

The Water Coral Snake *Hydrops triangularis neglectus*, (Serpentes: Colubridae: Xenodontinae) from Trinidad and Tobago: a Review of the Literature with a Note on an Unusual Colour Form

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ABSTRACT

Taxonomic data of the Water Coral Snake, *Hydrops triangularis neglectus* is given and an unusual colour form from the Nariva Swamp in the northeast of Trinidad is described.

The Water Coral Snake *Hydrops triangularis neglectus*, is one of the lesser known snakes found on Trinidad. This species has been known to science since 1824 when Wagler described it as *Elaps triangularis* from specimens collected in Brazil. Later, Gray (1842; 1849) and Boulenger (1894) used the genus *Hydrops* instead of *Elaps*.

Boulenger (1894), based on 13 specimens collected in Guyana (formerly British Guiana) and Suriname (formerly Surinam), distinguished *Hydrops* from other similar looking snakes by the distinctive arrangement of the scales on the top and sides of the head, especially the rhomboidal shaped scale between the nasals and the prefrontals (Photo 5 and Fig. 1). Also important were the diagnostic number of 15 dorsal scale rows, 159-168 ventral and 47-51 pairs of sub-caudal scales, with the anal plate divided. He also described the colour of the specimens.

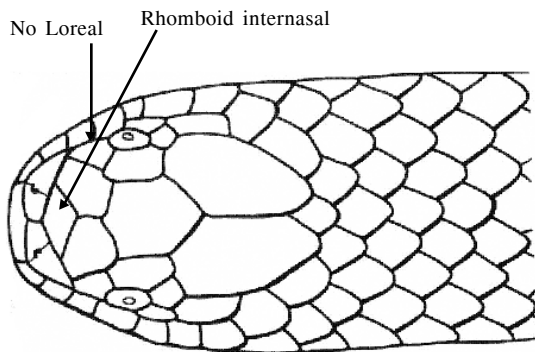


Figure 1. Head scales: *Hydrops triangularis*. (After Emsley 1977)

For the family Colubridae in Trinidad and Tobago, only the genera *Leptophis*, *Tantilla* and *Hydrops* lack the loreal scale between the eye and the nostril, but the first two genera are not banded and therefore cannot be confused with *Hydrops*. The bands and the absence of a loreal scale are usually diagnostic and distinctive for the venomous Elapids, the coral snakes. But seemingly most important of all was the colour pattern, obvious even in the preserved specimens in the collection: "Purplish brown above, red on the sides, white below; with black annuli, which may be interrupted and alternate on the middle dorsal and ventral lines" (Boulenger 1894 p.187.).

Mole (1914) published his catalogue of "Trinidad Snakes" and mentioned the local name, "Water Coral," for the first time in print. He had been collecting snakes for several years in Trinidad since his arrival here in 1886 (Boos 2001 p.16.), and he obviously had a

copy of the Boulenger Catalogue, for his quoted maximum length for this species, 780 mm, its description and distribution is exactly the same as that given by Boulenger.

Mole had been collecting snakes from all over Trinidad and had other collectors bringing him specimens as well. He published his most often-referred-to-work, "The Snakes of Trinidad" (1924, 1926). The first specimen of *Hydrops* that Mole saw was from Arima, and others came from Princes Town and Cunupia. Some snakes were collected in the Four Roads area of Diego Martin. Today there is little habitat that would support a population of *Hydrops* in the Diego Martin Valley. It was noted that it fed on little fish and that, apparently, it did not live very well in captivity. Of greatest importance, was the first publication of a photograph of this species in the 1924 paper by Mole. Fig. 1. of Plate VI shows the distinct banding on the dorsal surface and the blotched underbelly that is characteristic of this species.

However, up to this time the only description of this species was still the original one in Boulenger (above), and, in their general characteristics, all the subsequent specimens collected seemed to conform to this pattern.

In what was then British Guiana, William Beebe, at the tropical station established at Kartabo, noted that the specimens that were being collected there were mostly burrowing in habit, and were common in the rice fields where they were feeding on *Synbranchus* eels. Beebe (1946 p.28-29.) was meticulous in recording the details of the patterns of the three specimens collected by the staff who worked at Kartabo. In all three descriptions one of the distinctive characters was that the snakes were distinctly banded on the head and the body. His descriptions differed little from the one in Boulenger. He designated this species with the common name, the "Red and Black Banded False Coral Snake." It is unfortunate that the plates at the end of the paper do not include an illustration of this species, though there is mention in the text of a Color Plate 88 of the snake number 244a, collected in March of 1919. I have no information if, or where, this plate was going to be, or ever was, published.

