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BREEDING OF BLACK-HEADED BEE-EATERS IN NIGERIA

by M. Dyer, C. H. Fry and J. A. Hendrick

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The Black-headed Bee-eater *Merops* (*Bombylonax*) *breweri* is one of the least known members of its family. No nest has previously been reported, nor field notes published other than by Chapin (1939). West of the Congo basin the species has been discovered at only two locations. In Ghana a pair and a singleton a few km away were seen in 1952 near Mankrong on the Affram River at 06°41'N 00°19'W, an area now inundated by Lake Volta (M. J. Horwood, pers. comm. to C.H.F.). In Nigeria one was collected in Mamu Forest (06°10'N 07°10'E) in 1953 and another, undated, nearby at Idah (07°07'N 06°45'E) on the lower Niger (Elgood 1982).

Black-headed Bee-eaters were re-discovered in this same region of southern Nigeria in January 1980 by J.A.H. (Hendrick 1980), as noticed with an accompanying photograph in *Malimbus* 3 (1981): 51. A pair, later with a third adult which may have been a helper as in several other species of *Merops* (Fry, in press), was found at a nest burrow near Ugbabo (07°24'N 07°00'E) and in 1981 J.A.H. found a nest at Alade (07°21'N 07°11'E) and two more at Elubi (07°35'N 07°26'E). The five Nigerian localities embrace an area of less than 25 x 100 km, centred on the Igalaland plateau at 300-350 m altitude, over 850 km from the closest point (Gabon) in the main range of the species in the Congo basin.

Activity at the 1980 nest was studied by Hendrick (1980) and M.D. and the Elubi nests were watched by M.D. and J.A.H. and kept under continuous observation by C.H.F. in a hide from 23 to 26 March. The following account supplements that of Hendrick (*loc. cit.*).

Habitat

Igalaland is a mosaic of farmland, Oil-Palm *Elaeis guineensis* forest and immature forest with patches of disturbed mature forest rooted in dystric nitrosols and orthic acrisols (Anon 1980). Forest with continuous canopy is generally absent in the area, and the appearance of the habitat is that of forest/savanna ecotone. Patches of cultivation are fringed with the tall annual weed *Eupatorium odoratum*. *M. breweri* inhabits degraded palm forest (Dawtrey 1979) characterized by Oil-Palm plantations with scattered stands of forest dominated by *Chlorophora excelsor*, *Albizia adianthifolia* and *Irvingia gabonensis*. The birds foraged in open secondary growth around cultivated fields, and in plantations, thickets and disturbed woods. Nest burrows were in a heap of soft lateritic soil dumped from a roadside drainage ditch; roadside banks of hard sand and compacted sandy laterite; and a hoed sandy-loam field cleared of vegetation except for scattered cassava shrubs and a number of tall dead trees, surrounded by much-disturbed woods.

Foraging Behaviour

Hunting was mainly from low perches, within 4 m of the ground, either a thin horizontal limb over the roadside or other place with fairly open airspace, or inside a thicket with very restricted room for manoeuvre. From the former perches prey-capture was typically meropid in execution, a short, quite rapid, gliding flight declining towards airborne prey, which was taken back to the perch for vigorous beating. In pursuit of prey the very round wings of this species make it look unlike the pointed-winged savanna bee-eaters. In restricted airspace *M. breweri* had a more flapping, less sailing pursuit flight, with short adroit chases through the vegetation. Most prey was airborne, but one bird at the Ugbabo nest sometimes hunted like a drongo, swooping down to snatch an insect from vegetation a few cm above ground level.

Food

Items taken into nests were mainly hawkmoths and cicadas, with fewer butterflies and beetles (and possibly grubs). Nest litter included carpenter-bees *Xylocopa* sp. and cetoniine beetles *Plaesiorrhina recurva* in abundance, also worker Honeybees *Apis mellifera*, wasps *Belanogaster* sp. (Vespidae), *Chlorion maxillosum* and *Philanthus* sp. (Sphecidae) and ruteline beetles (M. Walters pers. comm. to J.A.H.). 66 insects identified from pellet remains in another nest comprised 16 worker Honey-bees, 10 other Apidae of 10 species, 2 *Philanthus* and 4 other sphecids, 1 pompilid wasp, 17 vespids of five species, 3 alate ants, 1 acridid grasshopper, 1 cicada, and 11 beetles of five species I (including cetoniines and coprines) (det. C.H.F.).

Attendance at Nests

The disparity in size of the two eggs photographed by Hendrick (1980) strongly suggests that one was a honeyguide's; if this nest had been parasitized that might be the reason for its failure soon after the evident hatching (and disappearance) of a third egg. The Alade nest was deserted after one of the birds had been caught by a boy and kept in captivity until it died (the specimen was obtained and presented to the British Museum); the Elubi nests both held young nestlings when discovered. On 24 March three nestlings were extracted from one nest (and returned there after examination, when adults immediately resumed feeding them) - they were about 10-14 days old and weighed 34, 40 and 43 g. The dead, starved adult weighed 41.5 g and an adult netted on 26 March was 54 g.

The three adults at the Ugbabo nest often perched together above the burrow but because of its location in a road-cut, the frequent passage of vehicles and pedestrians prevented them from feeding the young regularly. Although it was suspected that all three were entering the nest with food, it could not be ascertained that the third bird was definitely a helper.

Each Elubi nest was attended by its parents only; evidently neither pair had a helper. All four were individually identifiable by streamer length (which was 83 mm longer than the tail in the bird netted), and none of them entered the other nest despite its proximity, only 7 m away on the opposite side of a metalled minor road. Some motor traffic, and considerable foot traffic on market days, did not disturb them unduly and the nest feeding rate between 0800 and 1700 h averaged 6/h.

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