

REPTILE OBSERVATIONS ON THE MARIA ISLANDS: TWO SATELLITE ISLANDS OF ST. LUCIA (WEST INDIES)

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THE following report details observations on three of eight species of reptile found on Maria Island Major during a vacation to St. Lucia in December 1998. The visit was led by a registered guide from the St. Lucia National Trust.

The Lesser Antilles island of St. Lucia is one of more than a dozen that form an arc of islands stretching northward from South America. Trinidad and Tobago are to the South and the Virgin Islands to the North, separated by the Anegada passage. The uninhabited Maria Islands (Maria Major and Maria Minor) are located on the southeastern tip of St. Lucia. They lie approximately 1 km from the mainland separated by shallow waters with coral reefs and beds of seagrass. Combined, they are less than 12 ha and despite such size are home to a diversity of habitats and herpetofauna. The islands are a herpetological jewel as they are home to the world's rarest serpent (McFarlan, 1990), the endangered *Liophis ornatus* (IUCN, 2000), and one of the rarest lizards *Cnemidophorus vanzoi*.

The islands were made a nature reserve by the St. Lucia National Trust in 1982. They are afforded much protection from the trust by the provision and restriction of guided access for the general public. The St. Lucia National Trust and St. Lucia Forestry Department manage the reserve and it is highly respected for its herpetofauna. The size of the islands and their tiny population of reptile inhabitants renders the land susceptible to stochastic events (e.g. natural environmental change, disasters, and introduction of predatory or competitive species). Several conservation measures are already in place. Captive breeding studies at the Durrell Wildlife Conservation Trust have led to translocation of *C. vanzoi* to another suitable habitat, Praslin Island (K. Buley, pers.

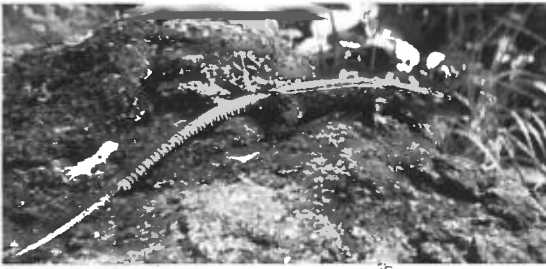
comm.). The island was made safe by eradication of Common Rats (*Rattus rattus*), a natural predator of the whiptails (Johnston et al., 1994).

The disappearance of *L. ornatus* and *C. vanzoi* from mainland St. Lucia is discussed in detail by Corke (1987). Mongoose are likely to be the leading cause of mainland decline for *L. ornatus*, although it is possible that the snake also suffered from human culling during a bounty scheme to remove venomous snakes that started in 1869. The same system was responsible for the demise of *Clelia errabunda*, the natural predator of the venomous *Bothrops caribbaeus* (Underwood, 1995). It is believed that *C. vanzoi* was exterminated from the mainland by Mongoose introductions, also designed for the reduction of venomous species.

The West Indies are well known for their tropical wet and dry seasons that are often interrupted by unpredictable rainstorms. The Maria Islands receive less than 40 inches of rain per year (Geoghegan & Renard, 1985), although the amount of rainfall received depends mostly on the elevation of the island (Crother, 1999). The higher, more volcanic islands receive more than lower limestone islands. This difference in elevation and humidity is accompanied by changes in habitat. Higher volcanic rain forest in the Lesser Antilles can vary from Tropical Dry to Tropical Moist rain forest, whereas all the lowland islands (including both Marias) are classified as Tropical Dry Forest (Holdridge, 1967). The weather was clear for the trip and the morning temperature was 28° C. A change in weather occurred during the afternoon and a heavy tropical downpour of rain lasted for an hour after leaving the island. There were no pools found during the visit. The heavy downpour that occurred after leaving the island is



The Maria Islands. Photograph by author.



Cnemidophorus vanzoi. Photograph by author.

known to stimulate activity in *L. ornatus* (Corke, 1987; Sherriff et al., 1995). Perhaps the presence of temporary pools or changes in temperature and humidity may contribute to diurnal activity patterns in *L. ornatus*.

