

HISTORICAL PERSPECTIVE

Whorl-tailed Iguanas*

Franz Werner

The Whorl-tailed Iguanas (*Cyclura* Harl. [translator's note: "Harl." Refers to Richard Harlan, an American paleontologist and comparative anatomist who described many American and "exotic" species of amphibians and reptiles]) are distinguished from Common Iguanas [= *Iguana* spp.] by their dentition, the smaller dewlap, and the more weakly developed gular fold. Pattern and scalation is similar to that of other iguanas, except that the dorsal surface of the tail is distinguished by a ring of enlarged scales following three or four rows of typical scales. Although these enlarged scales are not particularly long, their collective tips form a whorl-like band of erect spikes around the tail. The dorsal crest may be interrupted in the shoulder and hip regions. The teeth, which appear to increase in number with age, are not serrated, but are three-sided, as in Common Iguanas, and those on the

pterygoid and sphenoid are small but numerous. Femoral pores are distinct and form a long row on each leg. All species are terrestrial and are found primarily in sandy areas where they live in burrows which they excavate for themselves.

The best-known species is *Cyclura lophoma* Gosse [this "species" is now known to consist of several distinct taxa, including *C. collei*, *C. nubila*, and *C. cyclura*; Philip Gosse was the author of the delightful *A Naturalist's Sojourn in Jamaica*, published in 1851] of Cuba, Jamaica, and the Bahamas. This form may reach a total length of

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Adult male Jamaican Iguana (*Cyclura collei*); at the time Werner wrote this article, the Jamaican species plus populations in Cuba (*C. nubila*) and the Bahamas (*C. cyclura*) were all known as *C. lophoma*. Photograph by Jeff Lemm.

1.2–1.3 m, of which the tail comprises about 70 cm, and is distinctive because of its relatively low dorsal crest, which is composed of linked, somewhat sickle-shaped spines, and which may be continuous at the nape and base of the tail or distinctly separated at one or both places. The snout is covered by three pairs of large, multi-sided, tuberculate plates that are separated from one another by small scales. Plates of variable size, those that are medially located the most prominent, characterize the forehead, and on each side of the lower jaw is a row of large, quadrangular, heavily keeled scales. Overall color of the body and limbs ranges from slate gray to brownish green. A few diagonal lines passing over the shoulder and several broad crossbands that extend from the dorsal crest to the belly are dark olive-brown. The tail is circled by regularly spaced light and dark olive-green bands.

According to Gosse, Whorl-tailed Iguanas live in only a few places on Jamaica. They were relatively common on the limestone hills that extend from Kingston harbor to the so-called Goat Island and are well known for the large numbers of feral goats, pigs, and chickens that live there. Otherwise, one may find these iguanas with some regularity in the flats that separate the coastal hills from higher mountains of the interior, but only in areas that feature large numbers of old, hollow tree trunks. These lizards appear to have no particular fondness for water, although, like their relatives, they know how to swim rather well. A fortunate circumstance made it possible to learn more about the Whorl-tail than many of its relatives. Two individuals lived in an old Acacia on the estate of a Mr. Minot for 16 months, providing him with the opportunity to observe them for an extended period of time. A friend of the owner had fortuitously discovered the two animals, but a blow with a riding crop frightened them so much that for weeks thereafter they

emerged from their lair in only the most surreptitious fashion and immediately sought refuge in the hollow tree when any human approached too closely. Subsequently, Minot forbade any further disturbance of the animals and, over time, they forgot their fright and eventually became so tame that they consented to regular and proximate visits by their landlord. As the day warmed, one of the animals would emerge from its tree hollow and hang from the bark or crawl out on a thin, dry branch to bask in the sun. It would often spend the entire day doing little else, with nary a care for the rest of its environment. Minot never saw it hunting

insects and only once did he surprise a lizard while it was eating. This occurred when the sun broke through the dark clouds after a heavy rain and the vegetation had largely dried. One of the Whorl-tails left the tree, covered about 10 m of ground with slow steps, moving only one leg at a time, until it approached a stand of so-called Guinea-grass. Tearing off mouthfuls at a time, it swallowed large masses without

any trouble. Startled by the observer whom it suddenly noticed, it rushed back to the tree, not so much running or walking as moving with a rapid series of frog-like hops. Once there, it ducked into its hole and quickly disappeared from sight.