However, I had seen a number of beautiful colour paintings and illustrations when I visited the New York Zoological Society field station at Simla in the Arima Valley in the early 1960's. I recognized that the illustrations for many of the later papers and articles written by Beebe and his staff were based upon the originals that I had seen. These drawings and paintings included the ones from British Guiana, and may have included Plate 88. I have been unsuccessful in tracking down these works either locally or from

the New York Zoological Society in the United States of America.

It was noted by Wehckind (1955) that *Hydrops* also fed on fresh water eels. (*Synbranchus marmoratus*).

Brongersma (1956) listed a specimen collected near Tacarigua in 1953 and, taking into account a work by Amaral (1929), tacked on a nominate subspecies name, *Hydrops triangularis triangularis*.

Roze (1957 p.56.), in his revision of the genus, published a drawing of the head scales of *Hydrops triangularis*, which clearly shows the distinctive, single, rhomboidal internasal scale and the lack of a loreal scale between the preocular and the nasal scales. Using details of scalation for three specimens from Trinidad and four from Guyana, Roze (1957 p.81-83) described a new subspecies, *Hydrops triangularis neglectus*. This subspecies differed from the five other subspecies by having the following scalation characteristics: 47-51 subcaudals, 159-168 ventrals, 43-60 black bands across the body and 10-14 black bands on the tail region. Figure 13 of this paper illustrates the banding on the dorsal surface of *H. t. neglectus* and shows the banding for three of the other subspecies. Later, Roze (1966) published two drawings of the head scalation and the banding of the subspecies *Hydrops triangularis venezuelensis*, details of which differ little from those of the subspecies *neglectus*.

Besides those noted above, and the ones I have not seen in Wagler (1824), Schlegel (1837) and Jan et al. (1868), illustrations or photographs of *H. triangularis* are uncommon in the recently published literature.

There is a colour painting on page 112 of Do Amral's "Serpentes do Brasil" (1977) which shows the snake, heavily banded on both dorsal and ventral surfaces, the pink bands fading to a dirty white on the ventrals.

There is a good, three-view, drawing of the head scalation in Emsley. (1977 p. 293 Fig 30)(Fig.No.1).

Moonen *et al.* (1979 p. 26) show a colour photograph of a brightly coloured specimen identified as *H. triangularis*, with the alternating black and pink/red body-banding, and a distinct light collar rimmed with dirty yellow behind a dark head. What can be seen of the ventral surface looks white.

There is a colour photograph in Campbell and Lamar (1989 p.288; Fig.488) which depicts *H. t. venezuelensis*, and which shows the distinct black and white banding on the body and tail. Some parts of the light bands appear to be dirty yellow/pink.

Murphy (1997 Pl. 131.) shows the banded pattern for this species. However in his description (p.177) he states in error, "The only Trinidad snake with....a loreal (distinguishing it from the true coral snakes)... *Hydrops* is fairly unique in the Subfamily Xenodontinae in Trinidad and Tobago, in that it lacks the loreal scale between the preocular and the nasal scales, similar to the true coral snakes. (See above)

There are two illustrations of *H. t. neglectus*, one in black and white and the other in colour, in Boos (2001 p. 97, Plate 14) that show clearly the reported typical banded pattern of this species. The white band across the rostral area of the head is clearly seen, even in the hatchling as it emerges from the egg case.

Due to space and financial restrictions that affected the content of the book "The Snakes of Trinidad and Tobago," there were several more photographs that could not be published, two of which would have confirmed and further illustrated the colour patterns of this snake.

The first shows a very thin and possibly starving individual that was collected by Allan Rodriguez in the lagoon that drains the northern reach of the Nariva Swamp. Here a small estuary crosses

the road and seasonally flows to the sea. (Photo 1). Collected in October of 1983, at the height of the rainy season that year, there is a possibility that this snake had traversed the passage between Venezuela and Trinidad during heavy flooding of the Orinoco delta, and had managed to survive. Without any food for several weeks as it floated on the rafts of water hyacinths, it made landfall on the north Manzanilla Beach, to crawl weakly into the inhospitable and polluted, brackish-water lagoon there. If the transmigration of this specimen did occur, it underlines observations that some reptilian fauna from Venezuela are regularly making landfall and continuing the colonization of Trinidad and possibly Tobago. (Boos 1984, 2001 p.74).

