et al.* 2005a), it is important to raise public awareness about it. In this case we discussed with the landowners around the nest site and they promised to protect the area, especially the nest tree against illegal logging.

Although located between previously known sites (Fig. 1), our sighting of the Ibadan Malimbe in Agbado Ekiti, *c.* 80 km from the closest of them at Ifon and further north than any other, suggests the need for a thorough survey of the entire southwest of Nigeria to define more clearly the breeding distribution of this Endangered species.

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