

NOTE ON THE OCCURRENCE OF A SILVER LAMPREY, *ICHTHYOMYZON CASTANEUS*, GIRARD, IN LOUISIANA.

By TABLETON H. BEAN.

Nearly two years ago Mr. N. B. Moore, of Forlorn Hope, Louisiana, sent to the National Museum, at the request of the Director, a lamprey which he perceived to be different from the sea-lamprey (*Petromyzon americanus*, = *marinus*), by comparing it with a description in Zell's Encyclopedia. About that time the writer was on his way to Alaska, and had no opportunity to examine the specimen forwarded by Mr. Moore. It was placed in storage and came to my notice again only a few days ago. As this individual shows some unusual characters, it is worth while to call attention to them. It agrees pretty well with the account of the species described by Girard from Galena, Minn., under the name *Ichthyomyzon castaneus*, but shows a variation from the ascribed characters of the genus in having three close-set maxillary teeth, while some of the lateral teeth are bicuspid.

I insert here Mr. Moore's description of the recent specimen:

"I have a lamprey—first ever seen by me, and identified by a description in Zell's Cyclopædia. Thinking it quite far south for one of this species—*Petromyzon americanus*, if it be this one—I put it in whisky, and, as I found it to differ from that given in Zell in one particular, the dorsal fin being $4\frac{1}{4}$ (inches) in length, continuous, not separated, I thought you would like to examine it. If so, I will send it to you. Total length, $9\frac{3}{8}$ inches; anus to tip of tail fin, 2; between anterior and posterior gills, $1\frac{1}{8}$; tip of snout to anterior gill, $1\frac{1}{4}$; commissure of mouth, $\frac{3}{4}$; greatest depth of fish at interior part of dorsal, $\frac{7}{8}$; greatest width 2 (inches) from tip of snout, $\frac{5}{8}$; thence a true taper to tip of tail in lateral outline; body not cylindrical. Color ochraceous about head, then yellowish gray; small blue dots from head to tail and on under side of neck."

For convenience of comparison, I copy here Girard's description of *I. castaneus**:

"SPEC. CHAR.—Head depressed, constituting the ninth of the total length; body and tail compressed. Buccal disk sub-elliptical, provided with a double series of short, tentacular fringes upon its periphery. Posterior margin of buccal aperture exhibiting a series of nine teeth, disposed upon an arc of a circle. Eyes small and inconspicuous; spiracle sub-tubular, raised above the surface of the head. Origin of the dorsal fin equidistant between the anterior margin of the buccal disk and the apex of the tail. Vent situated immediately in advance of the most elevated portion of the dorsal fin. Chestnut-colored, of a darker tint above than beneath.

* < Rep. U. S. Pacific R. R. Surv., Fishes, 1858, pp. 381-2.

"What we have termed the head is measured from the anterior extremity of the buccal disk to the first branchial orifice, the chest being the region occupied by the entire series, seven in number, of the same branchial orifices.

"The length of the head is equal to that of the chest. The tentacles, at the periphery of the buccal disk, are inserted into a shallow groove, formed exteriorly by the thickened edge of the disk, and interiorly by a soft and flexible membranous ridge. The fringes themselves are more developed posteriorly than anteriorly. The branchial orifices are sub-circular, provided with two semi-circular lips, an anterior and a posterior one, fringed upon their edge, and somewhat raised above the surface of the chest.

"The dorsal fin exhibits two convex elevations, one anterior to the vent, the other posterior to it. Its continuity with the caudal is marked by a gradual shallow depression. The lower lobe of the caudal is rather more developed than the upper lobe. The tail itself is bluntly spear-shaped.

"The color is of a uniform chestnut tint, somewhat lighter along the abdominal region than over the sides and back, which is much darker."

The single typical specimen was catalogued at number 979. It was collected by Dr. George Suckley at Galena, Minn.

In the example received from Mr. Moore the following characters are observed:

Head $7\frac{3}{4}$ in total length; body and tail compressed. Labial fringes short everywhere, but more developed posteriorly than anteriorly. Maxillary teeth pointed, close-set, three in number; mandibular plate crescent-shaped, with nine pointed teeth very gradually diminishing in size from the middle tooth to each end. Two of the lateral teeth on each side of the oral aperture bicuspid, the rest unicuspid. Both series of lingual teeth finely pectinate. Eyes very small, obscure. Spiracle about once its own length in front of eyes. Origin of dorsal fin midway between spiracle and end of tail. The dorsal fin is continuous, low in the first half of its length (about one-sixth the height of the part of the body under it), thence gradually rising to its greatest height a little behind the vent and again gradually diminishing to the emargination which separates it from the tail. The greatest height of the dorsal is less than one-half that of the body at the same point. The distance of the vent from end of tail equals 3 times height of body at vent. The space occupied by the gill-openings is about equal to length of head. Greatest height of body equals head to hind margin of eye. The tail small, no part of the fin surrounding it being much higher than the anterior half of dorsal.

The alcoholic specimen now is almost uniformly light brown replaced by chestnut in one small area on the belly a little in front of vent. The spots on head, chest, and back, which Mr. Moore described as blue, are now dark brown or nearly black, resembling fly-specks.

The length of the specimen (numbered 30334) is now 9.3 inches; head 1.1; chest very nearly the same; greatest height of body, $\frac{17}{20}$; vent to tip of tail, $1\frac{1}{2}$; dorsal from end of head, 5.

I have thought it worth while to describe this lamprey in some detail because of the interest which attaches to the locality and on account of the slightness of our knowledge of *I. castaneus*, to which our present example is most closely related.

UNITED STATES NATIONAL MUSEUM,
Washington, March 24, 1882.

Since the above was written I have found and examined the types of *Ichthyomyzon hirudo* and *I. castaneus* Girard. The first is 5 inches long and is certainly congeneric with *castaneus*, from which it differs in the number of mandibulary cusps. The maxillary tooth is tricuspid and a few of the lateral teeth are bicuspid. *Ichthyomyzon hirudo* and *I. castaneus*, therefore, show a departure from the type of the genus, which is *Petromyzon argenteus* Kirtland; they have the dorsals continuous as in *argenteus*, but the dentition is different. The maxillary cusps in *hirudo* and *castaneus* are placed close together. The lingual teeth are pectinate throughout, as in *Lampetra tridentata*. We are called upon now to decide whether *Petromyzon argenteus* Kirtland and Girard's two species of *Ichthyomyzon* (*hirudo* and *castaneus*) are all members of the genus *Ichthyomyzon*. In my opinion they are, but I should refer the three species of *Ichthyomyzon* to *Petromyzon*.

UNITED STATES NATIONAL MUSEUM,
June 14, 1882.

**NOTES ON A COLLECTION OF FISHES FROM JOHNSTON'S ISLAND,
INCLUDING DESCRIPTIONS OF FIVE NEW SPECIES.**

By ROSA SMITH and JOSEPH SWAIN.

The specimens which form the subject of the present paper were obtained in the spring of 1880 at Johnston's Island, by the captain of a vessel belonging to the North Pacific Guano Company. A can of alcohol was sent out on this vessel by Professors David S. Jordan and Charles H. Gilbert during their stay on the Pacific Coast of the United States in the interest of the United States Fish Commission. Johnston's Island is located about 700 miles southwest of the Hawaiian Islands, and approximates 17° north latitude, 170° west longitude. This collection, containing five new and many little known species, Professor Jordan has turned over to the writers for study. The specimens are now in the United States National Museum.

We are greatly indebted to Professor Jordan for the use of his library and for many valuable suggestions.