Minot made particular note of the fact that the fleeing Whorl-tail showed no inclination to seek out water, as other iguanas are wont to do under similar circumstances. As a matter of fact, these Jamaican animals showed little interest in water of any kind and seemed to tolerate even the driest conditions without drinking. The two inhabitants of the tree were obviously a pair, since they differed from one another in size and coloration. They also lived harmoniously together, but they were never seen out of the burrow at the same time. Eventually, a good-for-nothing youngster ended the observations, laying near the tree and heartlessly shooting the two



Head of a Rhinoceros Iguana, *Metopocerus cornutus* Daud.
Photograph by L. Medland, F.Z.S. – Finchley, N.

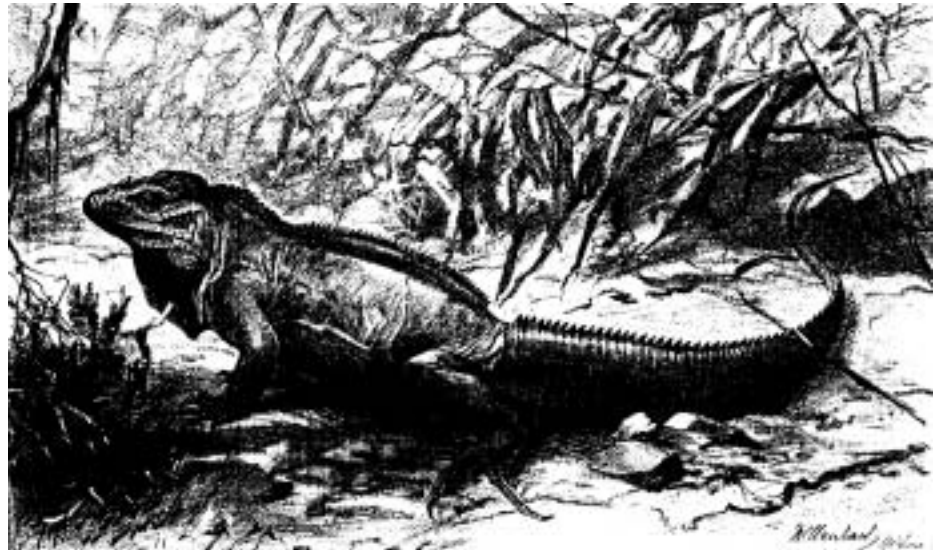
harmless creatures one after the other. Minot opened the carcasses of the shamefully murdered animals and found both stomachs filled with the previously mentioned grass.

Barbour [Thomas Barbour, an American herpetologist who traveled widely throughout the West Indies during the first half of the 20th century] recently noted that the Whorl-tail has been brought to the verge of extinction by the presence of the introduced Mongoose (*Herpestes griseus* [= *Herpestes javanicus*]) and is now found only on Goat Island, which the interloper has yet to reach.

Although generally retiring, preferring to retreat in the face of humans whenever possible, the Whorl-tail is quite brave and quite capable of defending itself in an emergency. The tail is a weapon that should not be underestimated and which can be used with great effect. Easily aroused like all iguanas, the Whorl-tail will respond with considerable wrath when cornered, inflating itself, erecting the dorsal crest, gaping to show its sharp teeth, staring darkly at its antagonist, and readying itself for an attack. If one continues to threaten the beast, it will turn around quickly and deliver a hefty blow with its tail, and then immediately turn the other way in anticipation of delivering another strike from the other side. Hill [an unknown person] had been alerted by natives to the danger posed by this animal and had been clearly warned against a careless approach. The spikes on the powerful tail are sufficiently sharp that the animal can readily inflict a most painful wound. Dogs that approach one carelessly often are severely injured.

