

RARE AND INTERESTING FISHES AND SALPS IN THE BAY OF
FUNDY AND OFF NOVA SCOTIA.*

R. A. MCKENZIE and R. E. S. HOMANS.

Atlantic Biological Station, St. Andrews, N. B.

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ABSTRACT.

This paper records the occurrence of seven marine fishes, one mass of marine fish eggs and two salps during recent years. The forms previously not reported from these waters are *Careproctus longipinnis*, and the eggs of *Anarhichas lupus*. Three of the other fishes are northern forms and two are southern. The occurrence of the salps is of interest to hydrographers.

Accurate records of the occurrence of species play a very important part in any investigation of distribution and it is our hope that the following records, whether indicative of ecological changes or not, may prove of use in the future.

Among the many marine organisms received in the Biological laboratory of the Fisheries Experimental Station, Halifax, for identification, the following have been considered worthy of recording:

FISHES.

Argentina silus Ascanius 1763. Argentine.

A specimen 14.7 cm. in length was taken from the stomach of a haddock captured April 15, 1936, southwest of Emerald Bank in 54 fathoms, Lat. 43° 05'N., Long. 62° 35'W. The bottom temperature was 3.2°C. Previous to this there have been only *two* positive records of captures off the Canadian Atlantic coast (correction to Vladykov and McKenzie¹, p. 59). The first, also from a fish stomach, was taken off Sable Island in 200 fathoms². The second was taken on northeastern Banquereau in 1932³.

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¹Vladykov and McKenzie. *Proc. N. S. Inst. Sci.*, 19, Pt. I, 17-113, 1934-35 (1935).

²Goode and Bean. "Oceanic Ichthyology". *Spec. Bull. U. S. Nat. Mus.* 1895, 553 pp.

³Thompson. *Rept. Nfld. Fish. Res. Comm.*, 2, no. 1, 125-127 (1933).

Leptagonus decagonus (Black and Schneider) 1801. Northern Alligatorfish.

This specimen 22 cm. in length, undoubtedly one of the largest on record, was captured January 9, 1937, northwest of Sable Island, Lat. $44^{\circ} 15'N.$, Long. $60^{\circ} 55'W.$ in 50 fathoms, temperature 4° - $5^{\circ}C.$ It is a female, preserved in formalin, containing salmon pink eggs 1.0-1.5 mm. in diameter. Mr. J. Maher, radio operator on the S. T. Viernoe, who brought in this specimen, reported the capture of another taken on the same occasion. A week later, he reported seeing half a dozen on the deck of the trawler which was operating again in the same area. Mr. Maher's identification of the "half dozen" is undoubtedly correct since he named the original specimen when he brought it to this laboratory.

These captures of this Arctic form indicate a southward migration of considerable magnitude. Besides this, they represent the most southern capture on record of this species in the west Atlantic, even more so than the only previous record in Nova Scotian waters. This previous capture was a young specimen taken near the surface on the northeastern edge of Banquereau in 1932³.

Neoliparis atlanticus Jordan and Evermann 1898. Common Sea Snail.

This specimen, 6.5 cm. in length, was taken by Clyde Tucker of the Atlantic Biological Station, from a small pool left by the receding tide in Brandy Cove, St. Andrews, N. B., on December 6, 1936. While considered to be fairly common in our waters, still, there are not many definite records of this species, and (to our knowledge) this is the first time it has been found in tide pools, though its European relatives are often found thus.

Careproctus longipinnis Burke 1912. Sea Tadpole.

This specimen, 10.9 cm. in length, was taken by the S. T. Viernoe, February 14, 1937, northwest of Middle Ground, Lat. $44^{\circ} 47'N.$, Long. $60^{\circ} 55'W.$ in 82 fathoms, bottom temperature $2.5^{\circ}C.$ The ovaries of this specimen contain both

small and large eggs, the latter measuring 3-4 mm. in diameter. This is the first (to our knowledge) of this northern species (Burke⁴, p. 134) taken in Nova Scotian waters.

Remora remora (Linnaeus) 1758. Blue Sharksucker.

The only two previously recorded captures of this southern fish in these northern waters were reported by Vladykov⁵ (p. 7); the one off Cape Sable, 1933, the other northwest of Sable Island, 1934. Our specimen was taken from a blue shark (*Prionace glauca*) August 13, 1936, on St. Pierre Bank, Lat. 45° 50'N., Long. 56° 0'W. This is the most northerly capture (to our knowledge) of this species ever recorded for the west Atlantic.

Anarhichas minor Olafsen 1774. Leopardfish.

