Color, in alcohol, dark brown above; sides with a silvery luster; belly pale; body everywhere finely punctulate with dark dots; these extend the vertical fins, which otherwise are entirely plain. No black spot base of dorsal nor elsewhere on the fin.

This description is drawn from six specimens, varying in length from to 2 3/4 inches. They were collected in a tributary of the Alabama, at Montgomery, Alabama, by Col. M. McDonald, of the U. S. Fish Commission.

This species is closely related to Notropis ardens, punctulatus, and others constituting the subgenus Lythrurus. The absence of black markings on the dorsal well distinguishes it from most of these.

J. S. NATIONAL MUSEUM, August 13, 1884.

DESCRIPTIONS OF FOUR NEW SPECIES OF PECILICHTHYS IN THE UNITED STATES NATIONAL MUSEUM.

By DAVID S. JORDAN.

Pecilichthys borealis, sp. nov.

Head, 3 3/8 (4 5/8); depth, 5 3/8 (6 3/8). D. VIII, 9; A. II, 7. Scales, 4-53-10; anal line with pores on 15 scales. Length (35747, Montreal, Canada), inches.

Body moderately elongate, somewhat compressed, the caudal peduncle rather long and stout, the general form resembling that of P. artesiacus. P. punctulatus. Head rather heavy, the snout bluntish, rather strongly decurved. Anterior profile gently and somewhat evenly curved. Snout short, about half as long as eye, which is 4 in head. Lateral line horizontal, the lower jaw included, the maxillary extending about to opposite front of pupil, its length 3 3/8 in head. Teeth small. Preopercle entire. Opercular spine strong. Premaxillary not triticate. Gill membranes very slightly connected. A small black pectoral scale. Cheeks, opercles, and nuchal region scaly; breast naked. Scales of moderate size. Lateral line very short, not reaching last spine dorsal, running rather high and slightly arched. Scales of belly those of the sides.

Dorsal fins well separated, unusually short and small; the longest in the largest example (♂ ♂) 3 1/2 in head, in another one (♂ ♂) 2 3/8 in head. Soft dorsal a little higher than spiny dorsal, also unusually small for this genus. Caudal long, truncate or slightly lunate, 1 1/2 in d. Anal low and short, its spines high, the first highest. Pectorals nearly as long as head, reaching past tips of ventrals.

Color in spirits: (male) dark gray (perhaps red in life) somewhat mottled with darker; sides with 11 or 12 very distinct vertical dark bars (probably blue in life), each alternate one usually extending across the back, meeting its fellow of the opposite side; a dark
saddle-like blotch on back between dorsal fins; a dark bar before, behind, and below eye, radiating from eye, the suborbital bar most distinct; head with dark dots; spinous dorsal with a submedian, broad, dark band (otherwise pale); soft dorsal and caudal sharply barred with darker; about 5 dark bars across caudal; pectoral more faintly barred; lower fins pale, plain.

Another specimen, probably a female, is paler and grayer, with the cross-bars narrower and less regular; the markings on the fins are much paler, the first dorsal being without dark longitudinal band.

This species is based on five specimens, in good condition, collected at Montreal, Canada, by Mr. T. J. Doran. It may be known at once from all related species by the small numbers of rays in the fins. In life it was probably one of the most handsomely colored species of this beautiful genus.

2. Poecilichthys quiescens, sp. nov.

Head, 3½ (4½); depth, 6½ (7½). D. XII, 11; A II, 7. Scales, 2-56-10; pores developed on 24 of them. Length (28569, Nashville, Georgia), 2 inches.

Subgenus Boeleichthys, Girard.

Body extremely elongate, little compressed, the caudal peduncle long and rather deep, the back not elevated. Head moderately acute, the snout a little decurved, its length less than that of the eye, which is 3½ in head. Mouth small, oblique, the maxillary reaching front of eye, its length 4 in head, lower jaw included. Teeth rather long. Preopercle entire. Opercular spine strong. Gill-membranes somewhat connected, meeting at an acute angle. No black humeral scale.

Cheeks and opercles scaly; nape and breast closely scaled. Scales rather small. Lateral line running very high, concurrent with the back, its tubes developed about to the front of soft dorsal.

Dorsal fins somewhat connected by membrane.

