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NEW FISHES OBTAINED BY THE AMERICAN MUSEUM CONGO EXPEDITION 1909-1915¹

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The collection of marine fishes obtained by the American Museum Congo Expedition, though comparatively small, contains several interesting new species. Descriptions of these are presented in this paper, while the figures and further details will follow in the final report.

I take pleasure in dedicating two of these new fishes to the members of the Expedition, Herbert Lang and James P. Chapin, in slight tribute to their valued labors in behalf of scientific exploration.

Mustelidæ

Mustelus osborni, new species

Body long, slender, tapering well posteriorly. Depth contained $8\frac{3}{8}$ times in length to end of last caudal vertebra. Head depressed, rather narrow; its width $1\frac{1}{8}$ in its length; length 7 in total body length to last caudal vertebra. Snout moderate, slender in profile. Eye small; front edge of iris midway in head length; pupil apparently circular; nictitating membrane well developed; orbit $3\frac{1}{4}$ in length of snout. Labial folds long; outer $1\frac{1}{8}$ in preoral length, extends forward $\frac{2}{3}$ distance to nostril. Length of inner labial groove contained $1\frac{1}{8}$ times in that of outer. Teeth in about 60 rows in upper jaw, about 55 rows in lower jaw; bases of teeth broad, with produced cusps forming a well-developed median, and more or less basal points at each side; the latter may vary more or less, to be quite obsolete or even absent; edges of all entire, though upper with large median cusp are trifle narrower than the lower; several rows apparently functional in each jaw. Nostril inferior, on snout about midway between eye center and snout tip, width contained about $2\frac{3}{8}$ times in internasal space; front valve produced in a conic point as long as nostril itself. Crown of head broadly convex. Last two gill-openings above pectoral base; length of fourth gill-opening $2\frac{3}{4}$ in snout. Scales tridentate, median point longest; more or less developed parallel keels, each ending in a point; body slightly rough to touch.

Origin of first dorsal a little nearer to snout tip than to origin of second dorsal, or distinctly behind inner angle of pectorals; height of dorsal fin along its front edge slightly less than its basal length. Second dorsal like first dorsal, inserted a little nearer origin of first dorsal than to caudal tip. Anal inserted a little behind origin of second dorsal; fin similar though smaller. Caudal long, $4\frac{1}{2}$ times in total length; subcaudal origin a little in advance of that of upper, lobe moderate. Pectoral width

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$1\frac{3}{4}$ times in its length; hind edge very slightly emarginate. Ventral inserted about midway between origin of first dorsal and that of anal.

Color in alcohol uniform gray-brown above, paler to whitish below. None of the fins edged with dusky, mostly somewhat pale. Iris pale slaty. Teeth whitish.

Length, 752 mm.

TYPE.—No. 8281, A. M. N. H.; Mouth of the Congo; Messrs. Lang and Chapin.

Related to *Mustelus punctulatus* Risso. According to Garman that species has a variegated color-pattern or is marked with small black spots. He says the anterior nasal valve is produced in a rounded lobe, whereas in *Mustelus osborni* it is a conic point. In *Mustelus punctulatus* the labial folds are shorter, or less than half the length of the jaws and the origin of the first dorsal fin is above the inner pectoral angle.

Named for Prof. Henry Fairfield Osborn.

Serranidæ

CENTRARCHOPS, new genus

Body deep, back greatly elevated. Head large. Snout short, conic. Eye large, advanced. Mouth large, inclined, mandible well protruding. Maxillary well developed, ensheathed by preorbital, except for its free terminal expansion, which reaches eye. Supplementary maxillary well developed. Teeth fine, uniform, in bands in jaws, on vomer and palatines, none on tongue. Nostrils together, close before eye. Interorbital narrow. Preopercle edge denticulated. Opercle with 2 flat spines. Gill-rakers finely lanceolate. Gill-membranes narrow, joined, free from isthmus. Pseudobranchiæ well developed. Scales all finely ctenoid, extend over most of fins. Soft dorsal and anal each higher than spinous portions of fins. Caudal broad, slightly emarginate. Pectoral moderate, little shorter than ventral, which is inserted behind pectoral base.