This Arctic fish, while not uncommon in Nova Scotian waters, has been recorded, but rarely. Bean⁷ (p. 82) reported it in 1881 and Vladykov⁵ (p. 3) in 1935. Bigelow and Schroeder⁶ (p. 337) also mention the capture of three in January and five in March, 1934, on Sable Island Bank.

Our specimens are as follows:—three,—52, 91 and 134 cm., respectively, by the schooner Leah Beryl, February 19, 1937, in 51-90 fathoms, Lat. 43° 53'N., Long. 59° 05'W; one by the S. T. Rayon d'Or from Western Banks, April 9, 1937; and one, 130 cm., by the schooner Cachelot III, April 13, 1937, on Banquereau.

Anarhichas lupus Linnaeus 1758. Common Catfish.

To our knowledge, eggs of this species have not been recorded on this side of the Atlantic, though larvae have been captured at many points. On February 19, 1937, the S. T. Viernoe dragged up a mass of the eggs of this species. This loose mass of eggs just about filled a quart jar. The individual eggs ranged from 5.5-6.0 mm. in diameter. About three-quarters of the eggs had hatched, though the empty shells still remained attached to the mass. A large number

⁴Burke. *Bull. U. S. Nat. Mus.*, 150, 204 pp. 1930.

⁵Vladykov. *Proc. N. S. Inst. Sci.*, 19, Pt. I, 1-8, 1934-1935 (1935).

⁶Bigelow and Schroeder. *Bull. U. S. Bur. Fish*, 48, 319-343, (1936).

⁷Bean. *Proc. U. S. Nat. Mus.*, 3, 75-116 (1881).

of the remaining larvae, partially hatched (heads in, tails out of the shell), as well as the larger embryos, measured 17-18 mm. in length. This is at variance with Bigelow and Welsh⁸ (p. 374) who state that the larvae are 12 mm. long at hatching. All of these possessed yolk sacs, some small, others quite large. Our specimens, for their size, have apparently very large yolk sacs also, when first hatched.

Histrio pictus (Cuvier and Valenciennes) 1837. Sargassum Fish.

This fish, while not taken in Nova Scotian waters, was taken outside the continental shelf off Nova Scotia and landed here. It was dipped at the surface about 400 miles south-east by south of Sable Island, Lat. 40°N., Long. 53°W., by the Cable Ship Cyrus Field, on August 1-8, 1935.

SALPS.

Salpa (Jasis) zonaria (Pallas 1774).

This form has a wide distribution in the North Atlantic. The following records of its occurrence are given here because it has been used as an indicator of water of "Gulf Stream" origin.

In 1932, this form was found in numbers off the central outer Nova Scotian coast. During 1933 and 1934, it was absent. However, late in 1935, immense quantities of both the solitary and the aggregated forms were found. Stomachs from haddock caught off Digby, Bay of Fundy, December 22, 1935, contained numbers of *S. zonaria*. The M. V. Zoarces obtained specimens in surface plankton tows and observed chains of the aggregated forms close inshore along the southwest (Cape Sable to Halifax) coast of Nova Scotia. October 28—November 5, 1935. During October and November numerous specimens were obtained in and about Halifax Harbour. Mr. Noble Pye of Ecum Secum on November 4, 1935, brought a number of specimens of the same form to the Fisheries Experimental Station, stating that he had been using them as cod bait with a considerable degree of success. *S. zonaria* was

⁸Bigelow and Welsh. *Bull. U. S. Bur. Fish.*, 40, Pt. I, 567 pp. (1925).

also taken from the stomachs of haddock caught close to Sable Island, November 6, 1935. In 1936 (to our knowledge) this form was very rare in Nova Scotian waters.

Salpa vagina Tilesius (*S. tilesii* Cuvier) 1802.

This species, the largest of the Salps, occurs but rarely north of the Bahamas. Bigelow⁹ (pp. 56 and 57) mentions finding this species off Lurcher Shoal, August 12, 1913, and in Massachusetts Bay in November and December, 1913. Huntsman¹⁰ (p. 94) states that it was found south of Cape Cod in July 1913, and also about 135 miles southwest of Sable Island, July 21-29, 1915.

Thirteen specimens in the aggregated form were taken at the surface November 21, 1936, off Portuguese Cove, Halifax Harbour, by Ernest Purcell. This record extends the recorded distribution of this form in the west Atlantic somewhat farther north than previously.

We wish to express our thanks for checking our identifications of a number of the foregoing forms to the following:—Professor Victor Burke, Dr. A. G. Huntsman, Mr. J. T. Nichols and Mr. William C. Schroeder.

⁹Bigelow. *Bull. U. S. Bur. Fish.*, 40, Pt. II, 1027 pp. (1928).

¹⁰Huntsman. *Contr. Can. Biol.*, 1918-20, 93-97 (1921).