Length, 57 millimeters; height from base to umbo, 37 millimeters; thickness, both valves together, 24 millimeters.

In general aspect this shell approaches *T. prouti* Meek & Hayden, from the Upper Fox Hills Group of the Upper Missouri River region, but it differs in being proportionally narrower and more produced behind the beaks, and in the greater prominence of the umbones.

Position and locality.—Cretaceous strata, Bell County, Texas, where it was collected by Mr. D. H. Walker.

WASHINGTON, *December* 4, 1879.

NOTES ON A COLLECTION OF FISHES OBTAINED IN THE STREAMS OF GUANAJUATO AND IN CHAPALA LAKE, MEXICO, BY PROF. A. DUGÈS.

By DAVID S. JORDAN.*

The collection which forms the subject of this paper was obtained by Prof. A. Dugès in the streams of the province of Guanajuato in Mexico, and by him forwarded to the Smithsonian Institution. Many of them are extremely interesting as representing the ordinary North American fish fauna at a point near its southern limit, before it gives place to the Central and South American forms.

Chirostoma estor Jordan, sp. nov.

Allied to *Chirostoma humboldtianum* (C. & V.).

Body elongate but rather robust for the genus, the depth about one-sixth the length to the base of the caudal.

Head very large, pike-like, forming more than one-fourth (two-sevenths) the length to base of caudal.

Mouth very large, the maxillary reaching to past the front of the eye. Intermaxillaries forming the edge of the jaw strongly curved, their posterior portions broadly dilated as in *Chirostoma menidium*. Teeth strong, in several series in each jaw. *Two* small fang-like teeth on the front of the vomer. Lower jaw considerably projecting beyond the upper. Eye large, anterior, 5 in length of head, shorter than snout, and a little narrower than the interorbital space, which is nearly flat.

Head covered with scales, which are smallest on the occipital region, and largest on the lower part of the cheeks. Smaller scales on the interopercle.

Sides of head vertical, a conspicuous ridge along the edge of the top of the head above and behind the eye.

Scales small, anteriorly crowded, about 72 in a longitudinal series, and 18 in a cross series. Posterior margin of scales strongly crenate, so that the fish feels rough to the touch.

* As Professor Jordan is far distant while this paper is going through the press, the proof has been compared with his manuscript by the editor of these Proceedings. In the description of *Zophendum australe* two verbal additions are indicated in parentheses.

Pectorals moderate, nearly half as long as head, reaching slightly past the base of the ventrals. Ventrals rather short, reaching nearly two-thirds the distance to the base of the anal.

Anal moderate, beginning considerably in front of the dorsal and ending a little behind it. Anal rays I, 18. Dorsal rays V–I, 12.

Spinous dorsal beginning nearly midway between insertion of ventrals and anal, separated from the soft dorsal by a distance equal to about two-thirds the length of the base of that fin.

Caudal somewhat forked.

Coloration uniform in spirits, the silvery lateral band but faintly indicated.

The type of this species, 10¼ inches long, was obtained by Professor Dugès in Lake Chapala, Mexico; it is known as Pesce blanco di Chapala ("poisson blanc de Chapala") in Guanajuato, according to Professor Dugès.

It is one of the very largest of the *Atherinidæ*, resembling a pike in its form, and in the large head and mouth. Its nearest relative is apparently *Chirostoma humboldtianum*, also from Mexico, from which it differs in the much smaller scales, as well as in other characters. In Dr. Girard's arrangement of the *Atherinidæ*, this species would be likewise a *Heterognathus*.

The type of *Chirostoma estor* is numbered 23124 in the register of the U. S. National Museum.

Chirostoma humboldtianum (C & V.) Jor. (*Atherina vomerina* C. & V.).

With the preceding is a single specimen of another *Chirostoma*, which seems to be the *humboldtiana* of Cuv. & Val., with which the *vomerina* is doubtless identical. This specimen (No. 23136) has the usual silvery band. D. IV–I, 10; A. I, 15 or 16; lat. l. 50, the scales with entire edges. The long head is 4¼ in length to base of caudal, and the body is rather slender. This example is 3⅜ inches in length.

? Chirostoma brasiliensis (Quoy & Gaimard) Jor.

Numerous specimens (catalogue number 23135) of a small *Chirostoma* allied to *brasiliensis* and *bonanensis* are in the collection. The body is short and compressed, the mouth small and oblique. Lat. l. 36; L. trans. 9. D. IV–I, 9; A. I, 17. Silvery lateral streak very narrow. It does not fully agree with descriptions of either of the above species, and its habitat is remote from both. I do not, however, think it advisable at present to give it a separate name.

Goodea atripinnis Jordan, gen. & sp. nov.

GENERIC DESCRIPTION.—Form of *Hydrargyra* or *Fundulus*, but with the intestinal tract elongate, the dentary bones movable, and the teeth slender, *tricuspid*, movable, attached in a single series on the outer edge of the jaws, not closely set. Fins small, the dorsal and anal similar,

the dorsal slightly in advance of the anal, without spines. Scales moderate. *Limnophagous.* Sexual changes, if any, unknown.

