

## Notes on *Brachysomophis atlanticus* from the Cape Verde Archipelago

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**Living snake eels of the rare species *Brachysomophis atlanticus* Blache and Saldanha were observed and photographed by scuba divers in 8–10 m off Santiago Island, Cape Verde Archipelago. Their behavior and life coloration are described for the first time. Comparisons of behavior and anatomy are made with its congeners.**

The snake eel *Brachysomophis atlanticus* was described by Blache and Saldanha (1972) on the basis of two specimens (263–273 mm TL) from Sénégal and from Príncipe Island, Gulf of Guinea. They knew little about the provenance of their specimens and listed the data and depth of their captures as “non précisées”. Bauchot et al. (1993:104) stated that the holotype was from a fish's stomach. McCosker and Randall (2001:7–8) re-examined the type specimens and reported upon an additional specimen (~170 mm TL) from Príncipe that had been decapitated by a dredge at 75 m depth. Nothing concerning this species has subsequently appeared.

In 2007, the junior author observed several living *Brachysomophis atlanticus* while diving at night off King Bay (15°16'31"N, 23°45'45"W), Tarrafal, Santiago Island, Cape Verde Archipelago. The eels were burrowed in the sand at 8–10 m depth with only their heads exposed. Photographs were taken and a specimen was captured in July 2008. We herein report upon that specimen, provide data concerning its coloration, meristics and morphometrics, and comment upon observations

made of its *in situ* biology. The specimen is a female with developing oocytes and contained a 4 cm TL sharpnose puffer *Canthigaster capistrata* in its stomach. A sample of the eel's liver was preserved in 96% EtOH and is deposited, along with the specimen (CAS 227135), in the ichthyological research collection of the California Academy of Sciences. The specimen has the following measurements (in mm) and meristics: total length (TL) 380; head 46.8; trunk 145; tail 188; dorsal-fin origin 43.1; snout 4.5; upper jaw 16.2; eye 2.4; interorbital 3.5; pectoral-fin length 7.4; pectoral-fin base 3.1; gill opening 6.5; isthmus 4.1; depth at gill openings ~13.5; width at gill opening 12.4; vertebrae 7/52/116. The proportions of the Cabo Verde specimen are very similar to those of the



FIGURE 1. Living *Brachysomophis atlanticus* (CAS 227135), 380 mm TL, photographed by P. Wirtz soon after capture off Tarrafal.

smaller type specimens. The cephalic pores and dentition are nearly identical to those illustrated in Blache and Saldanha (1972: figs. 12–13). Its vertebral count allows the first documentation of the predorsal and preanal counts for this species, and that, along with the total vertebral counts of the holotype (114) and paratype (117), establishes its mean vertebral formula as 7/52/115.7. The coloration of the fresh specimen (Fig. 1) deserves comment: the body and tail of the living specimen is colored much like that of those in preservative (white ventrally, becoming yellowish above the lateral midline, overlain with 22 large, rounded, saddle-like brown spots, many of which meet across the dorsal midline and extend beneath the level of the lateral line). The four white spots along the mandible are prominent. The head of the specimens observed *in situ* is variable in coloration, not unlike that of *B. henschawi* (cf. McCosker and Randall 2001: Plate II D–G). The background coloration of the head of the Cape Verde specimen is much like that of the body; however its nape and chin are overlain with a reddish-brown patch. Another individual, photographed but not collected (Fig. 2), appeared to be the size of the collected specimen and its nape and chin were dark pink with a smattering of darker pink patches on its snout and cheeks. Another eel (Fig. 3), photographed but not collected, was approximately twice the length of the collected specimen and similar in its brown and white head coloration.

All eels observed (two individuals in 2007, probably five individuals in 2008) were seen on a sandy, near horizontal area in 8–10 m depth in King Bay, less than 30 m from the shoreline and perhaps 200 m in extent. No individuals of this species were seen on another, larger sandy area in the same bay in 20 m depth, despite a careful search for them. The junior author has only seen this species during eight night dives in that area; however, one of the local dive guides stated that he has also seen at least one during daytime. The closest distance observed between individuals was about 5 m. Individuals observed in consecutive night dives on following days were not seen at precisely the same location, but this may have been the result of disturbance by the photographer.

A careful examination of the *Brachysomophis atlanticus* specimen has allowed us to compare it to its congeners. We find that it is similar to *B. henschawi*, a wide-ranging Indo-Pacific species known from Hawaii to Oman (McCosker and Randall 2001). They are nearly identical in the shape of their head such that the flesh above and behind the eyes is laterally elevated as a ridge and the dorsal head profile is notably depressed and constricted behind the eyes (see McCosker and Randall 2001: fig. 6), forming a lateral eave behind the dorsal margin of the eye. Although present in other *Brachysomophis*, the development of that eave is most prominent in *B. atlanticus* and *B. henschawi*. They are also very similar in the shape of their pectoral fins (short and rounded rather than



FIGURE 2. *Brachysomophis atlanticus* photographed at night by P. Wirtz at 8 m depth off Tarrafal.



FIGURE 3. *Brachysomophis atlanticus*, a larger individual than those in Figures 1–2, photographed at night by P. Wirtz at 8 m depth off Tarrafal.

elongate, as in other species of *Brachysomophis*). They differ in their body colorations (large spots vs. minute spots, and a pale dorsal-fin base vs. a dark base), their dorsal-fin origins (above gill opening vs. behind pectoral fin tips), the condition of their labial cirri (numerous and slender vs. fewer and stout), in their dentition (the teeth of the inner maxillary row of *B. atlanticus* are considerably more elongate), and in their vertebral numbers (114–117 vs. 128–134).

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