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# *THYRSITOIDES JORDANUS* (TELEOSTEI : GEMPYLIDAE) : A NEW SPECIES FROM THE GULF OF AQABA (RED SEA)

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ABSTRACT

*Thyrsitoides jordanus* sp. nov. is very closely related to *Thyrsitoides marleyi* Fowler, 1929 (from Western Indian Ocean). Contrasting features are : a lower anal and second dorsal fin count, number of teeth, presence of fleshy lateral keels on caudal base, an asymmetrical termination of the upper branch of the lateral line, presence of ribbings on both sides of lower branch of lateral line, a more spinescent gill arch and pale ventral fins. *T. jordanus* is probably a species endemic to the Red Sea developed from its relative in the Indian Ocean.

## INTRODUCTION

THE FAMILY GEMPYLIDAE has been relatively poorly studied. Around 13 genera have been recorded, mostly from the warm seas, from depths of about 100 to 400 fathoms in the Mediterranean, North Pacific and Indian Ocean (Wheeler, 1969). No members of this family had been reported from the Gulf of Aqaba or the Red Sea (Marshall, 1952; Ben-Tuvia and Steinitz, 1952; Steinitz and Ben-Tuvia, 1955; Fowler, 1956; Klausewitz and Nielsen, 1965; Tortonese, 1968; Aron and Goodyear, 1969; Dor, 1970; Botros, 1971, till 1982 when Ben-Tuvia recorded a specimen from genus *Thyrsitoides* (*T. marleyi*) in the Gulf of Aqaba (article 26 in the 9th Report of H. Steinitz Marine Biology Laboratory).

The Red Sea represents a more or less isolated body of water in which a high percentage of endemic fish (Marshall, 1952) have been recorded as new species. These show great similarities with closely related species from surrounding waters.

The present description of a new species from the genus *Thyrsitoides* most probably pertains to such an endemic species since it shows such close similarity with *Thyrsitoides marleyi*, the dissimilarities possibly being adaptations from the ancestral stock in the Indian Ocean.

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### **Thyrsitoides jordanus** sp. nov. (Pl. I)

*Diagnosis:* A species of *Thyrsitoides* with the following combination of characters: bifurcated lateral line; two separate dorsal fins, the first with 18 spines, the second with 2 spines and 10 rays; anal fin with 2 spines and 10 rays; 6 finlets behind dorsal and anal fins; ventral fin well developed; caudal fin forked; eyes moderately telescopic with interorbital groove; scales present in well defined patches on the body; colour brown dorsally, ventrally silver, sides silver and brown.

*Description:* All descriptions of this species are based on examination of the holotype caught by a local fisherman from a depth of over 100 m and deposited in the Marine Science Station, Aqaba.

The fish is about 115 cm in total length. The elongated body is slightly compressed.

Cleft of the mouth wide. Lower jaw protrudes in front of upper jaw with two isolated curved teeth at anterior end. Both jaws bear

