

ART. V.—STUDIES IN THE PROVINCIAL MUSEUM. 1. FISHES.
2. FISH DEVELOPMENT. BY HARRY PIERS.—Com. by
the Secretary.

Read February 13th, 1888.

In the course of my studies in the Provincial Museum, the following new, rare, or interesting specimens have come under my notice, on which I would now make a few notes which may be of interest.

THE STRIPED OR OCEANIC BONITO—*Euthynnus pelamys* (L),
LUTKEN.

On August 22nd, 1887, a large individual of this uncommon species, which is well known for its activity and voracity, was captured in the North West Arm. It was subsequently examined by Dr. Honeyman, and furnished the following measurements:

Length, 36cm.

Girth, nearly 25cm.

There were three longitudinal black stripes under the lateral line on one side, while on the other a fourth might be observed, but less distinctly. This seems to correspond with the figure in the publication of the United States Fishery Commission (Fishery Industries). It is an excellent food-fish, and was unfortunately purchased by a hotel proprietor for the table before Dr. Honeyman could secure it.

SHORT-FINNED HARVEST FISH—*Stromateus triacanthus*, PECK.

Mr. Christian, of Prospect, obtained a very large specimen of this beautiful fish, which he forwarded to the Museum. Its total length is nearly 26cm., while that of two specimens in the Museum collection is 14cm., and 11cm. 5mm., respectively. In height it measures 9cm. 5mm., and in its greatest breadth over 3cm. The head constitutes one-fifth of the total length. According to Prof. G. Brown Goode, its northerly range is Maine.

This fish first appears with the mackerel. It associates with the jelly fish, which are sometimes observed "accompanied by ten or twelve, or more, young Butter-fishes, which seem to seek shelter under their disks, and which, perhaps, may obtain a supply of food from among the numerous soft-bodied invertebrates which are constantly becoming attached to the floating streamers of their protectors." Fifteen have thus been seen under a *Cyanea arctica* only three inches in diameter. Their entertainer, however, does not always prove a good host, "for they sometimes are destroyed by the tentacles of their protector, which are provided, as every one knows, with powerful lasso cells." Their flesh is excellent as an article of food, and resembles in flavor that of the mackerel. It is remarkable for its "brilliant, iridescent colors, which, in freshly caught individuals, are as beautiful as those of a dolphin." The fact of its appearing during harvest time gave it its common name. Our fishermen call it the Dollar-fish.

AMERICAN ASPIDOPHORE—*Aspidophoroides monopterygius*,
STORER.

This rare and curious fish was collected on the shore of Cape Breton. It is more frequently observed on the coast of Greenland, and, although "not much thinner or softer than an iron spike," it is sometimes taken, by our fishermen, from the stomachs of codfish and halibut caught on the Banks.

DeKay gives but an imperfect figure of this species, and our specimen, now before me, appears to differ in the following particulars. The anal fin has *six* rays instead of five, and it commences slightly anterior to a point beneath the beginning of the dorsal and ends the same distance in front of the termination of the latter. The pectoral is nearly three times as long as that in the figure, the fourth ray being the longest. Our fish is also of much greater height just in advance of the pectorals and the breadth here is 11mm. But the chief difference appears to lie in the absence of the third spine on the snout, which latter is also more acute. The total length is a little over 16mm.

DeKay says he never had an opportunity of seeing this rare species, but copied from Storer his figure of one found on the coast of Massachusetts.

TETRODON. SP. ?

Description:—Body oblong, but being inflated it appears nearly globular. *The whole surface smooth.* No lateral line. Head nearly one-third total length. Lips thick. Jaws large. The branchial aperture small, just anterior to the base of the pectorals.

Dorsal fin anterior to the anal fin length to breadth as four to one. First ray longest. Pectorals of moderate size. The upper ray longest, then, after decreasing in length to the fifth, they remain equal until the twelfth when they suddenly decrease in size to the fifteenth, which is very short. Anal slender, rounded, second ray longest. Caudal equal.

