

DESCRIPTION OF A NEW SPECIES OF DEEP-WATER SCULPIN (TRIGLOPSIS ONTARIENSIS) FROM LAKE ONTARIO, WITH NOTES ON RELATED SPECIES.

By DAVID STARR JORDAN and WILLIAM FRANCIS THOMPSON,
Of Stanford University, California.

In the work of the International Fisheries Commission on Lake Ontario, Dr. Seth Eugene Meek, acting as assistant to the commission, secured a fine specimen of a species of sculpin from deep water off Toronto.

This specimen belongs to the genus *Triglopsis* of Girard, the freshwater representative of the marine genus *Oncocottus*, and it is presumably descended from species of the latter genus left in the Great Lakes on their elevation from the sea.

This specimen, which is in very perfect condition, may be described as follows:

TRIGLOPSIS ONTARIENSIS Jordan and Thompson; new species.

One specimen, No. 64599 U.S.N.M., 128 mm. long, taken in deep water off Toronto by Dr. Seth Eugene Meek.

Head $3\frac{1}{8}$ in length to base of caudal; depth $4\frac{1}{4}$; width at base of pectorals 4; orbit 5 in head; interorbital space $5\frac{1}{3}$; depth of caudal peduncle equal to interorbital space, its length 2 in head; height of first dorsal twice in width of body at pectorals, of second dorsal twice that of first; dorsal rays IX-15; anal 14; pectoral 16.

Body broad, head depressed, cylindrical from pectorals to caudal peduncle, which is slightly compressed. Head long, broad; snout moderate, $3\frac{1}{2}$ in head; gape wide; interorbital space broad, concave; maxillaries extending to below posterior margin of eyes; eyes large; gill membranes attached to isthmus very narrowly, almost forming a fold across; a short slit behind fourth gill; a short spine above each orbit, one on each side of median line at occiput; four blunt ones on preoperculum, of which the dorsal and largest points upward and backward, the ventral downward, the others pointing backward and downward; none curved or hooked; one on operculum at lower angle,

much smaller than others; three on each side at junction of operculum edge and body, attached to shoulder girdle and posterior bones of head, all rather small, curved posteriorly, and hooked; a similar one on upper angle of operculum; dorsal surface of head slightly roughened by small papillæ; body smooth, without scales or bristles.

Lateral line following line of dorsal, well above axis of body, chain-like, reaching center of caudal peduncle, well developed throughout.

First dorsal much lower than second, the latter being twice the former when longest rays are measured to tip; base of first longer than height; base of second equal to its height and to body width at pectorals; rays of second produced into filaments two-fifths of total length, last six bifurcated; anal similar to second dorsal in insertion

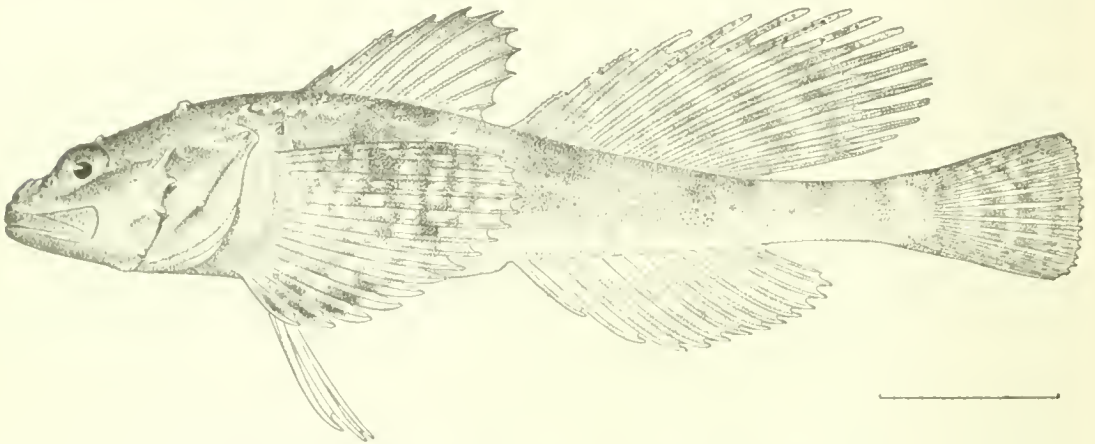


FIG. 1.—*TRIGLOPSIS ONTARIENSIS* JORDAN AND THOMPSON.

and length, but rays much less produced as filaments; pectorals very broad at base, long, their insertion less oblique than in *Triglopsis thompsoni*, tip extending considerably beyond insertion of second dorsal and vent, which is beneath last of first dorsal; ventrals long, reaching to anus, but not as long as pectorals. Vent slightly nearer caudal base than tip of snout.

Color in spirits a darker yellowish ground with mottled dark above, forming 4 or 5 indistinct stripes across body; below colorless; dorsal, pectoral, and caudal fins with indistinct cross bands on light background, tips clear, ventrals and anals clear save for light stippling on anal.

The skeleton of the head is very soft and cavernous

Comparative measurements of *T. ontariensis*, "*T. stimpsoni*," and *T. thompsoni*.

