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DESCRIPTION OF A NEW JAW-FISH, *OPISTHOGNATHUS REX* FROM THAILAND (PISCES : OPISTHOGNATHIDAE)

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ABSTRACT

While sorting and identifying fishes collected from a marine landing from the Inner Gulf of Thailand for production of fishmeal, the author noticed that two specimens of jaw-fishes of the genus *Opisthognathus* differed from allied species in the combination of 53-56 scales in lateral series, dorsal with 10-11 spines and 12-13 branched rays, anal with 2 spines and 11 branched rays; head, body and fins immaculate, vertical fins very dark with a lengthwise light crossband at their bases. Examination of the specimens has led the author to conclude that they are new to science and the name *Opisthognathus rex* n. sp. is proposed.

Introduction

Taxonomic studies of Opisthognathidae are rather rare and only single or few specimens of each species are deposited in most museums. Members of the family are recorded from all tropical coasts of the world (McKay, 1969). In Thailand, this group of fishes was hitherto represented only by *Opisthognathus macrolepis* Peters, 1866, from Bangkok (type locality); Günther (1880) later reported the same fish from the Philippines. Unfortunately, it was not listed by Suvatti (1950) nor by De Beaufort and Chapman (1951). Recently, in 1969, a 91.0 mm SL specimen of *O. rosenbergi* Bleeker was given to the author, collected by Dr. G. Kühlmorgen-Hille from the fish harbour of Trat Province in the Gulf of

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Thailand. This specimen is now in the Fish Collection of the Marine Fisheries Laboratory, Bangkok (MFLB. 1970-7-22-1). The material of *Opisthognathus* from the Inner Gulf of Thailand which constitutes the basis of this paper represents a third species of jaw-fish known from Thailand. The specimens are not identical with any previously known species and they are described here as a new species, ***Opisthognathus rex***.

Dr. R.J. McKay tells the author *(in litt.)* that the genera *Gnathypops* (in which the present specimens could be placed) and *Tanya* will not be recognised as such but will be synonyms of *Opisthognathus* in the revision of the family currently undertaken by Dr. W. Smith-Vaniz.

Opisthognathus rex n. sp.

(Figure 1, Tables 1-2)

Study material: Holotype, MFLB. 1975-6-17-1, male (Fish Reference Collection, Marine Fisheries Laboratory, Department of Fisheries, Bangkok), 83.0 mm SL, collected at Chon Buri-Khlong Dan in the Inner Gulf of Thailand, on 16 June 1974. Paratype, MFLB. 1975-6-17-2, male, 79.1 mm SL (same data as the holotype).

Diagnosis: An opisthognathid with hind edge of maxillary truncate and terminating before hind border of preopercle; scales in lateral selies 53-56; dorsal X-XI, 12-13; anal II, 11; depth 3.47-3.56 in standard length; longitudinal eye diameter 2.90–2.92 in head; interorbital 3.3–3.4 in eye. Head, body and fins immaculate; vertical fin dark and with a distinct light crossband at their bases.

Description: For body and fin shape see Figure 1; morphometric data are given in Table 1. In the following description, figures in parenthesis are for the paratype where it differs from the holotype.

