

OCCASIONAL PAPERS OF THE MUSEUM OF  
ZOOLOGY

UNIVERSITY OF MICHIGAN

ANN ARBOR, MICHIGAN

UNIVERSITY OF MICHIGAN PRESS

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*COELORHYNCHUS MARINII*, A NEW MACROUROID  
FISH FROM ARGENTINA AND SOUTH  
GEORGIA

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ONE of the most interesting of the several new species of Argentine fishes brought by Dr. Tomás L. Marini for study at the University of Michigan is the macrouroid fish here described. Inasmuch as I have made a considerable study of the genus *Coelorhynchus*, to which the species is referable, Dr. Marini kindly permits me to prepare the description. I take pleasure in dedicating the species to him.

This form apparently has not been noted previously.

***Coelorhynchus marinii*, new species**

Holotype, a specimen just 200 mm. in total length (tail complete), 56.0 mm. to anus, collected by the hake trawler "Undine" off the Province of Buenos Aires, lat. 38° 52' S., long. 56° 20' W.; No. 357, Museo Nacional de Historia Natural de Buenos Aires.

One paratype, 208 mm. in total length (tail complete), 57.5 mm. to anus, collected near South Georgia Island by a whaler which was chartered to collect specimens for the Museo Nacional; Cat. No. 95503, Museum of Zoology, University of Michigan.

In the classification of Gilbert and Hubbs (1920: 424-519), this species enters the subgenus *Coelorhynchus*, as it has the teeth of the lower jaw in a band (approximately triserial), the subopercle with rounded margin rather than with an acute flap, snout rather short, the ridges of the head rather weakly armed (for a *Coelorhynchus*), and the anus in normal position. The only respect in which it fails to agree with our characterization of the subgenus *Coelorhynchus* (characters  $A^2$  and  $B^1$  of key) is the height of the first dorsal, which somewhat exceeds the postrostral length of head.

Comparing *C. marinii* with specimens<sup>1</sup> of other members of the subgenus *Coelorhynchus*, we find that it differs markedly from each in some important characters. From *C. coelorhynchus* of the eastern North Atlantic it differs in the much longer dorsal spine and deeper body (both measurements greater instead of less than postrostral length of head); in having the ventral fossa more oval and shorter (less than one-third instead of more than one-half eye), and in being much darker. From *C. carminatus* of the western North Atlantic it differs in the weakly radiating series of spinules on the body scales; in the longer fins (inner pelvic rays covering instead of failing to reach the anal fossa); in the lack of the dark body markings, and in being generally darker. From *C. caribbaeus* of the North Atlantic it differs in having the fins longer; the spinules on the scales in series; the scales in about 5 instead of 2 series between the interorbital ridges, and in having the ventral fossa elliptical, one-third as wide as long. From *C. canus* of the Panama region (Pacific side) it differs in having no median occipital ridge; the under side of head completely scaled instead of being largely naked; the scales between the occipital ridges and on the postorbital ridges profusely covered with spinules; a smaller head (two-thirds instead of three-fourths length to anus); orbit longer instead of shorter than postorbital; first dorsal fin much larger (even the first soft rays equal postrostral length of head). From

<sup>1</sup> Examined by courtesy of the National Museum and the Museum of Comparative Zoology.

*C. scaphopsis*, of the Gulf of California it differs in the same characters, and also in having the median row of spinules on scales not differentiated. From *C. patagoniae* Gilbert and Thompson (in Thompson, 1916: 475, pl. 6, fig. 2), from Chile (not Patagonia proper), it differs in lacking the median occipital ridge; in having no enlarged median row of spinules on the body scales; these rows weakly rather than strongly divergent; the spinules not on well developed ridges; and the lower surface of head completely scaled instead of scaleless.

*Coelorrhynchus marinii* differs chiefly from *C. fasciatus* Günther,<sup>2</sup> the only species of the genus hitherto reported from Argentina, in having the angle of the subopercle rounded (subgenus character); the lower surface of the head scaled; the eye less inordinately enlarged; a definite ventral fossa in advance of the pelvic fins; and the body without bars.

Fortunately the species of *Coelorrhynchus* of the other subantarctic regions have lately been revised, permitting a comparison of *C. marinii* with the other species of the same general distributional province. These reviews cover Chile (Gilbert and Thompson, in Thompson, 1916: 473-476, pl. 6), South Africa (Barnard, 1925: 338-344, fig. 18, pl. 13), and Australia and New Zealand (McCulloch, 1926: 176-181, pl. 46). From those accounts it seems clear that all of the known species of the regions cited belong to subgenera other than *Coelorrhynchus*, and that all differ distinctly from *C. marinii*.

