THE ENIGMATIC ROUND ISLAND BURROWING BOA (*BOLYERIA MULTOCARINATA*): SURVIVAL IN THE WILD REMAINS UNCONFIRMED

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ABSTRACT

The Round Island Burrowing Boa of the monotypic genus *Bolyeria* was sighted only four times in the 20th century, in its only known habitat, the small Round Island, north of Mauritius in the Indian Ocean. The island is characterised with endemic reptiles and a tropical flora degraded due to the introduction of domestic herbivores. Only seven preserved Burrowing Boa specimens are known as museum material, and knowledge is limited about the biology and ecology of this snake in the wild. The last live specimen was encountered in 1974, and to reveal evidence about its survival or extinction, a search project, funded by Fauna & Flora International, was carried out in 2001. Although an intensive search programme was set out and carried through, no surviving specimens or signs of the snake could be revealed.

INTRODUCTION

The extremely rare Round Island Burrowing Boa *Bolyeria multocarinata* (Boie, 1827) was sighted only four times in the 20th century. This snake, one of the only two species in its family Bolyeriidae, is known to live only on the small Round Island, north of Mauritius in the Indian Ocean. The island itself shows an unusually high degree of reptile endemism: both of its two snake species and 3 out of the 6 lizards living there now have their range exclusively on this 151 ha volcanic island (Vinson 1975, Owadally & Lambert 1988, Tonge 1990, Korsós & Trócsányi 2002). The hardwood forest was clear-cut as early as in in the 18th century, then introduced goats and rabbits continued to destroy native vegetation (Bullock 1977, Bullock & North 1984, North & Bullock 1986, North et al. 1994). Only a proportion of the

original palm savanna, characterised by two endemic palm species (*Latania loddigesii* and *Pandanus vandermeerschii*) has survived until now (Merton et al. 1989). A search project for *Bolyeria* was carried out in 2001 by our Hungarian team, funded by Fauna & Flora International, in order to gain evidence about the survival or extinction of the Burrowing Boa.

THE BURROWING BOA

The Burrowing Boa was described by Heinrich Boie, German herpetologist, in 1827, according to the followings (p. 513):

> *„Eryx*
> *In Paris findet sich annoch:*
> *Multocarinata Peron vom Port-Jackson, der turcica sehr nahe stehend. Schuppen sehr klein, rundlich, gekielt. Auf dem Kopfe 2 Scuta frontalia anteriora, die zusammen ein Herz bilden, und ein hinteres grosses. Zwischen den Augen 4 geich lange Schilder, von denen die mittleren schmal sind. Dann folgen Schuppen. Unten 2 Paar Rinnenschilder. Bildung der Schwanz- und Bauchschilder wie bei turcica. Oben braun, unten dunkler marmoriert."*

Altogether only seven specimens are known to be preserved as museum material, including the holotype in the Musee National d'Histoire Naturelle, Paris, three in The Natural History Museum, London, and one in the Mauritius Institute, Port Louis, Mauritius. Recently, an additional specimen was identified in the herpetological collection of the Museum für Naturkunde, Berlin (Bauer & Günther 2004). One more stuffed specimen has been mentioned in the literature (Vinson 1975), but its location is unknown. Knowledge of the biology and ecology of this snake in the wild is limited. Altogether four reliable sightings were reported during the 20th century (Vinson 1953, 1975). These date from 1937, 1953, 1963 and 1974, and describe a medium-sized (ca. 80 cm) snake with a shovel-shaped head and hence possibly with burrowing habit. The last live specimen was encountered in 1974 during the Edinburgh Expedition to Round Island, on the rocky surface of the western slope (Bullock & North 1975).

BOLYERIA EXPEDITION

The joint expedition of the Mauritian conservation authority (National Parks and Conservation Service), the Mauritian Wildlife Fund, and the Hungarian research team took place between 24 April–4 May 2001. A total of 15 locations were selected for distributing the traps. We put 20 traps inside or near a shaded, well-vegetated gully (Fig. 1), whereas the remaining 80 were taken to the palm savanna on the western slopes of the island and were organised in 10 groups (Fig. 2).

Fig. 1. View of "Camp Gully"on Round Island: supposed Burrowing Boa habitat.

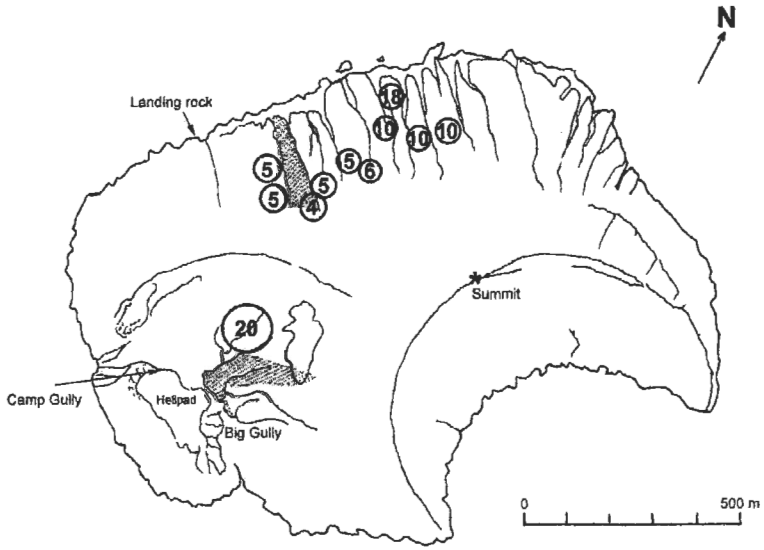

Fig. 2. Location of trap sites for *Bolyeria multocarinata* (figures in the circles indicate trap numbers at the particular locations).

