

supported by one of the most popular writers on astronomy and physics of the day *; and the jury adopted this explanation.

On the other side it was contended that the open circular hole observed in the timber had been made for a tree-nail, and had been left unclosed, and only covered by the copper-sheathing of the vessel; but I do not recollect that any evidence was brought in support of this view, which I believe is the true explanation; for certainly, even allowing that the sword-fish could withdraw its beak, the hole which the beak had made would not have remained circular, but would have become more or less filled up.

May not the whole case be considered an illustration of the want of practical and scientific instruction by what are called the members of several of the most instructed professions?

The swordfish which is supposed to have attacked "the good ship 'Dreadnought'" must have been a very clever fellow, much in advance of his brethren. With his conical bony beak he succeeded in making a cylindrical hole about an inch in diameter through the timbers of the ship, similar to that made by an auger; and having twisted himself into it, he managed, having done the mischief he desired in revenge for having been caught by the ship's crew, to withdraw his beak and to sail away uninjured. He did not do his swimming parallel to the surface of the water (as most fishes do), but he must have done it (judging from the cylindrical hole being found only a few inches from the keel) ascending from the depths, and working at the hole in a nearly perpendicular direction; and if I understand rightly, all this was done while the ship was sailing through the sea.

To me the more simple explanation seems to be that one of the treenail- or bolt-holes, of which there are hundreds in a wooden ship, had been left unfilled. These holes are just about the size and form which the one in the ship is described to have been.

XLIV.—*Notice of a Fossil Hydraspide* (Testudo Leithii, Carter) from Bombay. By Dr. J. E. GRAY, F.R.S. &c.

DR. LEITH has drawn my attention to the description and figure of a fossil freshwater tortoise which he discovered in the freshwater formation of the Island of Bombay, and which is admirably described and figured by my friend Mr. H. J. Carter in his account of the geology of the Island of Bombay, with a map and plates, in the 'Journal of the Bombay Branch

* See "Ship attacked by a Swordfish," Proctor's 'Light Science,' p. 358.

of the Royal Asiatic Society' for July 1853. Mr. Carter calls the species *Testudo Leithii*. He examined the remains of nine specimens, and gives a very good restored figure of the upper and under surfaces of the head, carapace, and feet of the animal. Mr. Carter, though he refers the species to the genus *Testudo*, properly refers the fossil to the "Pleuroderal Eledians" of Duméril and Bibron, and especially compares it to the genus *Sternothærus*. He truly observes that no species of this family has been found in the recent state in Asia. All the specimens are, I believe, left in the Museum of the Asiatic Society of Bombay.

The description and figure of the carapace induce me to believe that the fossil is most nearly allied to some of our existing South-American species of the restricted genus *Hydraspis*; and the remains of the head, which are unfortunately imperfect, lead to the same conclusion: but at present that genus is only found in tropical America.

The genera of this group of tortoises may be artificially arranged by the sternal plates, thus:—

1. Sterno-costal symphysis covered by the outer ends of the pectoral and abdominal shields.
 - A. Pectoral plates very large and long. Abdominal plates short and transverse. HYDROMEDUSA*.
 - B. Pectoral plates four-sided, moderate, subequal. HYDRASPIS, CHELYMYS, and EUCHELEMYS.
 - C. Pectoral plates triangular. PELOMEDUSA.
2. Symphysis covered by the ends of the abdominal plates.

Pectoral plates narrow, triangular. STERNOTHÆRUS.

This fossil, according to this artificial table, would be ranged with *Hydraspis*; and it is peculiar among the *Hydraspidæ* for the large size of the intergular plate, the very small triangular gular plates, and the small size and triangular form of the postgular, the pectoral plates being rather longer than the abdominal ones. It is also peculiar for the underside of the marginal plate opposite the suture between the pectoral and abdominal plates being rather broader than the rest, and angular on the inner edge, which I have not seen in any of the recent species. I propose to name it provisionally *Hydraspis Leithii*, = *Testudo Leithii*, Carter, Journ. Bombay Branch of the Royal Asiatic Society, 1853, p. 1, tab. x. & xi.

It must not be confounded with the *Testudo Leithii*, Günther, which is a true land-tortoise, very nearly allied to *T. marginata* of Europe.

* Some specimens, perhaps males, of *Hydromedusa Maximiliana* have the middle of the hinder part of the sternum deeply conically concave, while the front part of the sternum is quite flat.



Gray, John Edward. 1871. "XLIV.—Notice of a fossil Hydraspide (Testudo Leithii, Carter) from Bombay." *The Annals and magazine of natural history; zoology, botany, and geology* 8, 339–340.

<https://doi.org/10.1080/00222937108696501>.

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