

very minor points from *Spironoura falcata* and examination of further material may possibly show that the differences are not specific". With the plenty of material available, the author had an opportunity to study *Spironoura brevispiculata* and check up its characters.

It is found that *Spironoura brevispiculata* differs from *Spironoura falcata* Vonlinstow (1906) in the following points :

Nos.	<i>Spironoura brevispiculata</i>	<i>Spironoura falcata</i>
1	Submedian papillae absent	Submedian papillae present
2	Inner labial papillae separated	Inner labial papillae bifurcated
3	Six interlabia present	Interlabia absent
4	Caudal papillae absent in female	Caudal papillae present in female
5	Musculature beyond the cloaca in female	No musculature
6	Presence of tail spine	Absence of tail spine

The author holds the view that the differences mentioned above are of specific nature and therefore sufficient to recognise *Spironoura brevispiculata* distinct from *Spironoura falcata*.

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A CATCH OF THE RARE SNAKE MACKEREL *PROMETHICHTHYS PROMETHEUS* (CUVIER) (PISCES:GEMPYLIDAE) IN INDIAN SEAS

DURING a cruise on the fishing trawler *Tuna* of the Integrated Fisheries Project, Cochin, a specimen of *Promethichthys prometheus* (Cuvier), belonging to the family Gempylidae, was collected off Quilon (Kerala State) by the otter trawl operated at 300 metres. The records of *P. prometheus* are scattered over deep water in the tropical Atlantic and Pacific Oceans (Herre¹). Except for a solitary report from the East Indies by Bleeker², it has not been recorded so far from the Indian Ocean.

Day³ in the *Fauna of British India* did not describe any member of the family Gempylidae from the Indian Seas. Alcock⁴ recorded the first gempylid, *Thyrsites bengalensis* [= *Rexea prometheoides* (Bleeker)] from Indian waters. Subsequent additions to the marine ichthyofauna were: *Gempylus serpens* Cuvier by Jones⁵, *Epinnula orientalis* Gilchrist and von Bonde by Tholasilingam, Venkataraman and Kartha⁶, and *Ruvettus pretiosus* Cocco and *Thyrsitoides marleyi* Fowler by Silas⁷. Opportunity is taken here to present a key to the identification of the gempylids known from Indian waters, to facilitate further work on this interesting group of fishes.

Promethichthys prometheus Cuvier

Gempylus prometheus Cuvier⁸, 1831, 213, pl. 222, (type loc. : St. Helena, South Atlantic).

Thyrsites prometheus, Bleeker², 1856, 43.

Promethichthys prometheus, Jordan and Evermann⁹, 1905, 178, pl. 29.

Rexea prometheoides Tholasilingam, Venkataraman and Kartha⁶ (*nec.* Bleeker) (partim), 1964, 280.

Material

A specimen, 253 mm in standard length, off Quilon (Kerala State) (Lat. 8° 45' N, Long. 75° 50' E), 300 m depth, 12th March 1975, coll. P. K. Talwar; ZSI Regd. No. F. 7177/2.

Description

D XVIII II 16 + 2; A III 13 + 2; P ii 12; V I.

Body moderately elongate and compressed. Depth of body 16.6, length of head 33.6; both in percentage of standard length. Diameter of eye 20.6, length of maxilla 41.2, length of snout 35.3, interorbital width 13.6, length of lower jaw 56.4, and length of pectoral fin 45.8; all in percentage of length of head. Head compressed, the interorbital space with a rather broad groove pointed posteriorly. Mouth large, somewhat oblique, lower jaw projects, maxillary extends to vertical from anterior third eye diameter. Lateral line single, continuous, with an oblique curve downwards slightly behind base of 4th dorsal spine.

Gill rakers on first arch rudimentary as a series of low spiny elevations on the arch, obsolete on anterior half of arch.

Teeth uniserial in each jaw, minute, conic, 13 in each side of upper jaw and 10 on each side in the lower jaw; the anterior pair of the lower jaw are strong canines which remain outside when the mouth is closed, six strong canines (three fallen out) in the upper jaw; a single series of villiform teeth on the palatines, a few villiform teeth on tongue.

Two contiguous dorsal fins, origin slightly behind hind border of preopercle; anterior and posterior

Key to the Indian Gempylids

1. 9 to 21 dorsal spines; body oblong or moderately elongate	..	3
2. 30 to 32 dorsal spines; body very elongate	<i>Gempylus serpens</i> Cuvier
3. Lateral line single	5
4. Lateral line bifurcated at its origin	7
5. Pelvic fins well developed (at least in the adults), each with a spine and 5 soft-rays	<i>Ruvettus pretiosus</i> Cocco
6. Pelvic fins reduced to a single spine	<i>Promethichthys prometheus</i> (Cuvier)
7. Body more or less elongate; lower branch of the lateral line running along the middle of the body; pelvic fins, if present, inserted a little behind the bases of the pectorals	9
8. Body more or less fusiform; lower branch of the lateral line running along the ventral edge of the body; pelvic fins inserted well behind the bases of the pectorals	<i>Epinula orientalis</i> Gilchrist & von Bonde
9. 2 dorsal finlets	<i>Rexea prometheoides</i> (Bleeker)
10. 5-6 dorsal finlets	<i>Thyrstitoides marleyi</i> Fowler

spines of the fin somewhat shorter than the median ones; two detached finlets behind dorsal and anal fin each. Origin of anal fin slightly behind that of second dorsal, the spines minute, stout, first spine separated from the rest of the fin. Pelvic fins are represented by a pair of minute spines in front of the base of the pectoral fin. Caudal fin forked, the lobes nearly equal.

Scales very small, cycloid, deciduous, on body and head including the upper part of snout, maxillary and opercles.

Colour in alcohol, uniformly blackish brown with somewhat blackish cloudings; verticle fins more or less dusky except spinous dorsal which is blackish; pectoral fins dusky in their distal half.

Remarks.—The species has already been found in Indian seas but not recognised. Tholasilingam *et al.*⁶ described the adult specimens of *Rexea prometheoides* (Bleeker) as 'dark brown' and in which the upper branch of the lateral line absent. These specimens are clearly identical with *Promethichthys prometheus* Cuvier.

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AFTER-DISCHARGE IN THE VENTRAL NERVE CORD OF THE SCORPION *HETEROMETRUS*

THE study of simple photoreceptor systems in animals wherein parts of the nervous system are directly sensitive to light is gaining considerable importance in recent times. Studies were carried on such neural photoreceptors which occur in the metasoma of the scorpion *Heterometrus*¹. In order to understand the effect of the photic input from these photoreceptors on the functioning of the nervous system, the electrical activity was recorded from units in the ventral nerve cord on photic stimulation of photoreceptors in the metasoma.

Bipolar platinum hook electrodes were used for recording. The activity was displayed on a Tektronix Oscilloscope and photographed using Grass kymograph camera. A tungsten-filament microscope lamp fitted with a heat filter was used for photic stimulation.

The photic stimulation of the metasomatic ganglia and the telsonic nerves was found to elicit spike activity in a large number of units in the ventral nerve cord. These units were silent under complete darkness. It was observed that the activity once elicited by the light stimulus, often lasted for considerable period even after the stimulus was off. The duration of this after-discharge was as long as 20 sec.