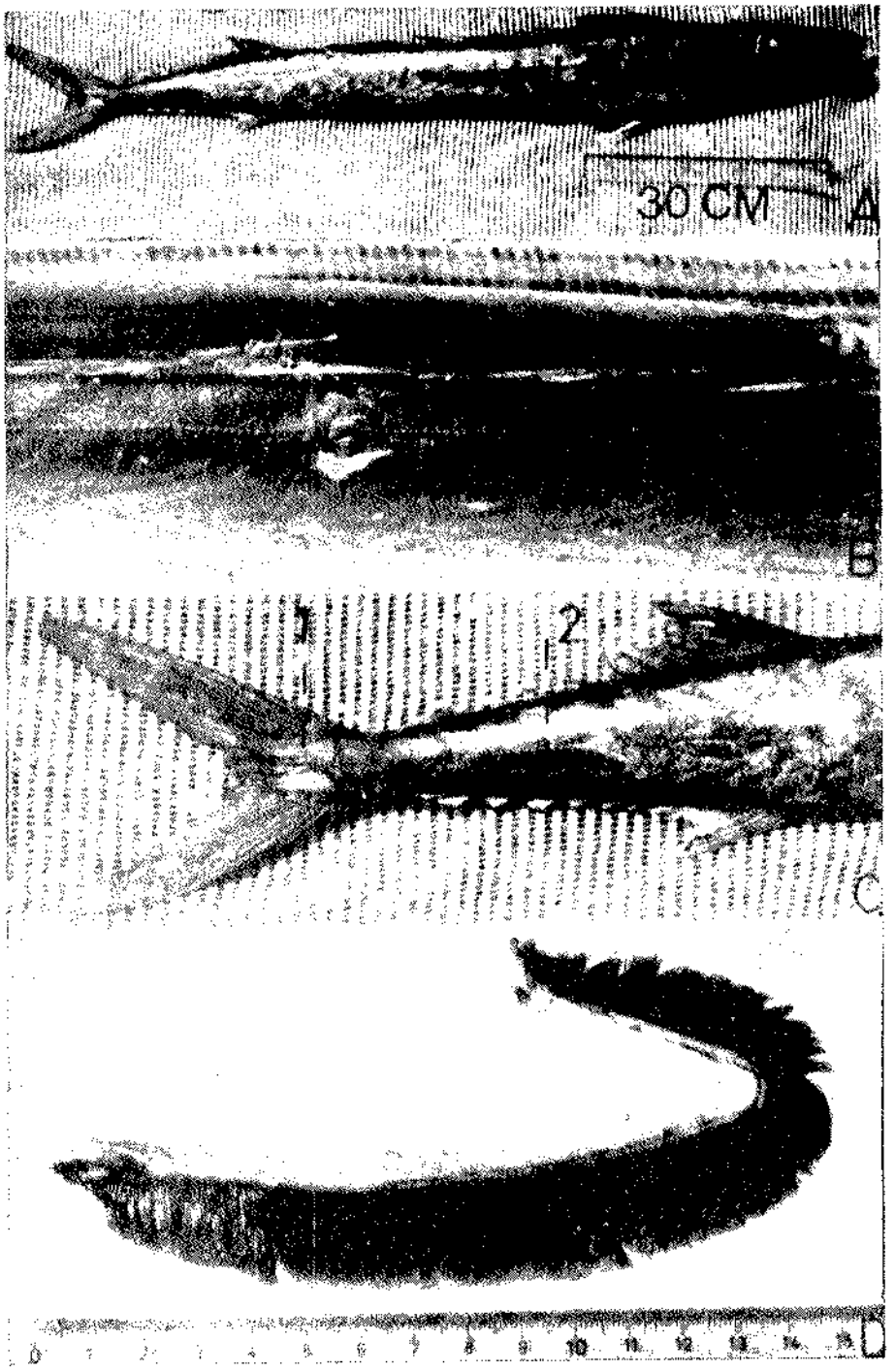


PLATE 1 A. View of the complete specimen of *T. jordanus*. B. Dorsal view of the part of the body showing the asymmetrical termination of the upper braneches of the lateral lines. C. Posterior portion of the *T. jordanus* showing: 1. Fleshy keels at caudal base and 2. Ridges along the body and D. First gill arch of the *T. jordanus* showing rudimentary gill rakers.

sharp conical teeth, the upper jaw 32, the lower 17, on each side. Three pairs of well developed, long fangs borne on intermaxillary bones. These teeth are highly irregular in form. On one side there is a short depressible first tooth followed by a long erect median tooth, the third is again depressible and intermediate in size. On the other side the first is short and erect, the next being longer and depressible and the third being the longest and erect. On the whole, the depressible teeth on each side are smaller than the erect on the other. Palatine teeth present. Tongue has anterior villiform margin. Maxillae exposed. Mandible extends beyond maxilla to about centre of the eye. Eyes large, moderately telescopic, with an interoribital groove on dorsal surface of head.

TABLE 1. *Dimensions of* T. jordanus *sp. nov. as percentage of standard length* (102 cm)

| | | | |
|---|---|---|---|
| Depth of body | 11.76 | Pectoral length | 10.45 |
| Length of head | 26.66 | Pelvic length | 6.04 |
| Width of head | 9.24 | Dorsal first base | 46.6 |
| Eye diameter | 4.9 | Dorsal second base | 8.3 |
| Snout length | 12.45 | Interdorsal space | 1.18 |
| Interorbital space | 4.9 | Caudal peduncle | 9.5 |
| Postorbital length | 9.31 | Anal base | 5.79 |

Two pairs of nostrils present. Anterior pore-like, posterior large and slit-like. Operculum smooth, without spines. Seven branchiostegals. Gill arches long. No gill rakers apparent, but numerous sharp spines occur along surface of gill arch (Pl. I D).