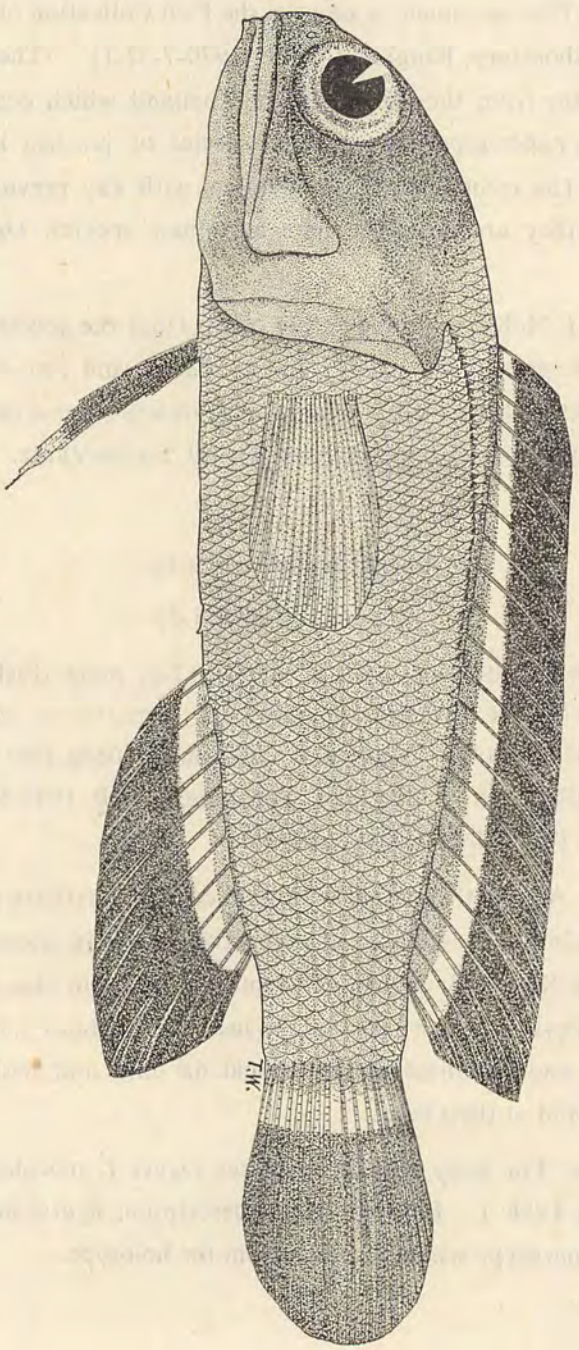

Figure 1. *Opistognathus rex* n. sp., holotype, MFLB. 1975-6-17-1, male, 83.0 mm SL., from the Inner Gulf of Thailand.

Table 1. Measurements (in mm) with their proportional measurements in percent of standard lengths (in brackets) of *Opisthognathus rex* n.sp.

Characters	Holotype, MFLB. 1975-6-17-1	Paratype, MFLB. 1975-6-17-2
Total, length	102.5 (123.493)	100.5 (127.054)
Standard, length	83.0	79.1
Body depth at origin of dorsal fin	23.3 (28.072)	22.8 (28.824)
Head, length	29.6 (35.663)	29.2 (36.915)
Head, width	18.5 (22.289)	15.6 (19.722)
Caudal peduncle, depth	10.6 (12.771)	10.1 (12.769)
Snout, length	5.3 (6.385)	4.5 (5.689)
Longitudinal diameter of eye	10.2 (12.289)	10.0 (12.642)
Interorbital, width	3.0 (3.614)	3.0 (3.793)
Postorbital, length	18.5 (22.289)	19.9 (25.158)
Upper jaw, length	19.7 (23.735)	18.7 (23.641)
Lower jaw, length	16.4 (19.759)	14.9 (18.837)
Predorsal, length	31.0 (37.349)	31.0 (39.191)
Preanal, length	50.3 (60.602)	49.3 (62.326)
Prepectoral, length	30.0 (36.144)	28.7 (32.283)
Prepelvic, length	24.2 (29.157)	24.6 (31.100)
Dorsal base, length	51.5 (62.048)	48.7 (61.568)
Anal base, length	22.0 (26.506)	21.8 (27.560)
First dorsal spine length	5.1 (6.145)	5.0 (6.321)
Eleventh (holotype) or tenth (paratype) dorsal spine, length	9.8 (11.807)	10.6 (13.401)
Ninth (holotype) or tenth (paratype) dorsal ray length	14.3 (17.229)	14.1 (17.826)
Eighth anal ray, length	16.0 (19.277)	16.0 (20.227)
Pectoral, length	18.5 (22.289)	18.5 (23.388)
Palvic, length	19.9 (23.976)	18.5 (23.388)
Caudal, length	19.5 (23.494)	21.4 (27.054)
Longest gill raker, length	4.0 (4.819)	5.0 (6.321)

Body robust, flabby, subcylindrical anteriorly, tapering and fairly compressed posteriorly. Depth of body greatest below origin of first dorsal fin, 3.56 (3.47) in standard length, least depth at caudal peduncle 2.79 (2.92) in head. Head large, apparently rounded, its length 2.80 (2.71) in standard length, its width 1.60 (1.87) in its length. Eyes notably large, directed upwards and forwards, close together, their longitudinal diameter 2.90 (2.92) in head. Interorbital narrow, bony, 3.4 (3.3) in eye. Snout short, obtuse, 1.92 (2.22) in eye. Front nostril small, situated at midlength of snout, its posterior edge with a skiny

flap, forming the lid of the aperture, posterior nostril larger and at the anterior edge of eye. Mouth large, almost horizontal, gape situated below lower edge of eye, lower jaw included when mouth closed. Maxillary greatly dilated posteriorly and truncate behind, terminating at midlength of postorbital, its length 1.50 (1.56) in head. Tongue large, thickened, with strong musculature, pointed at free tip. Teeth small, uniform caniniform and fixed, in a single row in jaws, posterior ones smaller; 28-31 (26-28) teeth on each ramus of upper jaw and 27 (28-30) on lower jaw, teeth absent at extreme tips of both symphyses, leaving a small notch. A few similar but curved teeth present behind upper symphysis, while at the lower symphysis there exists a second row of 3-5 (1-3) teeth. Vomer, palatine and tongue edentulous. Preopercular edge evenly rounded behind; subopercle narrow, vertically inserted behind preopercle and below opercle. Opercle ending in a narrowly rounded flap at upper margin. Gill opening very wide and continued well forwards ventrally. Gill membrane joining with that of the opposite side and free from isthmus.