	Ontariensis.	"Stimpsoni."	Thompsoni. (after Girard).
Locality.....	Lake Ontario off Toronto.	Lake Michigan off Chicago.	Lake Ontario off Oswego.
^a Length without caudal.....	mm. 128	59	88
Depth of body.....	hundredths. 0.21	0.165	0.165
Width at pectorals.....	do. .26	.155	
Head.....	do. .27	.33	.33
Distance from vent to snout.....	do. .55	.50	.50
Depth of caudal peduncle.....	do. .06	.045	.05
Length of same from anal to caudal rays.....	do. .16	.13	.13
Dorsal rays.....	no. IX-15	VIII-14	VII-18
Anal rays.....	no. 14	11	15
Pectoral rays.....	no. 16	18	18
Branchiostegals.....	no. 6	6	6
Length of snout.....	hundredths. 0.09	0.10	0.12
Diameter of orbit (bone to bone).....	do. .065	.09	.085
Maxillary length from tip of snout.....	do. .13	.15	.15
Interorbital width.....	do. .06	.03	
Pectoral length (longest ray).....	do. .32	.25	.22
Pectoral base (width).....	do. .14	.14	
First dorsal height (longest ray).....	do. .13	.11	.09
Second dorsal height (longest ray).....	do. .27	.15	.27
Dorsal bases.....	do. 0.19 + .26	0.16 + .28	
Anal height.....	do. .15	.11	
Anal base.....	do. .27	.29	.30
Ventral length.....	do. .24	.13	.14

^a All measurements are in hundredth of body length to base of caudal.

We have compared with this specimen an example from deep water off Chicago (No. 629 Stanford University) collected by Dr. Stephen A. Forbes. To this Lake Michigan species, the name of *Trigloopsis stimpsoni* was given by Doctor Hoy in 1872 ^a from a specimen collected by himself.

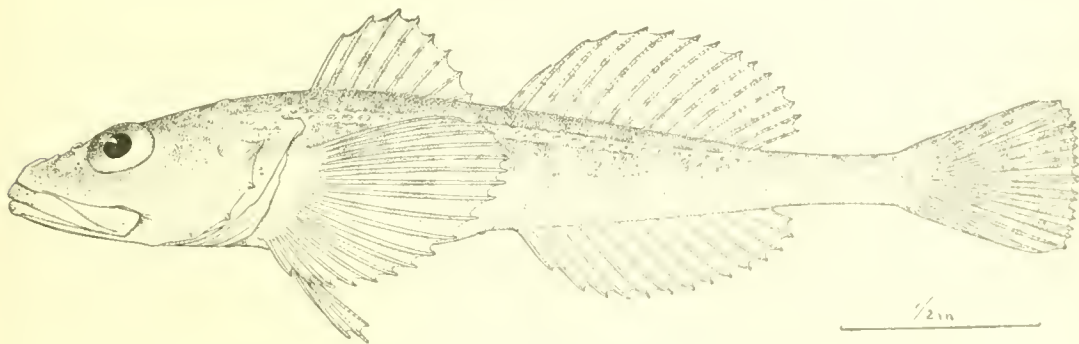


FIG. 2.—TRIGLOOPSIS STIMPSONI HOY.

This specimen agrees with the description and figures of *Trigloopsis thompsoni* from Lake Ontario in all respects except the following:
Lateral line distinct to last rays of second dorsal. Dorsal rays VIII-14 ; anal rays 14, ending opposite second dorsal. The soft dorsal is not very much higher than spinous dorsal. In *Trigloopsis thompsoni*, the soft dorsal is three times as high as the first, the dorsal rays are VII-18, and the anal rays 15, the lateral line is distinct to

^aTrans. Wis. Acad. Sci., 1872, p. 98.

eighth soft ray of dorsal. In *T. ontariensis*, which has a much deeper and thicker body, the second dorsal is twice as high as the first, which is also unusually high. The lateral line is distinct to the base of caudal, and the mouth is much smaller than in *T. thompsoni* or *T. stimpsoni*, the snout being also shorter.

We present a figure of the specimen from Lake Michigan, typical of the nominal species, *Trigloopsis stimpsoni*. We are unable, without more material, to determine whether *Trigloopsis stimpsoni* is a valid species or not. The lower dorsals and the smaller number of fin rays constitute the chief apparent differences. This figure, as also the figure of *Trigloopsis ontariensis*, is drawn by Mr. W. S. Atkinson.

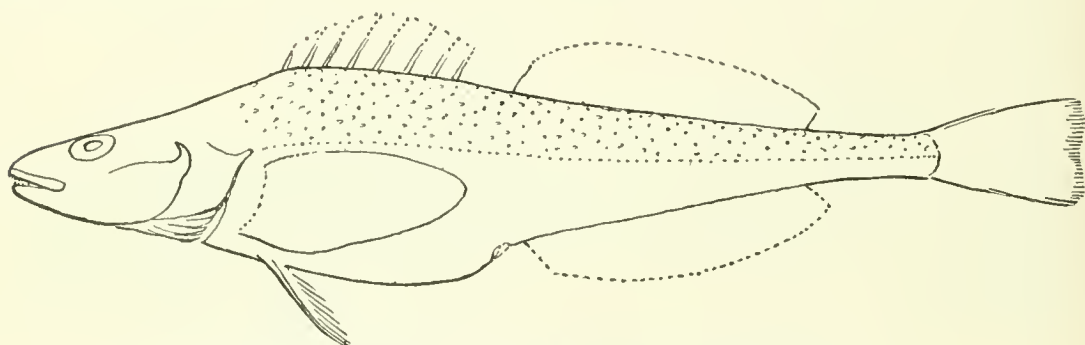


FIG. 3.—*COTTUS RICEI* (NELSON) FROM THE ORIGINAL TYPE.

Among the remains of *Trigloopsis thompsoni* from stomachs of the predatory ling (*Lota maculosa*), off Oswego, examined by Doctor Girard, are also fragments of another little-known deep-water sculpin, *Cottus ricei* (Nelson). Of this species, which has never been figured, we present an outline made from Nelson's original type many years ago.