This genus approaches *Lates*, but differs in a much shorter maxillary, the absence of an enlarged spine at the angle of the preopercle edge, and a different physiognomy. It also recalls certain theraponids, like *Coius* and *Mesopristes*, both without palatal dentition. Its superficial resemblance to *Coius polota* Buchanan-Hamilton is striking, even to many characters, as the shape of most of the fins, the maxillary, preopercle, etc. Dark cross-bands, present in both, augment this resemblance.

The type of *Centrarchops* is *chapini*.

(κέντρον, spine; ἄρκος vent, thus *Centrarchus*, the round bass; ὤψ, appearance.)

Centrarchops chapini, new species

Head contained $2\frac{3}{5}$ times in length to base of caudal; depth, $2\frac{1}{10}$. Dorsal X, 19, 1; anal III, 13, 1; pectoral 11, 17; ventral I, 5. Tubular scales 50 in lateral line to caudal base, and about 22 more on latter; 10 scales above lateral line to spinous

dorsal origin, 9 above to base of first soft dorsal ray; 20 scales below lateral line to spinous anal origin; 52 predorsal scales. Head width 2 times in its length; mandible, $2\frac{1}{3}$; fifth dorsal spine, $2\frac{1}{6}$; seventh dorsal ray, $1\frac{2}{3}$; second anal spine, $2\frac{1}{6}$; third anal ray, $1\frac{1}{6}$; least depth of caudal peduncle, $3\frac{3}{4}$; caudal, $1\frac{1}{4}$; pectoral, $1\frac{1}{2}$; ventral, $1\frac{1}{6}$; snout, $4\frac{1}{6}$ in head measured from upper jaw tip; eye, 4; maxillary, $2\frac{2}{3}$; interorbital, $4\frac{2}{3}$.

Body strongly compressed, contour deeply ovoid, with the greatest depth of body behind middle of total length, edges convex. Caudal peduncle rather slender, well compressed, about as long as deep.

Head well compressed, flattened sides not especially approximated above or below; upper profile little more inclined and straighter than lower. Snout rather obtuse, its length $\frac{2}{3}$ its width, its surface convex. Eye large, its hind edge midway in length of head, its diameter slightly greater than length of snout, or interorbital width. Mouth broad, cleft rather short. Lips thick, coriaceous, moderately wide. Maxillary rather small, reaches opposite front edge of pupil, and the expansion 2 in eye. Teeth simple, conic, rather close set, in bands in jaws, which broaden anteriorly; \wedge -shaped patch of similar teeth on vomer, and narrower band on each palatine. Tongue pointed, smooth, free in front. Two large pores on each side of the mandibular symphysis, the posterior large. Nostrils together, close before eye; the front one a vertical wide slit, three times the posterior. Interorbital little convex. Preopercle edge finely denticulate. Preorbital width 3 in eye. Opercle with 2 spines, lower one posterior. Suprascapula with dentate edge.

Gill-opening forward, opposite front edge of eye. Gill-rakers 13+22, their length contained about $1\frac{1}{4}$ in gill-filaments or 2 in eye. Pseudobranchiæ but little shorter than gill-filaments. Isthmus narrow, slender.

Scales above lateral line in series, parallel with its course; below in horizontal series. Head scaled, with exception of snout, maxillary, and end of mandible, which are naked. Cheek with 18 rows of scales across to preopercle angle. Bases of soft dorsal and anal densely covered with fine scales. Base of caudal with fine scales, also pectoral and good portion of ventral. Scales along edges of body smaller than on sides medianly. Scales with 10 to 15 basal radiating striæ; apical denticles in 71 to 78 series and basal elements in 4 to 11 series. Scales in lateral line all much smaller than surrounding body scales and small tubes extend over whole scale exposure.

Spinous dorsal inserted a little behind pectoral origin; fifth spine longest, and edge of each membrane deeply notched. Spines of dorsal and anal strong, heteracanthous. Soft dorsal with front rays longest, fin rounded. Second anal spine longest and third spine longer than first. Soft anal like soft dorsal though much smaller. Caudal broad, slightly convex on hind edge when expanded. Pectoral small, reaches $1\frac{1}{2}$ distance to anal origin. Ventral reaches anal; its spine $2\frac{1}{2}$ in head or 2 in ventral fin.