This genus differs from the most of the other *Cyprinodontidæ* in its tricuspid teeth. From *Cyprinodon*, *Jordanella*, *Fitzroyia*, *Characodon*, and *Jenynsia*, the genera thus far known with tricuspid incisors, it is distinguished by the elongate intestines, and by the freeness of the dentary bones. The aspect is wholly unlike *Cyprinodon*, resembling rather *Fundulus*.

SPECIFIC DESCRIPTION.—Body oblong, considerably compressed, formed much as in *Hydrargyra*, the back nearly straight, little elevated, caudal peduncle deep. Depth of body 4–4¼ in length. Head short, broad, depressed, triangular and rather pointed, when viewed from the side.

Mouth quite small, anterior oblique, the lower jaw projecting. Both jaws with a series of rather slender tricuspid teeth, which are loosely inserted, and somewhat movable, not close enough set to form a continuous cutting edge. Head 4 in length. Eye moderate, directed partly downwards, 3½ in head, rather longer than snout and little more than half the width of the very broad interorbital space. A slight ridge from the occipital region backward.

Scales rather large, 37 to 40 in a longitudinal series, and 13 in a transverse series. Humeral scale somewhat enlarged.

Fins small. Dorsal fin posterior, very slightly in advance of the anal, which is also short and low, the two fins about coterminous and falling far short of the caudal. Caudal short and small. Ventrals small.

Pectorals small, not reaching ventrals. Dorsal rays 12, anal rays 13.

Color bluish above in spirits, sides nearly plain, with a silvery streak along each series of scales. Vertical fins obscurely marked, each of them chiefly black, especially on the distal half. There is no evidence of any modification of the anal fin in any of the specimens, which are, however, apparently adult. One of the two larger ones is apparently a female, the other probably a male.

The intestinal canal is considerably convoluted and filled with mud.

The types of this species, No. 23137, are numerous specimens of various sizes; the two largest nearly 4 inches in length, were obtained by Professor Dugès at Léon in Guanajuato.

Zophendum australe Jordan, sp. nov.

Allied to *Zophendum siderium* (Cope), but with larger scales.

Body rather elongate, formed much as in *Campostoma anomalum*, somewhat compressed, the back somewhat elevated and rounded anteriorly. Depth, 4⅓ in length to base of caudal.

Head rather large, slightly depressed or flattish above, its length about 4 times (in length) to base of caudal. Mouth moderate, low, the lower jaw slightly included, the premaxillary below the level of the eye, the maxillary just reaching the front of the eye. Lower jaw thin-edged,

and with a slight symphysial knob as in *Hybognathus*. Eye small, nearly 6 in head.

Scales rather small, 10–55–7 or 8, the lateral line complete, somewhat decurved.

Dorsal fin moderate, slightly behind ventrals, D. 8; A. 7. Anal rather high.

Pectorals not reaching ventrals, the latter (not reaching) to vent.

Teeth 4–4, not hooked, with broad grinding surface as in *Hybognathus*.

Color dark bluish above, scales everywhere with fine black punctulations. Sides without black spots. A black spot at base of caudal fin.

Peritoneum black; intestinal canal considerably elongate.

Types, numerous examples (23130–23131), 5 to 7 inches in length, taken by Professor Dugès in Lake Tupataro in Guanajuato, Mexico. The less number of scales (55 instead of 88) well distinguishes this species from *Z. siderium*.

Hudsonius altus Jordan, sp. nov.

Allied to *Hudsonius fluviatilis*.

Body moderately elongate, compressed, deep, the back somewhat elevated, the depth $3\frac{3}{4}$ in length to base of caudal.

Head short, somewhat depressed above, moderately pointed, $4\frac{1}{4}$ in length to base of caudal. Eye moderate, shorter than snout, 5 to 6 in length of head. Mouth medium, quite oblique, terminal, the premaxillary on the level of the pupil, the maxillary not reaching the front of the pupil. Jaws equal in the closed mouth. Preorbital large.

Scales rather large, not closely imbricated, 8–46–4. Lateral line strongly decurved, 19 scales in front of dorsal fin.

Dorsal fin high, inserted over the base of the ventrals. Dorsal rays I, 8. Anal I, 8. Caudal fin rather broad, forked, its peduncle deep and compressed.

Ventrals shortish, reaching vent. Pectorals falling just short of ventrals.

Teeth 4–4, hooked, with narrow grinding surface.

Color bluish above, sides silvery, fins plain.

Types, several specimens, numbered 23129, the largest about 8 inches in length, obtained by Prof. A. Dugès in Lake Tupataro in Guanajuato.

This species differs from its northern relatives, *fluviatilis*, *storerianus*, etc., in the larger head, the oblique mouth, and in the presence of but one row of teeth.

UNITED STATES NATIONAL MUSEUM,
Washington, *December* 18, 1879.