Spinous dorsal longer and higher than usual in this genus, the longest spines about half length of head. Soft dorsal a little higher and shorter than spinous dorsal. Caudal long, somewhat pointed, its middle rays 1½ in head. Anal much smaller than soft dorsal, its spines rather long and slender. Pectorals shortish, 1½ in head, not reaching to vent or to tips of ventrals.

Color in alcohol dark brown, with darker markings, as in P. cos and related species; a vertical row of small dark spots along base of caudal; dorsals and caudals cross-barred, forming fine checkers; a dusky blotch on front of dorsal; four dark streaks radiating from eye; cheeks and opercles with some dark points.

The type is a single, well-preserved specimen, 2 inches in length, collected in a tributary of the Altamaha River, a branch of the Suwannee, at Nashville, Ga., by Mr. W. J. Taylor.

The relations of this species are apparently with P. cos, from which it differs in the number of dorsal spines and in the greater union of the
3. *Pecilichthys swaini* sp. nov.

Head, $3\frac{2}{3}$ in length; depth, $4\frac{2}{3}$. D. X1, 12; A. II, 6. Scales, 3 or 4-41-7 or 8. Length (35308, Monticello, Mississippi), 2 inches.

Appearance of *Bolichthys*. Body fusiform, rather elongate, the back rather elevated anteriorly, the caudal peduncle moderate, somewhat compressed. Head rather slender and small, the anterior profile rather steep and gently emved, becoming more obtuse at the tip of the snout. Snout short, a little bluntish, its length 5 in head. Eye rather large, $3\frac{1}{2}$ in head. Mouth not very small, oblique, the lower jaw included, the maxillary reaching very nearly to opposite middle of pupil, its length $3\frac{4}{5}$ in head. Teeth rather strong, present on vomer. Preopercle entire. Gill-membranes very nearly separate. Opercular spine strong.


Dorsal fins contiguous but separate, both high, the soft dorsal shorter and higher than the spinous dorsal and much longer and higher than the anal. Longest ray of soft dorsal $1\frac{5}{8}$ in head. Caudal truncate, $1\frac{7}{8}$ in head. Pectorals moderate, $1\frac{1}{10}$ in head, not quite reaching vent. Ventrals cteniforms with them, $1\frac{1}{3}$ in head.

Color in spirits, olivaceous, marbled with darker, the dark markings rather obscure and taking the form of dark quadrate spots about as large as the eye, and alternating so as to give a checkered appearance. The pale interspaces may perhaps have been of some bright color in life. Head with four dark stripes which radiate from the eye. A dark streak on anterior part of opercle. Spinous dorsal with a basal band of pale (crimson in life?); above this a dark band (probably deep blue); the outer edge of the fin broadly pale (scarlet?). Soft dorsal and caudal checkered with light and dark spots. Anal and ventrals plain, apparently bluish, the latter darkest. Pectorals plain. No black humeral spot.

A single specimen, in very good condition, except that the coloration has faded is in the National Museum, from a tributary of Pearl River at Monticello, Miss. The species is a *Pecilichthys*, with the developed lateral line of *Notonotus*.

4. *Pecilichthys beani* sp. nov.

Head, 4 ($4\frac{3}{4}$); depth, $5\frac{2}{3}$ ($6\frac{2}{3}$). D. VIII, 13; A. II, 7. Scales, 3-45-6. Length (35754, Lafayette County, Missouri), $1\frac{1}{6}$ inches.

Appearance of the species of *Bolichthys*, and evidently closely allied to *Pecilichthys eulis*.

Body more elongate than in most species of *Bolichthys*, subfusiform, compressed behind, the back a little elevated; head slender, rather acute, the snout compressed, anterior profile little decurved; snout a
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 3½ in head; preopercle entire; opercular spine well developed; gill-membranes very slightly connected.

Cheeks entirely naked; opercles well scaled; ucheal 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 *Paxilichthys bollratti*, 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 (*Paxilichthys*, *Boleichthys*, *Nothonotus*, *Nanostoma* will have to be merged in *Ethostoma*).

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

**Smithsonian Institution, August 15, 1884.**

---

**DESCRIPTION OF *Sciema sciema*, A NEW SPECIES OF SCiEMA 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 *Sciema 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 *Sciema*. All these references belong to a species which is not the original *Corvina vermicularis* of Günther, and which until now remains unnamed.

*Sciema sciema*, sp. nov.


Head, 3½ (4); depth, 3–3½ (4). D. X, 1, 24; A. II, 7. Scales, 6–50