

freely when asked, and an authority in his chosen field. His memory as a cheery friend, and an unassuming and congenial colleague may fade. His papers, even the monumental "Birds of the Americas," will go out of date. But the Conover collection of game birds will be consulted and studied through the years by others, and his efforts in bringing them together will be a hidden part of much future scientific work.

Box N., Winnetka, Illinois, and Chicago Natural History Museum, Chicago, Illinois, August 11, 1950.

THE NESTS AND EGGS OF *MESOENAS UNICOLOR* OF MADAGASCAR

BY A. L. RAND

THE special interest attached to this bird is that it is one of the three species (the other two are *Mesoenas variegata* and *Monias benschi*) included in the peculiar Madagascar family Mesoenatidae. Lowe (1924: 1151) suggested that this family of small, generalized and primitive birds might merit having a separate order erected for them, but he recognized gruiform relationships, and currently it is placed usually as a family of the Gruiformes.

The nest, but not the eggs of *Mesoenas unicolor*, was described by Milne Edwards and Grandidier (1879: 603) under the name *Mesites variegata* and somewhat differently by Lavauden (1931: 395-400).

When Mr. Harry Hoogstraal was in Madagascar in 1948 with the Blood Survey Group, Office of Naval Research, United States Navy, his party found two nests of *Mesoenas unicolor* and collected the eggs and the parent birds. These have come to the Chicago Natural History Museum along with Mr. Hoogstraal's notes on the nests; they permit certain additions to the knowledge concerning this bird. These nests were found at Bemangidy, Poste Mananteina, Fort Dauphin district in the extreme southeastern part of the island. Bemangidy is 72 kilometers north of Fort Dauphin and is about five miles west of the Indian Ocean. The country is hilly and apparently was originally covered with rain forest, though part of this is now being cut down. Both nests were in the rain forest where a thin cover of shrubs and few herbs grew below the trees. The nests were about a half-mile apart. Each nest was in a fork of a sloping tree, one about three feet above the ground, the other almost six feet above the ground. In each case the lower trunk of the tree had a number of low branches on it, on which it might have been possible for the bird to hop up to the nest.

The two nests were platforms of slender, interlaced twigs, four or five deep, with sides of one or two slightly larger twigs and were lined with a very few, long-petioled leaves, a few lengths of a grass-like plant, and in one a bit of moss. One nest measured 220 millimeters across, the other 245. Each of the two nests contained a single egg. The eggs are nearly bluntly oval in shape; one egg has the ends about the same shape, the other egg has one end slightly more tapered than the other; the texture is fine, with a slight gloss on one egg, a moderate gloss on the other; the ground color is dull whitish, lightly tinged greenish-grey in one egg, buffy-gray in the other; the markings are confined to half of the egg, tending to form a wreath about one end, and are deep chocolate brown or secondary grays overlaid with shell color; the markings are in the form of a few big irregular spots on one egg, and sparse spots and dots; in the other egg, they are rather densely spaced small spots and dots. The eggs, both cracked specimens, measure 45 by 30 and 43 by 30.5 millimeters.

In both cases the incubating birds, which were females, were on the nest. They did not move when approached, and both were easily captured. One nest was found on November 24, the other on December 25, 1948. The natives who saw these specimens referred to them as rails, but said they had not seen this particular kind before. Both birds had lice amongst the feathers, and microfilaria and trypanosomes in the blood. Mr. Hoogstraal will report on this aspect of the birds in connection with other work.

Mesoenas unicolor has been considered a bird of the central part of the forests of eastern Madagascar (Rand, 1936: 364) and many of the skins in museums come from the forest of Sianaka. The present specimens, two females (wing, 118 and 120 mm.) compared with a male and a female from the forest of Sianaka (wing: male 116; female 118) differ only slightly from the Sianaka female in having the upper parts generally slightly deeper brown, and the top of the head somewhat darker; one has the upper breast somewhat brighter red-brown. The same differences are apparent in comparing the above two females with the Sianaka male, except that there is little difference in head color.

With the above factual data it is interesting to make some comparisons on various biological aspects of the family using the work of: Milne Edwards and Grandidier (1879: 603) who described the habits of *Mesoenas unicolor* under the name of *Mesites variegata*; Lavauden, (1931: 395-400) who described the nest of *Mesoenas variegata* and *Monias benschi* and summarized what we know of the biology of the family; Lavauden (1932: 632-633) where he added a few more details;

and Rand (1936: 364–368) who described the habits of *Monias benschi* and recorded two specimens of *Mesoenas variegata*.

All three species are ground birds which do not fly or fly poorly; probably all eat insects and fruit, as does *Monias benschi*. They are all geographical representatives but so different that their classification as three species in two genera is well founded. *M. unicolor* is a bird of the rain forests of the eastern part of the island (Oriental Province); *M. variegata* occurs in the scattered areas of dry forest in the western and extreme northern part of the island (Occidental Province, both Western and Northern Savanna Districts); and *M. benschi* lives in low brush forests of the southwest (Suddesert Province). Though *Monias benschi*, at least, may be very common at certain places (it goes in bands, while *Mesoenas* is found solitary or in pairs) the distribution of all three species seems to be very local, judging by the many collecting stations where the species have not been found.

The nest of *M. unicolor* was described by Milne Edwards and Grandidier (1879: 603) as on the ground, but Lavauden (1931: 398) said it was in a bush, and this accords with our new information. Apparently all three species make similar nests—flat, rather scanty structures of sticks with scant lining placed within a meter or two of the ground. Presumably these nests can be reached by the birds, without flying, by hopping from branch to branch or along the trunk. The number of eggs for *M. variegata* was given by Lavauden (1931: 399) as two to three in a clutch, and he collected one set of two. For *M. benschi* the number of eggs was given by Lavauden as two, and he collected one set. However, Rand (1936: 367) gave the clutch size for *M. benschi* as one egg, and this new data for *M. unicolor* also shows a clutch size of one. We can assume one to three eggs per clutch is the variation in the family. The eggs are apparently similar in the three species, in size varying from 33 by 26 millimeters for *M. variegata* (Lavauden, 1931: 397) to 45 by 30 millimeters for *M. unicolor*, with those of *M. benschi* intermediate in size. The young of all are precocial. In *M. variegata* and *unicolor*, they are covered with blackish down, like a rail (Lavauden); in *M. benschi*, they are brown and whitish. Their method of reaching the ground is not known.

Rand (1936: 367) had indicated that in *Monias benschi* there is a preponderance of males, and that the males incubate the eggs and care for the young. As Hoogstraal sexed the two incubating *Mesoenas unicolor* as females, this does not appear to apply to this species.

The dates of the two nests of *M. unicolor*, November and December, agree in general with the October nesting dates of *M. variegata*, (Lavauden, 1932: 632), and the December breeding period of *M. benschi*,

Rand (1936: 366) and Lavauden (1932: 633). This falls in the normal breeding period for most Madagascar birds, in the rainy season.

Mesoenas unicolor is said to be taboo to some natives, and the taboo extends even to uttering its native name Roatolo. Hoogstraal found no evidence for this in the Fort Dauphin area, and there seems to be no such taboo connected with *M. variegata* (called Fangadehovv) or *M. benschi* (called Nak, Naka or Nahka by the natives).

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Chicago Natural History Museum, Chicago, Illinois, September 1, 1949.