The only other species of macrouroid in Argentina is *Coryphaenoides holotrachys* (Günther).<sup>3</sup> The reference of these species to distinct genera rather belies their similarity, because *holotrachys* is perhaps the most *Coelorrhynchus*-like of the species of *Coryphaenoides*, while *marinii* is one of less modified forms of *Coelorrhynchus*. The species, however, are certainly distinct: *marinii* differs from *holotrachys* in having the suborbital ridge more complete and more strongly armed; no

<sup>2</sup> *Macrurus fasciatus* Günther (1878: 24; 1887: 129, pl. 28, fig. A).—*Coelorrhynchus fasciatus* Thompson (1916: 473); Gilbert and Hubbs (1920: 426); Barnard (1925: 340); McCulloch (1926: 177).

<sup>3</sup> *Macrurus holotrachys* Günther (1878: 24; 1887: 136, pl. 28, fig. B); Lahille (1915: 26, pl. 6).

strengthened median row of spines on the body scales; the dorsal spine not denticulate, and the first dorsal higher than the postrostral length of head.

Fin rays—first dorsal II, 8; pectorals 18–17 (18–18);<sup>4</sup> pelvics 7–7.

The body is rather robust for a *Coelorhynchus* (though less robust than often in the typical subgenus); its greatest depth enters the head 1.3 (1.5) times; its width across pectoral bases is contained 2.2 times in head and equals distance between origins of dorsal and pectoral fins. At a point twice length of head behind tip of snout the depth is contained 2.0 (2.5) times in head, and exceeds the width at that point 2.7 (2.6) times. The dorsal contour of the snout is convex, rising anteriorly at an angle of  $45^\circ$  with the horizontal but posteriorly sloping down to an angle of  $30^\circ$ . The postrostral contour, rising at an angle of about  $20^\circ$  above the horizontal, is slightly concave over the eyes and weakly convex over the nuchal region. Behind the somewhat elevated origin of the first dorsal fin, the dorsal contour is weakly concave. The ventral contour drops at an angle of  $32^\circ$  from tip of snout to mouth, becomes nearly horizontal along the mandible, but definitely and rather evenly convex on either side of the origin of the anal fin. The sides of the head converge in slightly convex lines forward to the rounded anterolateral angle of the snout, where the width is just two-thirds the greatest width of the head; from this angle forward to the base of the prominent terminal plates the outlines are straight, and together form very slightly more than a right angle. The preocular length of snout enters the head 3.15 (3.1) times; the preoral length, from gape, 2.9 (3.1) times. The middle of the length of the head lies at or slightly behind the middle of the pupil.

The ridges of the head are strong, though rather weak for a species of *Coelorhynchus*. The posteroventral angle of the

<sup>4</sup> Counts and measurements in parenthesis are those of the paratype, and are given only when they differ from those of the holotype. The methods of counting and measuring are those adopted by Gilbert and Hubbs (1916: 147–148).

subopercle is rounded, and the thin subopercular margin is fimbriated. The length of the huge oval orbit is contained 2.7 times in the head, 0.9 in snout, 0.95 (1.0) in postorbital. The least interorbital width, which measures 1.4 (1.35) in postorbital, lies above or slightly before vertical from middle of pupil; least suborbital width 2.6 (2.7). The mouth is of moderate size: the length of the upper jaw, which extends to the vertical passing midway between posterior margins of pupil and of orbit (or not quite so far), is contained 3.4 (3.5) times in head. The villiform teeth are in about 6 series in the upper and about 3 in the lower jaw. They are distinctly enlarged toward the symphysis in each jaw but are not definitely enlarged in an outer row. Free portion of barbel, 4.6 (5.0) in postorbital. Branchiostegal rays, 6. The branchiostegal membranes are united in a wide arch, and are fused with the isthmus so as to leave a free fold which medially is only one-fourth as wide as pupil.

The anus is not far removed from the origin of the anal fin: the interspace is contained 5.7 (5.0) times in that from anus to base of outer pelvic ray, which distance is somewhat longer than either the postorbital length of the head or the distance from isthmus to base of outer pelvic ray.

The scaleless ventral fossa is oval in form, is 0.3 as wide as long, extends forward from opposite the ends of the pelvic bases, is contained 3.5 (3.2) times in the orbit, is dark in ground color and punctate with blackish.

Scales in  $6\frac{1}{2}$  series from origin of second dorsal to but not including the lateral line. The spinules on the body scales arise independently, not on ridges. On some scales they approach a quincunx arrangement, but on most scales are more or less definitely aligned into about 10 weakly divergent series. They show but the slightest tendency to become enlarged in a median row. The spinules are mostly long and curved needles; the longest are about half the exposed length of the scale. The scales are moderately reduced in size but remain strongly armed toward the anus.

