

little shorter than eye, which is 3 in head; mouth moderate, a little oblique, the lower jaw included, the maxillary extending a little past front of eye, its length about  $3\frac{2}{3}$  in head; preopercle entire; opercular spine well developed; gill-membranes very slightly connected.

Cheeks entirely naked; opercles well sealed; nuchal region and breast naked; lateral line almost complete, anteriorly somewhat arched and concurrent with the back; no black humeral scale; belly scaled like the sides, its scales a little smaller.

Spinous dorsal rather low and short, the outline rounded; soft dorsal long, a little higher than spinous dorsal; anal small, its spines very slender; caudal but little shorter than head; pectoral about as long as head, reaching somewhat beyond tips of ventrals, nearly to vent.

Coloration in spirits precisely like that of *Pæclichthys barratti*, olivaceous, mottled and tessellated with darker olive; a dark streak forward from eye; dorsal and caudal with bands of dark spots; other fins plain.

The single typical example was sent to the Museum from Tabo Creek, a tributary of the Missouri River, near Lexington, Lafayette County, Missouri.

The lateral line in this species and the preceding is so very nearly complete that its deficiency is useless as a generic distinction. Both species are evidently allied to the species called *Boleichthys*. This shows the extremely slight value of the characters used to separate *Nothonotus* from *Boleichthys*. Doubtless all these genera with short anal fin and non-protractile premaxillary (*Pæclichthys*, *Boleichthys*, *Nothonotus*, *Nanostoma* will have to be merged in *Etheostoma*).

The character of the union of the gill-membranes is similarly subject to intergradation among closely related species.

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#### DESCRIPTION OF *Sciæna sciera*, A NEW SPECIES OF SCIÆNA FROM MAZATLAN AND PANAMA.

By DAVID S. JORDAN and CHARLES H. GILBERT.

In several papers in the Bulletin of the United States Fish Commission and the Proceedings of the United States National Museum we have mentioned specimens of *Sciæna vermicularis* from Mazatlan and Panama. In Bulletin of the United States Fish Commission (1881, p. 315) we have given a diagnosis of this species, comparing it with our Pacific *Sciæna*. All these references belong to a species which is not the original *Corvina vermicularis* of Günther, and which until now remains unnamed.

*Sciæna sciera*, sp. nov.

*Sciæna vermicularis*, Jordan & Gilbert, Bull. U. S. Fish Comm., 1881, 315 (not *Corvina vermicularis*, Gunther).

Head,  $3\frac{2}{3}$  (4); depth,  $3-3\frac{1}{2}$  (4). D. X, I, 24; A. II, 7. Scales, 6-50

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to 55-12. Length (29499, Panama), 9 inches. Allied to *S. vermicularis*, *S. chrysoleuca*, &c.

Body oblong, the caudal peduncle slender, the back moderately elevated. Snout rather acute, projecting moderately beyond the premaxillaries, its length  $3\frac{5}{8}$  in head. Anterior profile slightly concave above eye, thence from nape to dorsal steep and rather strongly convex. Mouth of moderate size, little oblique, subinferior, the maxillary extending to rather beyond the posterior margin of pupil, its length  $3\frac{1}{8}$  in head. Teeth in the lower jaw in a rather broad villiform band, the outer teeth not enlarged, similar to the inner teeth. Outer teeth of upper jaw moderately enlarged. Eye medium,  $5\frac{1}{2}$  in head. Interorbital space rather narrow, gently convex, its width  $5\frac{1}{3}$  in head. Cranium not spongy to the touch. Preopercle rather coarsely serrate, the teeth near the angle largest, none of them directed forwards. Gill-rakers thickish, extremely short and small, the longest not longer than nostril.

Scales rather small, the soft dorsal and anal well scaled.

Dorsal spines rather slender and low, the second much stouter than the third, which is longest, 2 in head. Longest soft ray of dorsal  $2\frac{2}{5}$  in head.