The Maria Islands' vegetation type varies according to the levels of exposure to wind and salt spray. On M. Major a mix of woodland, scrub, grassland, rock, and cacti can be found. The exposed areas of M. Major (notably the crown and western side) are covered by low growing grasses and Prickly Pear cacti. Other cacti locally named Syèj are also common and can grow as tall as 10 ft. The southern part of the island has a mix of cacti and woodland. The woodlands are dry forest containing White Cedar (locally called Pòyé), Turpentine Trees (Gonmyé) and twisted fig trees (Mapou). Close to 120 species of plant are present on the islands combined (Geoghegan & Renard, 1985). The northwestern side has a stretch of beach around 100 m long that forms the major

docking point for the island. The northeastern section has a mixed grassland that blends into scrub with increasing gradient. The northeast and eastern edges appear virtually inaccessible due to steep cliff faces. The south of the island has a sheer face. Maria Minor has mainly grass, a tiny west coast beach and rocky shoreline faces.

The islands have eight species of reptile. *Cnemidophorus vanzoi* and *Liophis ornatus* are endemic and found nowhere else naturally (Sheriff et al., 1995). *Anolis luciae* and *Sphaerodactylus microlepis* are endemic to St. Lucia and are present with *Gymnophthalmus pleiei leutkeni*, *Hemidactylus palaichthis*, *Leptotyphlops bilineata*, and *Thecadactylus rapicauda* on M. Major. Maria Minor is home to just three of the eight species; *C. vanzoi*, *H. palaichthis* and *G. p. leutkeni* (*G. p. leutkeni* recorded only recently for the first time on M. Minor by Buley et al., 1997).

Reptile literature for the islands is sparse but continually expanding and short reports or surveys could provide a simple aid for the long term monitoring of the islands' herpetofauna. A current useful checklist for West Indian herpetofauna is Schwartz & Henderson (1991; also 1988). More recent work by Sherriff et al. (1995) and Buley et al. (1997) provide updated and more detailed species lists, history, and morphometric data on the islands' reptile fauna. For the most extensive review of West Indian herpetology the reader is referred to Crother (1999). Historical systematics of the islands' herpetofauna is best investigated using a variety of different publications as not all papers contain full factual details on classification. Crother (1999) provides the most historical references but Corke (1987) and comments within Sherriff et al. (1995) and Buley et al. (1997) confirm, with additional detail, the ecological and geographical features differentiating the St. Lucia and Maria Island populations.

In the interests of conserving the well being of the reptile occupants, none were captured for any

close visual or morphological inspection. The standard techniques of VES (Crump & Scott, 1994) were used and only the designated, lightly trodden paths walked to respect the sensitivity of the islands' flora and fauna.

SPECIES OBSERVED

Anolis luciae, St. Lucia Anole (Creole name: Zandoli) (Garman, 1888).

St. Lucia Anoles were observed in the central wooded areas of M. Major. All specimens seen were adult and most approximately 12 - 15 cm full length. Males have a generally dull green to olive-brown colour and females are brown with a vertebral zigzag pattern. Both sexes also have a narrow white streak that runs from under the top of the front leg to halfway along the body (Sherriff et al., 1995). Males were observed performing territorial behaviour on perches and presented a yellowish dewlap.

Cnemidophorus vanzoi, St. Lucia Whiptail (Zandoli t ) (Baskin & Williams, 1966). On arrival at M. Major we were greeted by two basking females on a rock just a few metres back from the shoreline (Corke, 1987) previously encountered *C. vanzoi* frequenting the beach area). The lizards were actively foraging and took refuge upon disturbance. Refuge was only for a short time before the same individuals reappeared for more activity. Active foraging is a feature common to most teiids as they are opportunistic feeders (Corke, 1987; Pough et al., 1998). Most of the adults encountered were seen basking on the edges of existing paths on the island. If disturbed they too would retreat into grassy vegetation but would reappear after a few minutes. However, this timid display was not apparent in all the lizards. Some individuals showed almost no fear of human presence and were even curious to venture closer if the viewer were to remain static.

Adult males have a dark back with bright turquoise blue tails and yellow bellies. Some had white spots along the body flanks. Adult females are similar to young specimens and have brown backs with a light and dark longitudinal stripe running from behind the neck to the base of the

tail. The majority of the lizards and all juveniles were seen close to the crown of the island. Young males are not easily distinguishable from young females (Corke, 1987) so juveniles were not sexed.