The nasal fossa is wholly scaleless, but the under surface of the head, excepting the lips and the branchiostegal and gular membranes, is covered with small thin scales bearing rather weak and scattered suberect spinules. The scales between the head ridges resemble those of the body but usually bear shorter spinules which more or less approach the quincunx order in their arrangement. The terminal rostral plate resembles the rostral armature of the star-nose mole: it consists of a median fixed scale and a pair of slightly movable lateral scales, all three studded like a war club with strong spines which are much stronger around the periphery than on the face of the scales; measured over the spines, the whole plate is two-thirds (half) as high as its breadth, which is nearly (or quite) as great as the distance between the terminal plate and the anterolateral angle of the snout. The terminal plate is followed on each side of the snout by 3 to 5 small, irregularly spiny scales along a boneless margin, then by 3 plates which lie on a serrated outwardly projecting limb of the lateral ethmoid bone, around the anterolateral angle of the snout. These 3 plates increase in size and strength to the last one, which is as large and almost as strong as, though flatter than, the median rostral plate. The armature on these plates is like that of the terminal plates: they are studded with spines, strongest peripherally. After a short scaleless interval there follow the subquadrate preorbital ridge scales, uniserial, 7 or 8 (8 or 9), armed like the preceding plates but with the larger spines more erect and increasingly erect posteriorly. This series is continuous with the suborbital scales, of which the first 1 or 3 (2) are uniserial; the biserial section has 4 (4 or 5) scales in the upper and 5 scales in the lower series. The final or preopercular section of the infraorbital ridge is armed by an upper row of 4 and a lower row of 5 scales, plus a terminal scale. These scutes of the suborbital and preopercular sections of the ridge are armed with strong spines which tend to be directed posteriorly, increase in size posteriorly on each scale, and are to a degree arranged in diverging rows. The infraorbital ridge is separated from the

median portion of the orbit by a row of very narrow scales bearing spines largely in one comb-like series. The median superior rostral ridge is lined by 7 (8) oblong scales armed by spines which are small medially but increase in size peripherally, especially backward, and which show a tendency toward alignment in divergent rows. The supranarial ridge, arched upward and inward, is covered by a row of rather small scutes, larger behind, studded with spines which are enlarged peripherally. Of the 5 (6) antorbital ridge scales, the uppermost is large and roundish, the second is smaller, while the others, on the sharp ridge separating the orbit from the narial fossa, are very narrow and have the major spines in approximately uniserial arrangement. The supraorbital ridge scutes bear strong spines, roughly aligned in rows radiating from near the anteroventral corner. The straight postorbital ridge is armed by about 8 scales bearing robust, bluntish spines, which are mostly aligned in two divergent series. The occipital ridges are evenly arched inward from both ends: the least distance between them is contained 1.3 times in the distance between them at either end, and 1.6 times in the interorbital width. The occipital ridge scales bear hooked spines, of which the larger are roughly aligned into a few divergent rows. No definite median occipital ridge or scute is developed. The scales in the lower part of the area between the occipital and postorbital ridges, in two rows, are about as large as the body scales, while the more dorsal scales of this area are reduced in size. Roughly 5 series of scales lie between the occipital ridges. A deep longitudinal groove along which the adjacent spines are enlarged (more evident in the paratype than in the holotype) is separated by 1 row of scales from the supranarial ridge scales and by 1 or 2 rows from the median rostral ridge scales.

The first dorsal spine is sharp but very short. The second spine is rather strong and triangular basally, wholly smooth on the anterior edge, attenuated to a fine thread, decidedly longer than the postrostral portion of the head, measuring 1.2 in head (broken in paratype). The anterior branched rays

are as long as the postrostral length of the head. The first dorsal base enters the interdorsal space 1.45 (1.8) times. The anterior rays of the second dorsal fin are about one-fifth as long as the orbit. The anal fin originates below the middle of the interdorsal space. The length of the weak and rather pointed pectoral fin measures 1.8 (1.75) in head. The outer pelvic ray, elongated into a filament reaching to opposite the seventh (sixth) anal ray, is as long (or 0.9 as long) as the distance between isthmus and anus. The longest inner pelvic ray (broken in holotype) reaches to origin of anal.

The color in alcohol is deep violet, becoming gray on the snout and purplish black on the belly and branchiostegal regions. There are no definite markings on the body. The branchial cavity is lined with black, becoming gray and punctate anteriorly, but almost solid black within a whitish outer border. The buccal cavity is whitish. The fins other than the pelvic are dark gray. The pelvic is blackish on the inner rays, while the outer ray is gray, becoming whitish toward the end of the filament.

