Description of Two New Genera and Four New Species of Triplefins (Pisces: Tripterygiidae) from the Tropical Eastern Pacific

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The family Tripterygiidae contains small bottom-dwelling blennioid fishes characterised by three separate dorsal fins. These fishes are common inhabitants of tropical and subtropical reefs in all seas. The family contains an estimated 20 genera and 120 species, including many which remain undescribed. In spite of their abundance, both in nature and in museum collections, the group is poorly known and a critical need for revision exists. The main purpose of the present paper is to provide names for four new species that will be featured in a book on tropical eastern Pacific fishes now in preparation by the authors. The specimens were obtained by us during field studies in the eastern Pacific during 1990.

Type specimens are deposited at the National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM) and the Western Australian Museum (WAM), Perth.

Counts and morphometric proportions in parentheses refer to paratypes if different to holotype.

Axoclinus nigricaudus n. sp.

Fig. 1

Holotype: USNM 316797, male, 33.8 mm SL, near Pichilingue, Baja California, Mexico (approximately 24°16'N, 110°20'W), 0-3 m depth, rotenone, **G. Allen** and **D.R. Robertson**, 13 June 1990.

Paratype: WAM P.30233-001, 30.5 mm SL, near Pichilingue, Baja California, Mexico (approximately 24°16'N, 110°20'W), 0-3 m depth, rotenone, **G. Allen** and **D.R. Robertson**, 12 June 1990.

Description

Dorsal rays III-XII (XIII)-10 (11), all segmented rays unbranched; anal rays II,18; pectoral rays 15, uppermost and lower seven unbranched; pelvic rays I,2; segmented caudal rays 13 (14), the middle nine branched; lateral line with 15 (16) tubed scales followed on row below by 18 (19) notched scales; total scales in longitudinal series 36; gill rakers on first arch 1 + 6.

Body elongate, the depth 18.0 (17.0); head 31.1 (31.5); snout short and blunt, 9.5 (8.2), all as percentage of standard length. Anterior nostril opening in a short tube with lanceolate posterior flap or cirrus, not reaching posterior nostril when depressed; orbital cirrus absent; a dense band of teeth in each jaw, the outermost row in upper jaw enlarged and somewhat canine-like; outer row teeth in lower jaw only slightly larger than the teeth behind. Scales ctenoid; scales absent on head, breast, belly and base of pectoral fin.

Colour in alcohol: generally whitish with five oblique brown to blackish bars on side including black band encircling caudal peduncle at base of caudal fin; caudal fin black; other fins profusely covered with melanophores resulting in overall dusky appearance.

Etymology

Named *nigricaudus* (Latin for «black-tail») in reference to the caudal fin colouration.

Remarks

This species was briefly discussed by **Thomson** et **al.** (1979), who referred to it as an undescribed *Axoclinus*, with the common name of Cortez Triplefin. They mentioned that it was the most abundant tripterygiid in the Gulf of California and differed from the only other *Axoclinus* in the region, *A. carminalis* (Jordan and Gilbert), by the absence of orbital cirri and possession of five rather than four dark bars.

Crocodilichthys n. gen.

Description

A genus of tripterygiids characterised as follows: dorsal rays III-XVII-12 or 13, segmented rays branched except first and last 3-5 rays; anal rays I or II,25 or 26; pectoral rays 15; tubed lateral-line scales 19 or 20 with 17-23 notched scales posteriorly (but not always in continuous series) ; total scales in longitudinal series 42-47; orbital cirrus absent; head, breast, belly, and base of pectoral fin scaleless.

Type species: *Crocodilichthys gracilis* Allen and Robertson (description below).

Etymology

The only known species in the genus is commonly known as the Lizard Triplefin, thus the name *Crocodilichthys* (*crocodilus* is Latin for lizard).

Crocodilichthys gracilis n. sp.

Fig. 2

Holotype: USNM 316798, male, 51.5 mm SL Los Islotes, Isla Partida, Gulf of California, Mexico (approximately 25°02'N, 110°32'W), 10-12 m depth, rotenone, **G. Allen** and **D.R. Robertson**, 16 June 1990.

Paratypes: USNM 316799, 48.2 mm SL, near Pichilingue, Baja California, Mexico (approximately 24°16'N, 110°20'W), 0-3 m depth, rotenone, **G. Allen** and **D.R. Robertson**, 13 June 1990 ; WAM P.30231-001, 45.5 mm SL, collected with USNM paratype.

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Fig. 1. - *Axoclinus nigricaudus,* holotype, 33.8 mm SL, near Pichilingue, Baja California, Mexico.
Axoclinus nigricaudus, holotype, 33,8 mm LS, près de Pichilingue, Basse Californie, Mexique.

Fig. 2. - Underwater photo of *Crocodilichthys gracilis,*about 45 mm TL, Gulf of California, Mexico.
Photographie sous-marine de *Crocodilichthys gracilis,* environ 45 mm LT, Golfe de Californie, Mexique.