The second I collected dead on the road near the bridge that crosses the Cumuto River in the northeast of Trinidad and there was a small, fresh-water eel, *Synbranchus marmoratus*, about 25 cm. long, protruding from the crushed abdomen. (Boos 2001 p.97.) This photograph supports the previous observations of the prey choice of this species (Photo 2).

The above was the standard description of, and information about *Hydrops*, and was what I have used over the years to identify the few specimens that I collected or had brought to me for identification.

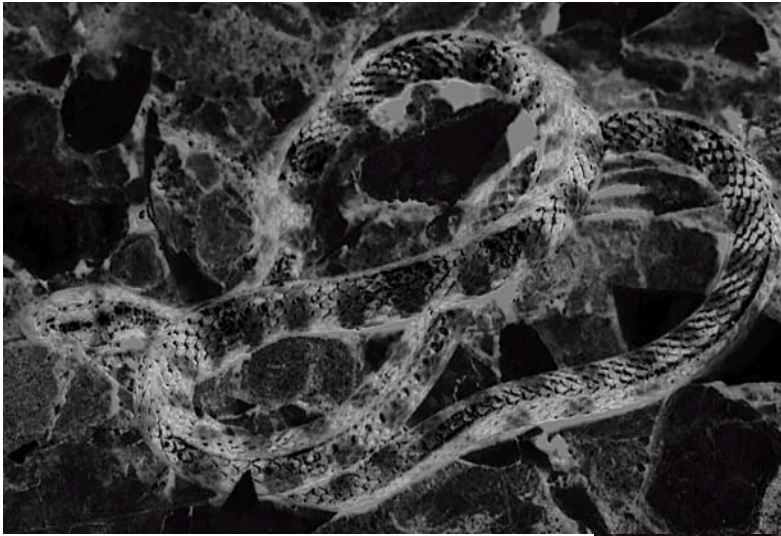
However, there was a surprise to come (Photos 3-5).

Collecting in the Bush Bush area of the Nariva Swamp, Saiyaad Ali found a small snake that looked nothing like *H. t. neglectus*. There was little to no banding on the body, though there was some hint of banding on the tail and on the head and neck. There were the required 15 scale rows throughout the entire body. The 166 ventrals fell within the parameters set by Roze (1957) and the 53 paired subcaudals were two more than the maximum given for *H. t. neglectus*. All other scale characters on the head conformed to the genus *Hydrops*. Upon examining the head scales, there was the distinctive rhomboidal internasal and there was no loreal. The unusual color pattern was as follows: the ventral scales from the chin to the divided anal plate were a uniform dark gray to black. The first two dorsal scale-rows up from the ventrals were pale gray, creating a distinct, light line running the entire length of the snake. On dorsal scale row 3 was a longitudinal series of blotches and conjoined brown spots, creating a dark line. Above that line, on rows 4 and 5, the scales were light khaki/brown, again creating the effect of a light lateral line along the entire body of the snake. The next 5 rows, from row 6 to 10, spanning the mid-dorsal area of the snake, were a dark blackish green, and this dorsal stripe extended to about three scale rows before the anal area. The both sides of the snake were mirror images. Only on the dorsum of the tail and subcaudals was there some light and dark banding, and there was some hint of pink on the light areas. The head was also flattened as illustrated in the drawings that have been published; (Roze 1957 p.56, 1966 p.148, 149; Emily 1977 p.293) and the eyes and nostrils were dorso/laterally placed. The iris was a brown/orange, with a black round pupil. As there was no discernable dorsal banding those characters could not be used to determine any further the validity of the species identification, but the other characters were enough to allow it to be identified as *H. t. neglectus*.