Hemidactylus palaichthis, (Mabouya) (Kluge, 1969).

This rock gecko was encountered on the northeastern side of M. Major. Two specimens were found in small crevices of rock aptly suiting the camouflage of their lichen colour and pattern. The first individual was spotted at eye level. The species is generally a light grey colour with small dark flecks and a heavily tuberculate body (Sherriff et al., 1995). The specimens sandwiched in the crevice were darker in appearance but still had the characteristic size, appearance and features of the species. One specimen was unusually encountered at the very base of the shoreline docking point. It lay uncamouflaged on dark rock close to the washing surf. This species is endemic to St. Lucia. However, Corke (1992) discusses the ease of misidentification as *Hemidactylus mabouia*, a species common on mainland St. Lucia and other 'Lesser Antilles Islands'. A comparison of the two showed a difference in skin texture (more warty appearance on *H. palaichthis*) and differences in the arrangement of lamellae. It may be possible that *H. palaichthis* is present on other islands and remains undetected and presumed to be *H. mabouia*. This statement is also agreed by Sherriff et al. (1997).

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REFERENCES

- Buley, K.R., Prior, K.A., & Gibson, R.C. (1997). In search of the St. Lucia racer *Liophis ornatus*, with further observations on the reptile

- fauna of the Maria Islands, St. Lucia, West Indies. *Dodo, J. Wild. Preserv. Trust* **33**, 104-117.
- Corke, D. (1987). Reptile conservation on the Maria Islands (St. Lucia, West Indies). *Biol. Conserv.* **40**, 263-279.
- Corke, D. (1992). The status and conservation needs of the Windward Islands (West Indies), *Biol. Conserv.* **62**, 47-58.
- Crother, B. (1999). *Caribbean Amphibians and Reptiles*. London: Academic Press.
- Crump, M.L. & Scott, N.J. (1994). In *Measuring and Monitoring Biological Diversity, Standard Methods for Amphibians*, pp. 84-85. Heyer, W.R., Donnelly, M.A., McDiarmid, R.W., Hayek, L.C., and Foster, M. S. (Eds.). Washington: Smithsonian Institution Press.
- Geoghegan, T. & Renard, Y. (1985). Maria Islands Nature Reserve - *Interpretative guide, Castries, East Caribbean Natural Area Management Program (ECNAMP) and St. Lucia National Trust*. Barbados: Letchworth Press Ltd.
- Holdridge, L.R. (1967). *Life Zone Ecology*, rev. ed. San José, Costa Rica: Tropical Science Center.
- IUCN (2000). *2000 IUCN Red list of Threatened Animals*. IUCN, Gland and Cambridge.
- Johnston, J.P., Anthony, D.A., & Bloxam, Q.M.C. (1994). Rat eradication from Praslin Island: The St. Lucia Whiptail Lizard Conservation Programme. *Dodo, J. Wild. Preserv. Trust.* **30**, 114-118.
- McFarlan, D. (1990). *The Guinness Book of Records*. 1991 Enfield: Guinness Publishing Ltd.
- Pough, F.H., Andrews, R.M., Cadle, J.E., Crump, M.L., Savitzky, A.H., & Wells, K.D. (1998). *Herpetology*. New Jersey: Prentice Hall.
- Schwartz, A. & Henderson, R. W. (1988). West Indian amphibians and reptiles: A checklist. Milwaukee Public Museum: *Contribs. Biol. Geol.* **74**, 1-264.
- Schwartz, A. & Henderson, R.W. (1991). *Amphibians and Reptiles of the West Indies: Descriptions, Distributions, and Natural History*. Gainesville: University of Florida Press.
- Sherriff, D., Bloxam, Q.M.C., & Gibson, R.C. (1995). A report on the reptiles of Maria Island Major, St. Lucia, West Indies. *Dodo, J. Wild. Preserv. Trust.* **31**, 103-111.
- Underwood, G. (1995). *A Tale of Old Serpents: The extermination of the Cribo in St. Lucia*. St. Lucia National Trust, Castries: Unique Printers.