Dorsal fins continuous, originating above base of pelvic fins, with 11 (10) flexible spines and 12+1 (13+1) branched rays; spines and rays gradually increasing in length to the ninth (tenth) dorsal ray which is longest. Anal with 2 flexible spines and 11+1 branched rays, similar to but slightly higher than dorsal, its first spine inserting below first dorsal ray and its last ray vertically a little before last dorsal ray. Dorsal and anal covered with thin skin especially near bases. Pectorals broadly rounded with 19 (20) rays, their length 1.60 (1.58) in head. Pelvics normal, inserted a little before pectoral or about opposite the origin of the dorsal, fins close together, slendered pointed, with 1 flexible spine and 5 rays; the second ray filamentous, its length 1.49 (1.58) in head, innermost ray shortest. Caudal 1.54 (1.36) in head, rounded, with 16 rays. Gill rakers lanceolate, 9 on upper arch, 1 in angle, and 18 (19) on lower arch; longest gill raker distinctly longer than corresponding gill filaments.

Scales small, cycloid; body and anterior part of pectoral scaly; all of head, isthmus, between pelvic fin base and inner axil of pectoral naked. Predorsal scale rows 9, longitudinal scale rows along middle of side 53 (56), plus 3 on caudal fin. Transverse scale rows from anal origin to anterior dorsal rays 18 (19). Circumpeduncular scale rows 22 (24). Lateral line ascending, and close to dorsal profile, terminating below first dorsal ray or nearly so.

Colour after one year preserved in formalin: body, head, and fins immaculate; head uniform margaritaceous, body overall dusky, but underside little paler. Vertical fins dark with a prominent straight light bars across their bases. Pectorals hyaline. Pelvics darkish, outer half of fins lighter.

Live colour unknown, but probably dark violet or dark blue, vertical fins and inner half of pelvics much darker.

Etymology: The name *rex* is respectfully given in honour of H.M. King Bhumibol Adulyadej of Thailand in recognition of his interest and patronage of research in many fields, including those of agriculture and fisheries.

Remarks: On the basis of scale and fin-ray counts (which were the primary features utilized by DE BEAUFORT and CHAPMAN (1951) to separate their Indo-Australian species of the *Gnathypops* group), this new species is most like *Opisthognathus versluysi* Weber, *O. macrolepis* Peters and *O. rosenbergi* Bleeker. In lateral scale count it agrees well with *O. versluysi* and *O. macrolepis* but it has fewer scales than *O. rosenbergi*; in dorsal and anal fin-ray counts it is intermediate between *O. macrolepis* and *O. rosenbergi* but higher than *O. versluysi* (see Table 2). The enummerations are open to question, being based on single or very few individuals; however, the new species differs from all other of this area in its colouration. Its immaculate head, body and fins, with the characteristic light bands at the bases of the deep black dorsal, anal and caudal fins, are not found in other species.

Table 2. Comparison of certain Indo-Australian species of *Opisthognathus*.

Species of *Opisthognathus*	Scales on lateral series	Dorsal	Anal
O. versluysi Weber	ca 50	XII, 10	II, 10
O. macrolepis Peters	56	XI, 11	II, 11
O. rex n.sp.	53-56	X-XI, 12-13	II, 11
O. rosenbergi Bleeker	66-69*	X, 14(15)	II, 13(14)

* 76 DAY (1876 : 266).

Among Japanese species, *Opisthognathus rex* most resembles *Stalix histrio* Jordan and Snyder and *Gnathypops evermanni* Jordan and Snyder, which also have a light bands on the contrasted black vertical fins, but it differs from these two species in the number and position of the bands as well as in other minor colour details on the head and body. *Stalix histrio* has peculiar Y-shaped anterior dorsal spines, whereas they are all simple in *O. rex*. Besides the above differences the spinous part of the dorsal fin of both Japanese species is much shorter than its soft part, whereas that of *O. rex* is subequal.

Acknowledgements

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