Colour:—Back and upper part of head of a yellow ground-colour, minutely lined longitudinally with dark brown, thus giving it a yellowish brown hue which is darkest on the dorsal margin. These lines, when examined with a glass, are found to be made up of little dots of pigment arranged side by side and thus giving the appearance of lines. Under parts dull grey, slightly silvery in appearance. Throat yellowish. Margin of the mouth brown. Behind the pectorals there are several brown blotches which extend to the tail.

D. 8, P. 15, A. 8, C. 9.

Total length 10cm. Length from branchial aperture to jaws 4cm.

This seems to answer DeKay's description of *T. turgidus*, except in the total absence of the dermal spines, the presence of which he makes a characteristic of the genus, thus excluding our specimen. But Gunther (page 688) says that "in some of the species the dermal spines are extremely small, and may be absent altogether."

The Globe fishes inflate themselves with air, upon which they turn on their backs and are driven about by the wind and waves. Our fish was in a similar condition when taken on the coast of Nova Scotia.

A YOUNG SILUROID.

A plate in the report of the Fishery Commission for 1885 (Part XIII.), illustrating a paper on the development of osseous fishes, by John A. Ryder, directed attention to a curious specimen in the Museum collection which had been exhibited at the London Fishery Exhibition of 1885. This was a young Cat-fish, with the yelk-sack still attached, but in a very advanced stage of development.

Description.—Skin smooth and shining. Lateral line distinct, convex under the dorsal and then straight. Body compressed. Head depressed, on the top of which is a curious five-lobed figure, lighter than the surrounding colour, which is probably the cartilaginous bones beneath showing through the semi-transparent skin. There are six discernible barbels, which are arranged as follows: One on the upper side of each angle of the mouth, and four arising at nearly equal intervals under the lower jaw. Anterior to each eye is a minute knob or flap, which may or may not be an undeveloped nasal barbel. The yelk-sack is sub-globular, slightly flattened on its under side, and having its greatest measurement longitudinally. On this the median ventral vessel appears as a raised line, which, as branched vitelline capillaries, arises from underneath, and thence, after passing over the anterior end, bends backwards on its way to the heart.

First dorsal fin sub-quadrate, third ray longest. The spine not serrated. This fin arises just posterior to the pectorals.

Second dorsal or adipose fin long, rounded on its upper margin, its height to its base as one to six.

Pectorals pointed with the posterior margin rounded. The spine being its greatest length.

Ventrals moderately broad and rounded.

Caudal forked with sixteen complete rays. Accessory rays present.

Colour.—The fish proper is flesh-coloured, but lighter on the head. A light ash-coloured spot on each side shows the position of the air-bladder. Pupil white; iris bluish-black.

The yelk-sack is flesh-coloured, but of a darker shade than

the fish itself and more pink, the darker shade arising from its contents. A brown tortuous line goes round the sack near its attachment to the fish, and bends downward at the anterior end.

Total length from tip of snout to tip of tail about 4 cm.

Distance between the eyes (inter-orbital space), 7 mm.

Head nearly one-fourth the total length.

Breadth of head behind the eyes, 9 mm.

Length and breadth of yelk-sack, 23 mm.

Height of ditto, 18 mm.

Length of maxillary barbels, 8 mm.

“ “ chin “ 4 mm.

FIN RAYS:—1 D. I. 7., 2 D. 0., P. I. 6., V. 6., A. 19 (?), C. 16.

This fish I have not been able to identify, the chief difference being in the great length of the adipose fin compared with its height.

On referring to the eighteen fishes, whose development is treated of by Ryder, we find that the greatest length of time required for the absorption of the yelk is twenty days, which is the case in the *Ictalurus albidus* or White Cat-fish. At this time the caudal is not yet perfectly developed. Our fish appears, in the proportionate size and relation of the fish proper and yelk-sack, to correspond with the above when just hatched (sixth day). Yet on a closer examination the immense difference between their respective stages of development is at once observed. We find that while the *I. albidus* has no determinate fins whatever, but only a median fin-fold, our Cat-fish is perfect in every particular, and exhibits, in its accessory caudal rays and sharply defined adipose fin, evidences of its very advanced development. The latter fin, in regard to the White Cat-fish, is not perfect until about eighty days.

Now this early development is very curious when we compare it with other fishes at an apparent similar age, and is evidently worthy of careful attention.