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First record of *Mabuya comorensis* (Reptilia: Scincidae) for the Madagascan fauna, with notes on the reptile fauna of the offshore island Nosy Tanikely

**ABSTRACT**

*Mabuya comorensis* is recorded for the first time for Madagascar. Specimens were observed on the island Nosy Tanikely, south of Nosy Be, northern Madagascar. The species was most probably introduced from the Comoro Islands and exhibits greatest similarities to *M. comorensis* from Mohéli (Comores). At Nosy Tanikely the species is very abundant and occurs in sympathy with the likewise abundant *Zonosaurus madagascariensis*. Composition and origin of the reptile fauna of Nosy Tanikely are discussed.

**INTRODUCTION**

The lygosomine skink genus *Mabuya* Fitzinger, 1826 includes about 100 species with a nearly cosmopolitan distribution. According to Angel (1942) and Blanc (1971) three species of *Mabuya* were considered to occur on the Comoros: *M. comorensis* (Peters, 1854), *M. maculilabris* (Gray, 1845) and *M. striata* (Peters, 1844). However, in 1982, Brygoo reviewed the *Mabuya* species from the islands in the western Indian ocean (Comoros, Europa Island and Seychelles) and concluded that *M. comorensis* is probably the only *Mabuya* species on the Comoro Islands, whereas *M. maculilabris* and *M. striata* occur in continental Africa. Brygoo (1982) further investigated the two species from the Seychelles (*M. sechellenis* and *M. wrightii*) and elevated the taxon from Europa Island (*M. comorensis infradivisa*) from subspecies to species rank. In a subsequent paper, Brygoo (1983) studied the *Mabuya* species from Madagascar. He recognized five valid

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species (M. gravenhorstii, M. elegans, M. madagascariensis, M. aureopunctata, M. boettigeri) and described the subspecies Mahuya elegans delphinensis. The status of M. betsilena, only known by a single type specimen with a dubious locality, remained uncertain. Recently, two new Mahuya species have been described from southern Madagascar: M. vato by Nussbaum & Raxworthy (1994) and M. dimasi by Nussbaum & Raxworthy (1995). These authors recognized eight valid Mahuya species for Madagascar, which they classified into two groups: the aureopunctata group (M. aureopunctata, M. betsilena, M. boettigeri, M. dimasi, and M. vato) characterized by a rectangular subocular scale, and the elegans group (M. elegans, M. gravenhorstii, and M. madagascariensis) characterized by a trapezoidal subocular scale (Nussbaum & Raxworthy 1995). However, these authors did not consider a Mahuya record from Nosy Tanikely which was identified as Mahuya maculilabris and accompanied by a photograph (Köhler 1993).

The figured specimen was apparently different from all known Madagascan Mahuya species and briefly discussed by Glaw & Vences (1994), who provided a photograph of this form (as Mahuya sp.; Fig. 483) which was made by Bill Lowe on Nosy Tanikely in the early 1990s. During a recent visit to Nosy Tanikely in November 1995, J. Köhler and J. Steinbrecher had the opportunity to make several field observations on this population.

The small offshore island Nosy Tanikely is located at the northwestern coast of Madagascar between Nosy Be and the mainland (Fig. 1). Nearest distance to Nosy Be is ca. 8 km, to Nosy Komba ca. 9 km, and approximately 13 km to the Madagascan mainland. Square dimension of Nosy Tanikely is less than 30 ha. Highest elevation is 47 metres above sea level. The surface is covered by bushy vegetation and low forest. Some small areas within the forest were used for banana planting. Fresh waters could not be observed in November 1995. The sandy shore is partly interrupted by large rocks.

In this paper we will discuss the taxonomic status of the Mahuya population from Nosy Tanikely.


RESULTS AND DISCUSSION

IDENTITY OF THE MAHYUA POPULATION AT NOSY TANIKELY

The specimens from Nosy Tanikely (ZFMK 62190 - 62192) differ from all other known Madagascan Mahuya species with a rectangular subocular scale, when compared with the data given by Brygoo (1982) and Nussbaum & Raxworthy (1995): from M. vato (max. SVL 55 mm) and M. dimasi (max. SVL 55 mm) by much larger size (see Tab. 1), from M. boettigeri and M. aureopunctata by higher number of supraoculars (6 versus 3 - 4), and from M. betsilena by a lower number of ventrals (60-61 versus 73). From all these five species they are also distinguished by colouration.