MEASUREMENTS IN HUNDREDTHS OF THE LENGTH TO ANUS, following methods proposed by Gilbert and Hubbs (1916: 147-148), firstly of the holotype, 200 mm. in total length and 56.0 mm. long to center of anus, and secondly, in parenthesis, of the paratype, 208 mm. in total length and 57.5 mm. long to anus:

Length of head, 70 (76)	Anus to ventral, 27 (25)
Length of orbit, 27 (29)	Ventral to isthmus, 22 (24)
Postorbital length of head, 24 (25)	Height of second dorsal spine, 58
Width of interorbital, 18 (20)	(—)
Width of suborbital, 10 (10)	Height of third dorsal ray, 50 (—)
Orbit to preopercular margin, 25 (27)	Length of first dorsal base, 19 (18)
Length of snout, 24 (26)	Length of interdorsal space, 28 (32)
Free length of barbel, 6 (5)	Length of pectoral fin, 39 (41)
Length of upper jaw, 22 (23)	Length of outer pelvic ray, 46 (42)
Depth of body, 53 (48)	Length of second pelvic ray, —
Width of body, 35 (35)	(26)
Anal to anus, 5 (5)	

LITERATURE CITED

BARNARD, K. H.

- 1925 A monograph of the marine fishes of South Africa. Ann. S. Afr. Mus., 21: 1-418, pl. 1-17.

GILBERT, CHARLES HENRY, AND CARL L. HUBBS

- 1916 Report on the Japanese macrouroid fishes collected by the United States Fisheries Steamer "Albatross" in 1906, with a synopsis of the genera. Proc. U. S. Nat. Mus., 51: 135-214, pl. 8-11.

- 1920 The macrouroid fishes of the Philippine Islands and the East Indies. Bull. U. S. Nat. Mus., 100, vol. 1, pt. 7: 369-588, fig. 1-40.

GÜNTHER, ALBERT

- 1878 Preliminary notices of deep-sea fishes collected during the voyage of H. M. S. "Challenger." Ann. and Mag. Nat. Hist., (5) 2: 17-28.

- 1887 Report on the deep-sea fishes collected by H. M. S. Challenger during the years 1873-1876. Rep. Sci. Res. Voy. Challenger, (Zool.) 22: i-lxv, 1-333, pl. 1-83.

LAHILLE, F.

- 1915 Sobre dos peces macrúridos de las costas de la Provincia de Buenos Aires. An. Mus. Nac. Buenos Aires, 26: 21-29, fig. 1, pl. 5-8.

MCCULLOCH, ALLAN R.

- 1926 Report on some fishes obtained by the F. I. S. "Endeavour" on the coasts of Queensland, New South Wales, Victoria, Tasmania, South and south-western Australia. Biol. Res. Fishing Exp. "Endeavour" 1909-14, 5 (4): 157-216, fig. 1-4, pl. 43-56.

THOMPSON, WILL F.

- 1916 Fishes collected by the United States Bureau of Fisheries Steamer "Albatross" during 1888, between Montevideo, Uruguay, and Tome, Chile, on the voyage through the Straits of Magellan. Proc. U. S. Nat. Mus., 50: 401-476, pl. 2-6.

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PLATE I

- FIG. 1. Holotype of *Coelorhynchus marinii* Hubbs.  $\times 0.5$ .  
FIG. 2. Anterior part of holotype of *Coelorhynchus marinii* slightly enlarged.

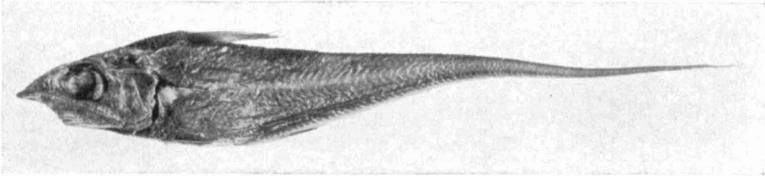


FIG. 1

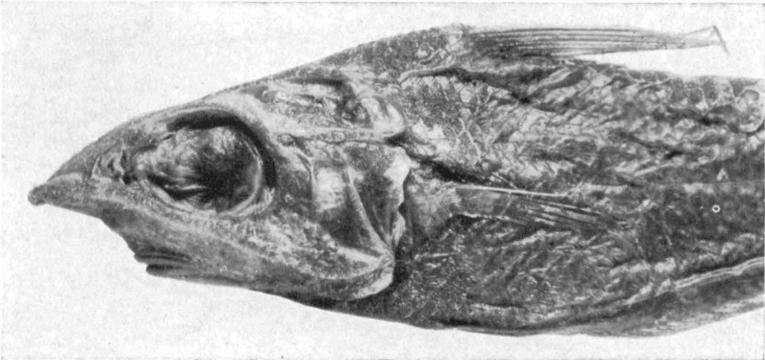


FIG. 2