Color in alcohol, faded dull brownish generally, but little paler below. Each row of scales on trunk with median darker streak or line. Fine broad dark obscure transverse bands on trunk, slightly inclined backward; first on predorsal; second from front of spinous dorsal to close before anal; third from hind part of spinous dorsal to spinous anal; fourth from base of soft dorsal to hind part of soft anal base; last across hind part of caudal peduncle. Hind opercular edge, between spines, neutral-black. Fins brownish. Ventrals neutral-blackish terminally.

Length, 210 mm.

TYPE.—No. 8282, A. M. N. H.; Mouth of the Congo; Messrs. Lang and Chapin.

Only the type known.

Named for Mr. James P. Chapin.

Gobiidæ

Gobius bequaerti, new species

Head contained $3\frac{3}{8}$ times in length to base of caudal; depth $4\frac{1}{8}$. Dorsal VI–I, 81; anal I, 81; pectoral 16; ventral I, 5 (+). Scales 28 in median lateral series from gill-opening to caudal base, and 4 more on latter; 9 scales transversely at soft dorsal and anal origins; 16 predorsal scales. Snout, 4 times in head, measured from upper jaw tip; eye, $3\frac{3}{8}$; maxillary, $3\frac{3}{4}$, interorbital, $5\frac{1}{8}$; head width, $1\frac{1}{8}$ in its total length; second dorsal spine, $1\frac{1}{8}$; seventh dorsal ray, $1\frac{1}{8}$; seventh anal ray, $1\frac{1}{8}$; caudal, 1; least depth of caudal peduncle, $2\frac{1}{8}$; pectoral, $1\frac{1}{8}$; ventral, $1\frac{1}{8}$.

Body elongate, well compressed, deepest about middle of spinous dorsal, and edges all convexly rounded. Caudal peduncle well compressed, least depth $1\frac{1}{8}$ its length.

Head deep, well compressed. Snout obtuse, convex over surface and in profile. Eye large, well advanced, hind edge about midway in head length, about equals snout, greater than interorbital. Mouth large, lower jaw well protruded. Maxillary reaches opposite front of eye. Lips broad. Teeth in bands in jaws, simple, conic, small, outer row enlarged, especially of mandible, where the most posterior of each ramus largest and inclined backward. No teeth on vomer or palatines. Tongue rather narrow, smooth, depressed, free and rounded in front. Nostrils small; front one in small cutaneous tube, about midway in snout length, just below level of lower edge of eye; hind nostril close before front edge of eye, about opposite middle of eye. Interorbital very slightly convex. Preopercle edge entire.

Gill-opening restricted laterally, not extended forward opposite hind preopercle edge. Gill-rakers IV, 1+6 short weak points, barely $\frac{1}{4}$ length of gill-filaments, which are contained $1\frac{1}{8}$ times in eye. Isthmus broad.

Trunk covered with large scales, adherent, in even longitudinal rows, little smaller on caudal base, small and crowded on predorsal extending forward to eyes. Small scales crowded in prepectoral region. Head, except as noted, naked, also breast; cheek with 4 rows of fine close-set papillæ extending from maxillary longitudinally and parallel; a line along preopercle edge; a line down across front of opercle. Scales with 15 to 21 basal radiating striæ; apical denticles 48 to 57; circuli fine.

Spinous dorsal origin well behind head, little nearer that of soft dorsal than to eye; second spine longest and ends of all filamentous and flexible. Soft dorsal inserted midway between front edge of pupil and caudal base, higher posteriorly. Soft anal like soft dorsal. Caudal elongate, median rays ending in point. Pectoral with upper median rays longest, none silky. Ventrals united, with moderate disk.

Color in alcohol brownish generally, slightly paler below. Back with numerous dark streaks and bars, irregular, more or less broken, appearing usually as dark lines vertically on scales, also some extending well down on sides. Along middle of side an obscure darker streak, scarcely a band, but with darker streaks from above invading

its course to form about 5 dark blotches. At caudal base a smaller black spot, very distinct, about size of pupil. Slaty-black blotch close above pectoral origin. Blackish band, little narrower than eye, from its lower edge down across front of cheek, though not crossing isthmus. From blackish shoulder-blotch above pectoral origin, a blackish line extends forward toward eye, another obliquely across opercle above to middle of lower part of cheek, and a third down across opercle toward branchiostegals; another curves across upper base of pectoral, and there are also several short bars or blotches on lower basal portion of pectoral. Dorsals rather finely spotted with dusky. Caudal dusky. Other fins all darker, especially outer portion of anal.