Description

Dorsal rays III-XVII-12 (12 or 13), segmented rays branched except first and last four rays (first and last three to five rays); anal rays II,25 (I or II, 25 or 26); pectoral rays 15, upper two and lower seven unbranched; pelvic rays I,2; segmented caudal rays 14, the middle eleven branched; lateral line with 19 (20) tubed scales followed two rows lower by 21 (17-23) notched scales; total scales in longitudinal series 47 (42-46); gill rakers on first arch 1 + 7 (1 + 7-8).

Body elongate, the depth 16.7 (15.8-18.3); head 26.4 (26.3-29.7); snout short and somewhat pointed, 6.4 (7.7-7.9), all as percentage of standard length. Anterior nostril opening in a short tube with leaf-like posterior flap or cirrus, not reaching posterior nostril when depressed; orbital cirrus absent, although microscopic papillae on upper rim. A dense band of teeth in each jaw, the outermost row enlarged and somewhat canine-like. Scales ctenoid; head scaleless; scales absent on breast, belly and pectoral fin base.

Colour in alcohol: generally pale tan or whitish with five oblique brown bars on side and prominent black band encircling caudal peduncle, its upper half about twice width of lower half; fins overall pale, but profusely covered with pepper-like melanophores; nasal cirri blackish.

Etymology

Named *gracilis* (Latin for «slender») in reference to the elongate body shape.

Remarks

This species was discussed by **Thomson** et **al.** (1979) who referred to it as an undescribed genus and species of tripterygiid with the common name of Lizard Triplefin. They reported that it is endemic to the Gulf of California, inhabiting steep rocky coastlines to a depth of at least 38 m.

Enneanectes reticulatus n. sp.

Fig. 3

Holotype: USNM 316796, male, 41.6 mm SL, near Pichilingue, Baja California, Mexico (approximately 24°16'N, 110°20'W), 0-3 m depth, rotenone, **G. Allen** and **D.R. Robertson**, 13 June 1990.

Paratype: WAM P.30232-001, 35.4 mm SL, near Pichilingue, Baja California, Mexico (approximately 24°16'N, 110°20'W), 0-3 m depth, rotenone, **G. Allen** and **D.R. Robertson**, 12 June 1990.

Description

Dorsal rays III-XII-9, segmented rays branched except first two rays (first and last rays in paratype)); anal rays II,18; pectoral rays 15, uppermost and lower seven unbranched; pelvic rays I,2; segmented caudal rays 13 (14), the middle nine branched; lateral line with 15 tubed scales followed two rows lower by 18 (19) notched scales; total scales in longitudinal series 33 (34); gill rakers on first arch 1 + 6.

Body elongate, the depth 16.1 (18.4); head 30.0 (31.1); snout short and relatively blunt, 9.1 (8.5), all as percentage of standard length. Anterior nostril opening in a short tube with leaf-like posterior flap or cirrus, not reaching posterior nostril when depressed; orbital cirrus broad and short, somewhat rounded. A dense band of teeth in each jaw, the outermost row enlarged and somewhat canine-like. Scales ctenoid except cycloid on side of belly; head scaleless except for small patch of scales on upper opercle; scales absent between anal fin origin and base of pelvic fins; pectoral fin base also lacking scales; spinules present on upper rim of orbit, also microscopic spinules on nape and interorbital.

Colour in alcohol: generally pale tan or whitish with dusky margins on scales forming network pattern; four brown bars on side and black band encircling caudal peduncle at base of caudal fin; fins dusky due to pepper-like melanophores; body bars extend on to basal part of dorsal fins; outer half of caudal fin dusky blackish

Fig. 3. - *Enneanectes reticulatus,* holotype, 41.6 mm SL, near Pichilingue, Baja California, Mexico.
Enneanectes reticulatus, holotype, 41,6 mm LS, près de Pichilingue, Basse Californie, Mexique.

Etymology

Named *reticulatus* (Latin for «net-like») in reference to the characteristic network pattern on the body.

Remarks

This species was discussed by **Thomson** et **al.** (1979) who referred to it as an undescribed *Enneanectes* with the common name of Network Triplefin.

Taboguilla n. gen.

Description

A genus of tripterygiids characterised as follows: dorsal rays III-XIII-10 to 13, segmented rays branched except first; anal rays II,18 to 21; pectoral rays 17; tubed lateral-line scales 24-30; total scales in longitudinal series 34-37; orbital cirrus relatively long and lanceolate; two to three enlarged canines in outer row on middle portion of each side of lower jaw; preopercle and opercle with small ctenoid scales except on lower parts;.cyloid scales present on side of belly and in front of anus; scales present on pectoral fin base; spinules present on rim of orbits and on dorsal surface of head.

Type species **:** *Taboguilla signata* Allen and Robertson (description below).

Etymology

Named after Isla Taboguilla, the type locality of *T. signata.*

Remarks

The genus also contains *T. corallicola* (Kendall and Radcliffe) of the Galapagos Islands, which was originally placed in *Enneapterygius* Rüppell. However, that genus, occurring in the Indo-west and central Pacific, differs in a number of features including number of tubed lateral-line scales (10-14), number of pectoral rays (usually 14-15), lack of scales on opercle and preopercle, and lack of spinules on head.