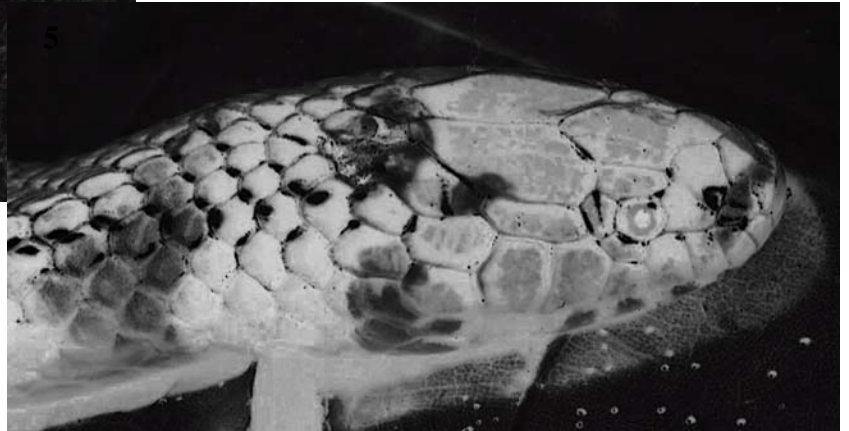
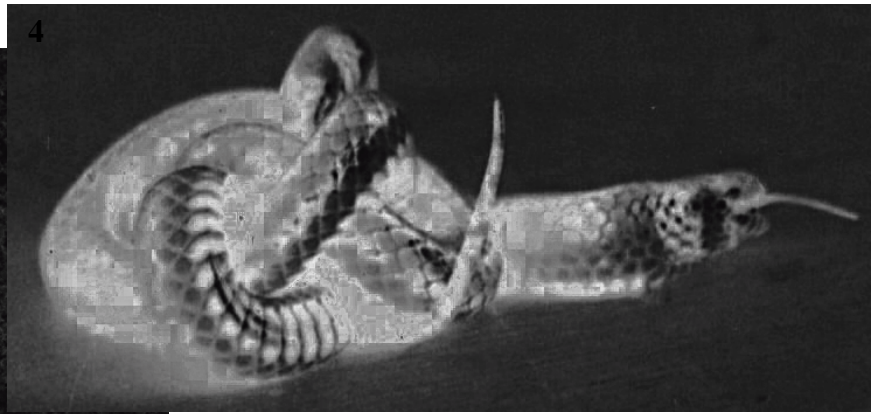
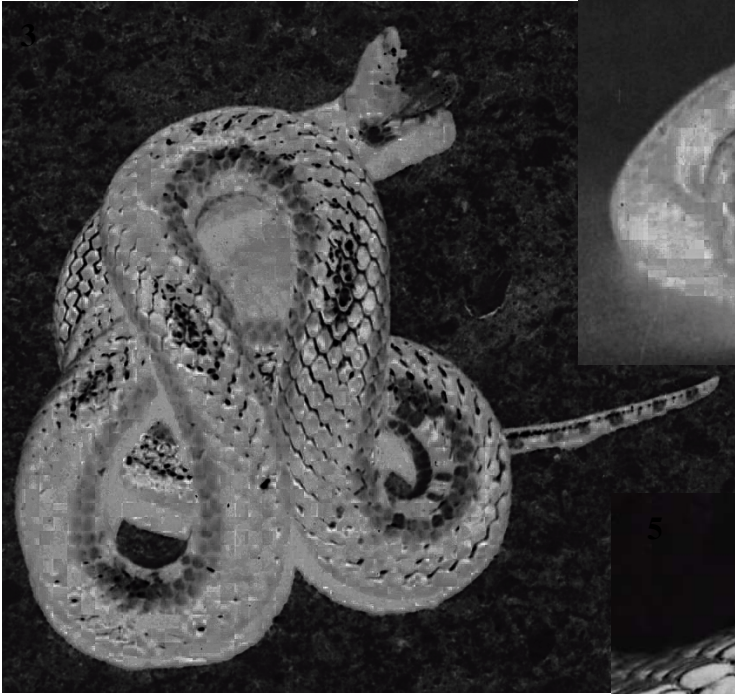
In captivity this snake tended to burrow out of sight into the substrate of the aquarium, supporting the earlier observations of Beebe (1946 p.28). It was feeding on the common Cyprinodontid fish, *Rivulus hartii*, the jumping guabin, and after one of the meals it unfortunately died. The cause of its death was not determined.

Continued observations and collecting in the immediate area where this unusual colour form of *Hydrops triangularis neglectus*

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Figs. 1-5. *Hydrops triangularis neglectus*.
Photos 2 and 3 by S. Ali.
Others by H. Boos.



was found may indicate whether this individual is a single aberration or a colour form that is sometimes found in a fairly widespread and genetically plastic species.

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