

ON A NEW BATHYPELAGIC SHARK, *SCYLIORHINUS (HALAELURUS)*
SILASI (FAM : SCYLIORHINIDAE) FROM THE ARABIAN SEA*

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ABSTRACT

Fowler (1933) confused two species of sharks under the specific name *Halaehurus garmani* Fowler. One of these remains without an appropriate specific name. A new specific name is proposed and a description given for this scyliorhinid bathypelagic shark based on four specimens collected from the Arabian Sea off the south-west coast of India.

INTRODUCTION

DURING a recent survey of the south-west coast of India, several elasmobranchs were collected by the otter trawl off Quilon on board the *Blue Fin* of the Central Institute of Fisheries Operatives, Cochin. The collection comprised the following sharks and rays : *Heptanchias indicus* (Agassiz), *Proscyllium alcocki* Misra, *Raja powelli* Alcock, *Heteronarce mollis* (Lloyd), *Torpedo panthera* Olfers and four specimens of a scyliorhinid shark, initially determined as *Halaehurus garmani* Fowler. These four specimens, however, differed from the type description and figure of *H. garmani* in the colour pattern and other salient characters which confirmed the suspicion that Fowler (1934) had confused two species under the specific name *garmani*. This shark requires a new specific name and is named in honour of Dr. E. G. Silas of the Central Marine Fisheries Research Institute, Cochin, whose excellent publications on the ichthyofauna of the continental shelf of the south-west coast of India, have added much to our knowledge of the fauna of this region.†

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SYSTEMATIC ACCOUNT

Scyliorhinus (Halaehurus) silasi sp. nov.

Halaehurus garmani Fowler, 1934 (*partim*), *Proc. Acad. natn. Sci. Philad.*, 85 : 235 (type loc : East Indies).

Halaehurus garmani : Fowler, 1941 (*partim*), *Bull. U.S. nat. Mus.*, (100) 13 : 49.

Description : Measurements of the types are presented in Table 1.

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† Dr. E. G. Silas has also collected a number of specimens of this shark from the deeper waters of the south-west coast of India and has almost completed a detailed study of the systematics of this shark.

Depth of body 7.0-7.8 in standard length. Head broad, depressed, length 3.1-3.2 in standard length, 4.0-4.4 in total length. Width of head 1.2-1.5 in its length. Snout broad and obtuse as seen from above, length 3.4-3.8 in head length. Eye diameter 5.6-6.8 in head length, 1.4-1.9 in snout length, 2.0-2.5 interorbital width;

TABLE 1. Measurements (in mm) of holotype and paratypes of *Scyllorhinus (Halaelurus) silasi* sp. nov

	Holotype	Paratypes		
		I	II	III
Total length	318.0	360.0	215.0	188.0
Standard length (length to subcaudal origin)	238.0	275.0	160.0	138.0
Head length	79.0	89.0	51.0	42.5
Width of head	67.0	70.0	33.0	32.0
Diameter of eye	14.5	13.0	8.0	7.5
Interorbital width	29.0	33.0	18.0	17.5
Length of snout	20.5	23.0	15.0	12.0
Width of mouth	45.0	49.0	26.0	22.0
First dorsal fin height	33.0	38.0	19.5	18.0
Second dorsal fin height	22.0	22.0	15.5	14.25
Length of base of first dorsal	22.0	26.0	14.0	13.0
Length of base of second dorsal	16.0	17.5	12.0	10.5
Length of base of anal fin	20.5	25.0	16.0	13.0
Pectoral fin length	42.0	54.0	23.5	22.0
Subcaudal fin length	57.5	68.0	42.0	38.5
Caudal fin length	80.0	90.0	55.0	49.0
Least depth of caudal peduncle	10.5	12.0	7.5	7.0

without nictitating membrane. Interorbital width 2.4-2.8 in head length, depressed, Width of mouth 1.4-1.8 in head length.

Mouth large, crescentic with short labial folds only at angle of lower jaw. As seen in profile nostrils nearer eye than snout tip, both valves entire, front ones separated by interspace 2/3rds their width, both without cirri and anterior reach mouth, concealing posterior valves. Five pairs of lateral, subequal gill slits, equidistant from one another, first deepest with others gradually smaller to fifth, last two above pectoral base. Spiracle small, closely posterior and in level with lower border of eye.

Teeth small, pointed, tricuspid with a large median cusp and smaller similar cusps on each side of the base; 5-6 rows of teeth in each jaw, edges of teeth entire. Scales rather small, each with median point and small points at the base.

Two spineless dorsal fins, first dorsal larger than second; first dorsal fin origin behind vertical from 1/3-1/2 pelvic fin base (in the smallest paratype close behind end of pelvic fin base), height 2.4-2.6 in head length, second dorsal fin origin at vertical from anterior 2/5th of anal fin base, height 3.2-3.8 in head length. Anal fin origin about one eye diameter nearer subcaudal fin origin than pelvic fin origin (midway between subcaudal origin and pelvic fin origin in the smallest paratype), base 3.2-3.8 in head length. Pectoral fin base 1.4-1.7 in length, length 1.9-2.1 in head length. Pelvic fin origin considerably before first dorsal fin origin. Subcaudal fin large, base 1.1-1.4 in head length. Caudal fin slightly larger than head length.