Fig. 4. - Underwater photo of *Taboguilla signata,* male, about 55 mm TL, Isla Uva, Gulf of Chiriqui, Panama.
Photographie sous-marine de *Taboguilla signata,* mâle, environ 55 mm LT, Ile Uva, Golfe de Chiriqui, Panama.

Fig. 5. - Underwater photo of *Taboguilla signata,* female, about 45 mm TL, Perlas Islands, Gulf of Panama.
Photographie sous-marine de *Taboguilla signata,* femelle, environ 45 mm LT, Archipel des Perles, Golfe de Panama.

Taboguilla signata n. sp.

Figs 4-5

Holotype: USNM 316800, male, 51.4 mm SL, Isla Taboguilla, Gulf of Panama (approximately 8°49'N, 79°31'W), 3-10 m depth, rotenone, **G. Allen** and **D.R. Robertson,** 27 March 1990.

Paratypes: USNM 316801, 4 specimens, 36.3-46.3 mm SL, Isla Uva, Gulf of Chiriqui, Panama (approximately 7°48'N, 81°45'W), 5-12 m depth, rotenone, **G. Allen** and **D.R. Robertson,** 22 April 1990; WAM P.30229-001, 38.6 mm SL, near Punta Mariato, Panama (approximately 7°13'N, 80°54'W), 5-8 m depth, rotenone, **G. Allen** and **D.R. Robertson**, 20 April 1990.

Description

Dorsal rays III-XIII-11 (10-11), segmented rays usually branched except first; anal rays II, 19 (18-19); pectoral rays 17, upper three and lower six to seven unbranched; pelvic rays I,2; segmented caudal rays 13 (13-14), the middle nine (9-10) branched; lateral line with 26 (24-26) tubed scales followed two rows lower by seven (8-12) notched scales; total scales in longitudinal series 34.

Body relatively elongate, the depth 17.5 (16.9-19.3); head 33.1 (32.2-35.8); snout somewhat elongate and pointed, 9.9 (8.6-12.4), all as percentage of standard length. Anterior nostril opening in a short tube with relatively broad posterior flap or cirrus with a few short finger-like projections; orbital cirrus lanceolate, its length about equal to pupil width (slightly less in females). A dense band of teeth in each jaw, the outermost row enlarged, including two to three canines on middle portion of lower jaw. Scales mainly ctenoid, except cycloid ventrally in front of anus and on side of belly; preopercle and opercle covered with small granular scales except lowermost parts; scales present on pectoral fin base; small spinules present on edge of orbits, margin of opercle, and on nape, microscopic spinules also on dorsal surface of snout.

Colour in alcohol: males generally tan with series of 6-7 large brown blotches (more or less coalesced to form longitudinal band under pectoral fin, becoming definite bars posteriorly); a prominent black spot covering most of caudal peduncle; fins mainly pale except 1st dorsal fin black with two pale spots basally and 3rd dorsal and caudal fin with brown spotting. Females pale tan, nearly whitish with four sets of double brown bars and large black spot at base of caudal fin; 1st dorsal fin dusky; fins mainly pale except faint spotting present on 2nd and 3rd dorsal, anal, and caudal fins.

Etymology

Named *signata* (Latin for «flag-like») in reference to the characteristic marking on the first dorsal fin of the male that is raised periodically in a signaling fashion.

Literature Cited

Thomson (D.A.), L.T. Findley and **A.N. Kerstitch,** 1979. - *Reeffishes of the Sea of Cortez. The rocky-shore fishes of the Gulf of California.* John Wiley & Sons, New York: 302 pages.

Résumé

Description de deux nouveaux genres et de quatre nouvelles espèces de Tripterygiidae (Triplefins) du Pacifique oriental tropical

La famille des Triptérygiidés renferme de petits Poissons de fond, voisins des Blennies, caractérisés par une dorsale divisée en trois parties d'où les noms communs de «Blennies à trois nageoires» ou de «Triplefins». Ils sont abondants dans les récifs de toutes les mers tropicales et subtropicales. La famille compte environ 20 genres et 120 espèces, parmi lesquelles de nombreuses restent à décrire. Bien qu'il soit bien représenté dans les collections, comme dans la nature, le groupe est encore mal connu et nécessite une révision critique. Le but essentiel de cette note est d'attribuer des noms à quatre espèces encore inédites qui doivent figurer dans un ouvrage en préparation sur les Poissons de l'Océan Pacifique oriental tropical. Les spécimens ont été récoltés par les auteurs en 1990, au cours de recherches sur le terrain. Les deux nouveaux genres renferment respectivement une seule et deux espèces. *Crocodilichthys* n. gen. avait été cité auparavant sous le nom commun de «Lézard à trois nageoires» (Lizard Triplefin) et *Taboguilla* n. gen. tire son nom de l'île du Golfe de Panama qui est la localité type de l'espèce nouvelle.

Bien que leurs couleurs soient surtout cryptiques, ces petites espèces pourraient être d'intéressants Poissons d'aquarium.