Two dorsal fins situated close together. First originates above pectoral fin and has 18 spines. Five anterior spines nearly equal, the rest in decreasing order of length, these spines originate inside a groove running along the base of the first dorsal fin. Second dorsal fin with 2 spines and 10 soft rays, followed by 6 finlets. Pectoral fin well developed with 14 rays, the upper ray reaching between the 6th and 7th dorsal spines. Ventral fin starts under the third dorsal spine (behind pectoral), with 1 spine and 5 soft rays. Anal fin originates under the second dorsal with 2 spines and 10 rays, followed by 6 finlets. All finlets with web-like membraneous attachment to body. Last finlets on dorsal and ventral side longer, ending some distances away from start of caudal fin. Caudal peduncle cylindrical and slender as compared to the slightly compressed body. Two fleshy keels present at the base of the caudal fin on both sides of the body (Pl. I C). Caudal fin forked, ventral lobe longer. Cloaca situated under the last spine of the first dorsal fin.

Lateral line begins above operculum and bifurcates under 4th dorsal spine, the upper branch running under the dorsal profile, upto the 13th dorsal spine on one side and the 15th on the other (Pl. I B). The lower branch curves down to above the pectoral fin and then runs straight to the middle of the caudal peduncle, along the middle of the body.

Sides of body scaleless, except for a triple row of small thin cycloid scales on the lateral lines. Thin lanceolate scales present in dense patches on the caudal peduncle, at the base of the pectoral fin, in a postorbital crescent, behind the upper angle of the operculum and around the anal vent. Long bands of these scales occur dorsally from the occipital and ventrally from the operculum to the caudal fin base.

Two rows of well marked ribbings present, arranged in "herring-bone" fashion on two sides along the length of the lower branch of the lateral line. An X-ray photograph showed that these are formed by bones stretching from the dorsal and ventral edges to the vertebral column. There are no visible signs of attachment to the latter. Vertebral count 34 (by X-ray photograph).

*Colouration:* Body dusky brown dorsally, ventral surface silver, sides brown and silver. A crescent shaped silver patch present, behind the eye. Ventral fins pale, the rest dusky. First dorsal fin with black and white membrane.

*Comparison with other species: Thyrsitoides jordanus* shows very close similarities with *Thyrsitoides marleyi* Fowler. However a close comparison of the two, conclusively separate them into different species.

1. Though both species have a bifurcated lateral line, in *T. marleyi* the upper branch ends near the soft dorsal fin, whereas in *T. jordanus* it is shorter and ends asymmetrically on both sides (Pl. I B) the lower branch instead of continuing up to the caudal base as in *T. marleyi* ends in the middle of the caudal peduncle.

2. Beyond the end of the lateral line, there are two well marked fleshy keels on each side of the caudal base (Pl. I C), such keels have not been reported in *T. marleyi*.

3. In both species the scales are thin and ill defined. In *T. jordanus*, we found an additional patch of thin lanceolate scales in the supra-post opercular region. Moreover, except for a triple row of cycloid scales along the lateral line, scales are absent on the sides, unlike in *T. marleyi*, where such scales are sparsely distributed in this area.

4. The fin count in *T. marleyi* is dorsal XVIII, II+11+6; anal II+11+6. In *T. jordanus* the fin count was found to be dorsal XVIII, II+10+6: anal II+10+6.

5. Large steel-black disks have been reported along the length of the body, by Fowler. We found no such disks, but there are two rows of ribbings, which form ridges along the body.

6. The gill arch in *T. marleyi* is also spinescent. The number of larger spines is however, less than in our specimen. Moreover, in *T. jordanus* the smaller spines are closely packed and form pouch like upraisings along the gill arch unlike in *T. marleyi* where they are widely set.

7. The number of teeth in both jaws vary in the two species. In *T. marleyi* 23 teeth have been counted above and 25 below. In our specimen there are 32 on the upper and 17 on the lower. The internal teeth in *T. jordanus* also differ from *T. marleyi* as described previously.

8. Primarily both species have a deep brown colour. *T. jordanus* has a silvery under surface with a mottled silver and brown sides. The fins in *T. marleyi* are all dark brown. *T. jordanus* has a pale ventral fin and a light brown anal fin.

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