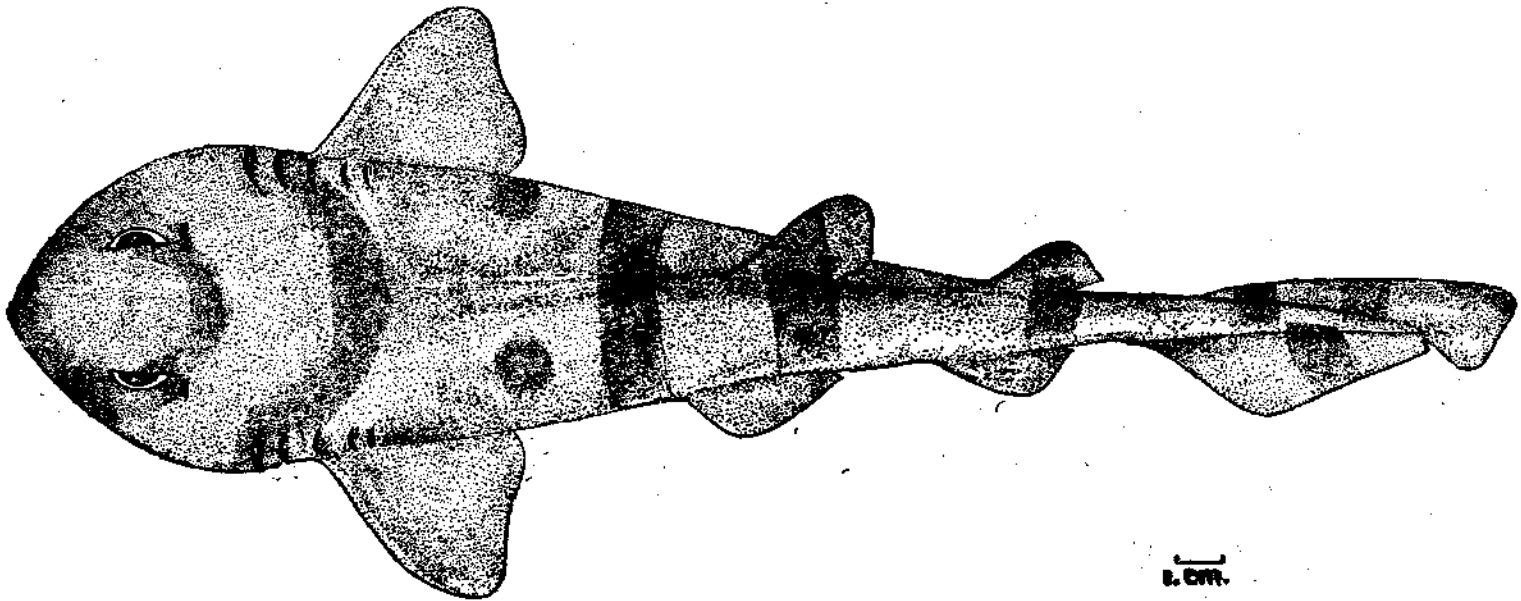


Fig. 1. Holotype of *Scyllorhinus (Halaclurus) silasi* sp. nov.

Colour in alcohol—Light brown with seven dark brown saddles arranged so as nearly subequal in size with pale interspaces, at sides from eye to caudal fin.

Distribution : South-west coast of India and the East Indies ; in deeper waters.

Material

Holotype (Fig. 1) : a female specimen, 318 mm in total length ; collected from the Arabian Sea off Quilon at station Lat. 09°N. Long. 76°E. on a rocky bottom, otter trawl haul, 300 metres, 3.iii.1971, *Coll.* P. K. Talwar ; Regd. No. F. 6562/2. Zoological Survey of India, Calcutta.

Paratypes : (i) A male specimen, 360 mm in total length, collected along with the holotype ; ZSI Regd. No. F 6563/2.

(ii) A female specimen, 215 mm in total length ; off Quilon at same station as holotype, 4.iii.1971, *Coll.* P. K. Talwar ; ZSI Regd. No. F. 6564/2.

(iii) A male specimen, 188 mm in total length ; off Quilon at same station as holotype, 4.iii.1971, *Coll.* P. K. Talwar ; ZSI Regd. No. F. 6566/2.

DISCUSSION

Fowler (1934, 1941) confused two species of sharks under the name *Halaehurus garmani* Fowler, 1934 : the first species has the back and upper surface of the body profusely marked with 'rather large chestnut brown spots' and is described and figured by Fowler (1934 : 235, fig. 1) and the figured specimen designated as the type (USNM No. 43749) of *H. garmani* ; the second related species has the back with seven transverse rather dark bands transversely or as saddles' and is clearly distinct from the former species. Fowler (*loc. cit.*) encountered both these species in the East Indies but considered them as conspecific. The latter species can be distinguished from *garmani* besides the colour pattern, by the shorter snout (3.4-3.8 vs. 2.75 in head length), shorter pectoral fin (1.9-2.1 vs. 1.25 in head length) and shorter (*vs.* longer) subcaudal fin in head length.

The Indian species of *Halaehurus* Gill can be distinguished by the following key adopted after Misra (1969) now modified to accommodate the new species :

- | | |
|---|------------------------------------|
| 1. First dorsal fin larger than second dorsal fin | 2 |
| First dorsal not larger than second dorsal fin | 3 |
| 2. Body uniformly dull gray | <i>H. hispidium</i> (Alcock) |
| Body with 7 dark subequal saddles on back | <i>H. silasi</i> sp. nov. |
| 3. First dorsal fin smaller than second dorsal, nasal cirri well developed | <i>H. alcocki</i> Garman |
| First dorsal fin and second dorsal subequal, nasal cirri absent or rudimentary | 4 |
| 4. First dorsal fin origin above middle of pelvic fin base ; transverse dark bands, spotted with black | <i>H. burgeri</i> (Müller & Henle) |
| First dorsal fin origin above last third of pelvic fin base ; transverse bands 20 or more, not spotted with black | <i>H. quagga</i> (Alcock) |

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