The large Seychelles species M. wrightii differs from the Nosy Tanikely specimens by a larger number of scales around midbody and larger number of ventrals, and the other Seychelles species M. sechellensis by smaller SVL, a higher number of ventrals and colouration (Tab. 1). M. infratrimaculata from Europa Island differs by the lower number of supraocular scales (4 versus 6). The African M. maculilabris is distinguished by the lower number of supraoculars (5 versus 6), lower number of lamellae under the fourth toe (15 - 20 versus 23), and by smaller size.

Table 1 shows that morphometric and meristic data of the specimens from Nosy Tanikely are within the range of Mahuya congorensis as given by Brygoo (1982). The data of Brygoo (1982) were confirmed by our investigation on M. congorensis specimens from the ZFMK (Tab. 1). We therefore conclude, that the Nosy Tanikely population belongs to the species M. congorensis, which is hereby recorded for the first time for the Malagasy fauna.

As is obvious from the table, M. congorensis from Nosy Tanikely is most
similar to *M. comorensis* from Mohéli. This is further confirmed by the nearly identical colouration of specimens from both localities (see Fig. 2). Thus, it can be assumed that the population of Nosy Tanikely was probably introduced from Mohéli.

**ECOLOGICAL NOTE:** *Malagasy comorensis* (Figs. 3 and 4) was extremely abundant in all habitat types (forest, banana plantation, rocky shore) at Nosy Tanikely. Mostly, specimens were observed on the ground in the leaf litter or on tree roots, and less frequently on vertical trunks. They always occurred in syntopy with large numbers of *Zonosaurus madagascareensis*, except for vegetation-free parts of the shore. No interactions between these two species could be recognized, whereas aggressive behaviour between males of *M. comorensis* was commonly observed. A high percentage of the observed specimens had regenerated tails. In juveniles and subadults, the lateral bright greenish spots were a little bit more distinct than in adults.

**COMPOSITION AND ORIGIN OF THE REPTILE FAUNA OF NOSY TANILEKLY**

We are not aware of any amphibian record from Nosy Tanikely. The only available reptile records from that island were provided by Koller (1993) who mentioned the following species: *Bluescatastus (= Homophilus) buoni, Phelsuma laticeps*, *Phelsuma alboides*, *Malagasy grevyi*, *Malagasy maculatus* (here identified as *M. comorensis*). Beside *M. comorensis* the following species were observed in November 1995: *Echidna crassicauda*, *Zonosaurus madagascareensis*, *Cryptoblepharon buoni*, *Furcifer pardalis*, and *Liophidium raquetum*.

It is remarkable that the records of Koller (1993) and our records all concern different species except for the large *Malagasy comorensis*. However, it seems possible that Koller's record of *Homophilus buoni* actually belongs to *Heni-

![Fig. 2. Dorsal view of *Malagasy comorensis* from Nosy Tanikely, Madagascar (ZFMK 62190, above) and from Mohéli, Comoros (ZFMK 62128, below).](image-url)
dactylus (see picture in Koller 1993:94), which are known to be very large at Nosy Be, and therefore probably also at Nosy Tanikely (see Glaw & Vences 1994; the specific identity of the Madagascan Hemidactylus populations has not yet been sufficiently investigated).

Nevertheless, with at least nine species the small island Nosy Tanikely harbours a relatively high diversity of reptiles. This diversity may partly be the result of active and/or passive introductions, especially since the island is frequently visited by tourists. While active introduction for touristic purposes could be expected for the colourful diurnal Phelsuma species and Furcifer pardalis, it seems improbable for Mabuya conorensis. Date and mode of the assumed introduction remain obscure. However, we strongly assume that this species did not reach Nosy Tanikely by natural rafting. The reasons are as follows: the distance between Nosy Tanikely and the nearest Comoro Island Mayotte is about 240 km and the distance between Nosy Tanikely and Mohéli is about 480 km. With less than 30 ha, Nosy Tanikely is an extremely small island, making the arrival of specimens over such large distances very improbable. A drift from the Comoros to Nosy Be or the Madagascar mainland and from there to Nosy Tanikely would be more probable, but until now M. conorensis was never noticed at Madagascar or Nosy Be and currently there is no reason to assume that this species occurs (or once occurred) there.

On the other hand it seems not unlikely that M. conorensis could extend its range to Nosy Be, Nosy Komba or the Madagascar mainland by passive transport, considering its high abundance at Nosy Tanikely and the frequent traffic to this island. Such a possible range extension could constitute a significant threat to the endemic fauna.

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