The traps measured 26 cm x 14 cm x 14 cm, and a wire mesh funnel was attached to one end. The trap design was generated from the basic idea of commercial snake traps and box-type small mammal live traps, and was adapted to the case of a soil-dwelling snake. A mixture of moist soil and litter was scattered inside each box, and they were covered or disguised with plant material or loose soil (Fig. 3).

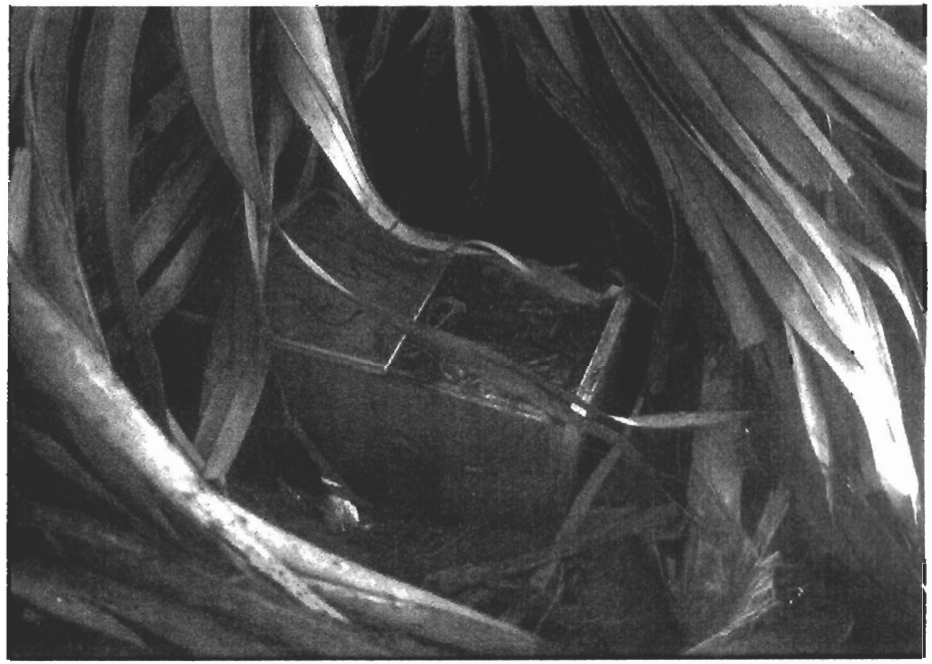

Fig. 3. Trapbox for *Bolyeria multocarinata* set up between the leaves and roots of a *Latania* palm.

Daily checkings covered approximately half of the traps, so eventually each trap was checked every other day. Checking walks were commenced usually in the morning hours, and were asociated with continuous looking for hints of Burrowing Boa presence in and around the following physical formations: used burrows in solid soil, subsurface tunnels in loose soil, openings of hollows under Latanias and Pandanuses, crevices between and below rock masses, hollow trunks of dead palm trees. Boulders, rock pieces, logs and palmtree trunks were lifted or turned over to reveal any reptile hiding underneath it.

It is known about several snake species in the tropics that they tend to occupy underground burrows where they may stay for a considerable amount of time

between feedings. It is unkn f the Round Island Burrowing Boa has such a habit, nevertheless the abundance of natural subsurface earth cavities – i. e. burrows excavated by shearwaters – and the fact that they are abandoned by the birds for a considerable proportion of the year have been facts suggesting the likelihood of reptiles (preferably snakes) occupying them at least temporarily.

In selected places where there were high number of shearwater-burrows in the neighbourhood of palm patches (e.g. in the lower section of Camp Gully), we excavated the burrows as well as their entrance and connecting tunnels using hand shovels. We did not deal, however, with burrows in the extensive shearwater colonies (e.g. upper section of the Old Camp Gully, SE of the ridge line), because these were found in totally open areas without any palms, and were heavily grown over by high associations of invasive grasses and pioneer weeds.

CONCLUSIONS

Despite an intensive search programme applying various methods (traps, day and night search, digging), unfortunately no signs of any surviving specimens of the Round Island Burrowing Boa could be revealed. Based on our results and the regrettable history of this snake, the presumption that *Bolyeria multocarinata* is extinct from Round Island and the entire world, is becoming increasingly realistic. This is in accordance with the literal categorization by Baillie & Groombridge (1996).

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