Whorl-tails, possibly as a consequence of their diet, have such an unpleasant odor that even ants refuse to touch them — or at least to strip the flesh from a carcass thrown on their colony. These animals appear not to be hunted as eagerly as their relatives in Mexico.

The Rhinoceros Iguana, *Metopocerus cornutus* Daud. [*Metopocerus* is now considered synonymous with *Cyclura*; “Daud.” refers to François-Marie Daudin, a French naturalist who wrote *Histoire Naturelle des Quadrupèdes Ovipares* in 1800, in which he formally described the Rhinoceros Iguana], is a mighty beast found in San Domingo [a reference to Hispaniola and, more precisely, to the Dominican Republic]. It resembles the Green Iguana (*Iguana tuberculata* [= *Iguana iguana*]) in having teeth with serrated crowns and the Spiny-tailed Iguanas [= *Ctenosaura* spp.] of Middle America in color, size, build, and lifestyle — but is readily distinguished by the




Rhinoceros Iguana.

three large, cone-shaped, horn-like scales on the top of the snout of adult males. Old males also are characterized by their bulging jowls and exceedingly large heads and make a considerable impression that is enhanced further by their proud posture and lively eyes. The powerful bite and the strong, spiky tail make the Rhinoceros Iguana a worthy opponent.

Rhinoceros Iguanas are overwhelmingly terrestrial, consume both vegetable and animal matter, and in captivity can be readily maintained on a diet of fruit, juicy leaves, and strips of raw meat. Ditmars [see the appended biographical sketch] indicated that they even overpower rats and young chickens, shaking larger prey until it is torn into pieces. Given enough space and heat, these lizards

do well in captivity and have become staples in zoos that maintain collections of reptiles. Rhinoceros Iguanas are lively, shy, and careful, and do not become tame in captivity for some time. A male, kept by Werner [the author] in a cage for several years, gaped when approached, exposing its dark purple throat, but did not bite, instead

retreated farther into the cage and, only when approached even more closely, did it turn and strike with its tail. When removed from its cage, it exhibited an extraordinary strength, resisted desperately, and flailed its tail violently. 

BIOGRAPHICAL SKETCH:

Raymond L. Ditmars (1876–1942)

Raymond Ditmars was America's first great popularizer of reptiles. He was born in Newark, New Jersey and caught his first snakes at age 12 at Gravesend Bay near Brooklyn, New York. In 1893, Ditmars was hired by the entomology department at the American Museum of Natural History, but resigned in 1897 to take higher paying positions unrelated to his interest in animals. In 1898, as a reporter for *The New York Times*, one of his beats was the newly-formed New York Zoological Society. Shortly after the zoo opened, Ditmars, barely 23 years old, was hired as Assistant Curator of Reptiles and his private collection became the nucleus of the zoo's reptile displays.

Ditmars published eight herpetological books, plus a dozen more about other animals or tales of his work or travels. *The Reptile Book*, published in 1907 (an expanded edition was published in 1930) established his reputation. This volume and several others (*Reptiles of the World*, 1910, revised 1933; *Snakes of the World*, 1931; *Reptiles of North America*, 1936; and *Field Book of American Snakes*, 1939) had an enormous public influence, kindling a widespread interest in reptiles and resulting in several generations of professional herpetologists, including many still active today, who can trace their interest to one or more of Ditmars' books.

Ditmars was often dismissed as a mere showman, mainly because he wrote highly popular books for the general public, but he also made substantive scientific and public contributions. He pioneered techniques for treating diseases of reptiles, he was a major organizer of the first effort to establish an antivenin institute in America, he produced influential nature films, and he led the development of the Bronx Zoo into the first rank of the world's zoos.

Source: Adler, K. 1989. Herpetologists of the past, pp. 5–141. In K. Adler (ed.), *Contributions to the History of Herpetology*. Society for the Study of Amphibians and Reptiles, Contributions to Herpetology, Number 5. Ithaca, New York.

Raymond L. Ditmars (photograph courtesy of Kraig Adler).