Length, 59 mm.

TYPE.—No. 8283, A. M. N. H.; Mouth of the Congo; Messrs. Lang and Chapin.

Approaches *Gobius dewaali* Weber somewhat in its dentition, though differing in coloration, more inclined mouth, etc.

Named for Dr. Joseph Bequaert.

Blenniidae

Blennius langi, new species

Head contained $3\frac{3}{8}$ times in length to base of caudal; depth, $3\frac{1}{4}$. Dorsal XII, 16; anal II, 17; pectoral 14; ventral 3. Head width, $1\frac{1}{8}$ times its length; snout, $2\frac{2}{8}$; eye 5; maxillary $2\frac{1}{8}$; interorbital $8\frac{1}{2}$; second dorsal spine, $2\frac{1}{8}$; ninth dorsal ray, $1\frac{1}{8}$; fourteenth anal ray, $1\frac{1}{8}$; caudal, $1\frac{1}{8}$; pectoral, $1\frac{1}{8}$; ventral $1\frac{1}{8}$.

Body well compressed, deepest about middle of pectoral, sloping regularly down narrowly behind. Caudal peduncle well compressed, its least depth $2\frac{2}{8}$ in head.

Head well compressed, front profile steep. Snout obtuse, convex in profile and over surface, about as long as wide. Eye well elevated, hind edge about first third in head, its diameter 2 in snout. Mouth inferiorly terminal, lower jaw shorter. Lips broad and fleshy. Maxillary reaches opposite hind eye edge. Teeth uniserial, firm in jaws, slender, compressed, tips rounded, about 28 above and 26 below, excluding canines; a canine above at each side, posteriorly, a little smaller than one at each side below posteriorly. Nostrils small; front one about last $\frac{1}{8}$ in length of snout just below level of eye, with short cutaneous tentacle; hind one a simple pore close before lower front edge of eye. Interorbital convexly elevated, giving rise to a high median rounded cutaneous flap. Supraorbital filament slightly longer than eye-diameter. No nuchal filaments.

Gill-opening moderate, about equal to half of head. Gill-membranes not forming fold across isthmus. Gill-rakers about 11+4, weak short knobs, greatly less than gill-filaments, which are slightly greater than the diameter of eye.

Body with smooth naked skin. Lateral line short, not quite extended as far back as end of pectoral. Dorsal and anal separated from caudal. Dorsals with slight marginal notch; spines flexible, last much shorter than first and not extended near edge of enveloping membrane; front edge of first spine with rather broad cutaneous flap or keel, little broader below. Soft dorsal higher than spinous fin, last rays longest. Anal begins before soft dorsal, its first 2 rays appear as short flexible spines, each terminated with a fleshy bulb; other rays gradually longer posteriorly, none long as those of dorsal, edge of fin notched, and tip of each ray a slender flexible point. Caudal

rounded behind. Pectoral rather large, reaches front of soft anal. Ventral small, with swollen rays terminally, inserted well before pectoral.

Color in alcohol dull brownish generally, with about 6 pairs of obscure darker blotches on back, most of them reflected on bases of dorsals. Under surface of head little paler than upper surface. Distinct pale area on chin. Fins largely grayish; anal dusky basally, tip of each ray broadly pale or whitish.

Length, 83 mm.

TYPE.—No. 8284, A. M. N. H.; Mouth of the Congo; Messrs. Lang and Chapin.

Closely resembles *Blennius pavo* Risso. That species differs in the increased dorsal and anal rays and a dark blue band from the crest on the head through the eye to the throat, which is crossed by three irregular brown bands. *Blennius langi* also resembles the North African *Blennius frater* Bloch, but differs in the short last dorsal spine, more gibbous front profile of the head, higher cephalic crest and simple supraorbital tentacle.

Named for Mr. Herbert Lang.