Caudal fin irregularly double-truncate, the median rays longest,  $1\frac{2}{5}$  in head, the upper angle not produced. Longest soft rays of anal about half head. Second anal spine robust, rather long,  $1\frac{5}{8}$  in head. Pectorals reaching past tips of ventrals,  $1\frac{1}{8}$  in head. Ventrals  $1\frac{3}{4}$ .

Color steel-gray above, dull-silvery below, everywhere much soiled with dark brown points. Centers of each scale dark brown; these dark spots confluent in narrow but distinct dark stripes which follow the direction of the rows of scales; streaks above lateral line anteriorly running obliquely upwards and backwards; below lateral line horizontal and posteriorly above, and somewhat undulating. Fins plain; the edge of the spinous dorsal and the whole of the anal and ventrals blackish; other fins paler.

This species was found by Professor Gilbert rather abundant both at Mazatlan and Panama, and several specimens were obtained by him in 1881 at each of the two localities. These are numbered 28385, 29229, 29269, 29275, 29337, 29638, 29490, 29499 on the records of the United States National Museum.

This species was at first identified by us with *Corvina vermicularis*, Günther. The latter species is somewhat similar in color and in form, but it has the outer teeth of the lower jaw considerably enlarged and rather robust, and also the upper angle of the caudal produced.

*Sciæna vermicularis* seems to be a rare species. Besides Dr. Günther's type in the British Museum, which we have examined, the only speci-

men known to us is a single one taken by Professor Gilbert at Panama in 1883. This specimen has been destroyed by fire, and the species is not represented in the National Museum.

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DESCRIPTION OF *Zygonectes zonifer*, A NEW SPECIES OF ZYGONECTES, FROM NASHVILLE, GEORGIA.

By DAVID S. JORDAN and SETH E. MEEK.

Head,  $3\frac{7}{8}$ ; depth,  $4\frac{2}{5}$ . D. 7; A. 9. Scales, 36-11. Length (28505, Nashville, Ga.),  $2\frac{3}{4}$  inches.

Body moderately elongate, compressed, the head comparatively broad and depressed, the anterior profile somewhat concave above the eyes, thence a little convex to the dorsal. Head anteriorly rather pointed in profile, the snout nearly as long as eye, which is about half the broad interorbital space and  $3\frac{1}{5}$  in head. Teeth quite small, the outer little enlarged. Scales rather small.

Dorsal fin much smaller than anal, and inserted nearly over the end of the first third of that fin. Anal higher than dorsal, as well as longer, both fins highest in the male, in which they reach very nearly to base of caudal. Insertion of dorsal midway between front of eye and tip of caudal. Caudal rounded, about as long as head. Least depth of caudal peduncle half length of head. Pectorals  $1\frac{1}{2}$  in head, reaching slightly past front of ventrals. Ventrals nearly reaching anal,  $1\frac{3}{5}$  in head.

Color of specimen with highest fins (supposed to be male) dark olive above, with the edges of the scales a little darker; sides somewhat silvery, with 12 sharply defined black cross-bars, not half as wide as the interspaces, nearly vertical, those near the middle of the body a little farther apart and a little more distinct than the others. No longitudinal streaks. Fins without ocelli. Caudal entirely plain. Dorsal and anal with distinct cross-streaks of dark dots.

Other specimens (perhaps females) with the color a little darker; the black cross-bands broader and more sharply defined; a conspicuous black blotch below the eye; fins colored as in the others.

This species is founded on three specimens, all about equal in size, in fine condition, taken by Mr. W. J. Taylor in a tributary of the Altamaha (Upper Suwannee River), near Nashville, Ga., and by him sent to the U. S. National Museum, with *Pœciliichthys quiescens*, *Notropis metallicus*, *Elassoma evergladei*, and other interesting species. The specimen of the latter species, larger than the original types, shows an approach in coloration to *E. zonatum*, showing faint vertical bars and a dusky scapular spot. Its depth is  $4\frac{1}{3}$  in length of body, the form being considerably more elongate and less compressed than in *E. zonatum*. The scales are about 32-15.

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