

NOTES ON THE SPAWNING HABITS OF THREE LAMPREY SPECIES

by Henry W. Fowler

---

This is another in the series of reprints from Aquarium Notes & News, published by the Aquarium Society of Philadelphia around WWI. This article is adapted from "Notes on the Spawning Habits of Our Lampreys," A.N. & N., prob. Vol. IV, no. 4, April, 1917. It was unearthed by NANFA member Jare Sausaman, who has studied the society. Fowler was a leading American naturalist for a half-century, beginning in the late 19th.

---

The Sea Lamprey (Petromyzon marinus)

The Sea Lamprey ascends streams in the spring primarily for the purpose of spawning. The individuals found about the spawning grounds are usually of the uniform average size. The late Dr. Alvin Davison of Easton, Pa. informed me that the lampreys appeared in his region from May 10th to 20th. When he first noticed them, in 1895 or 1896, they were common. Then sometimes thirty were seen in the Bushkill (Creek, a Delaware tributary in Pike & Monroe Cys., the Poconos, N.E. Pa.) at one time, though they have been scarce ever since. They were found ascending the Bushkill only to the first dam. The largest examples were about three feet in length. Later in the season, the young--blind and pale-colored [i.e., ammocoetes]--were often dug out of the sand. These blind lampreys often occur in our various upland and tidal streams during the entire year. About Philadelphia, the Sea Lampreys appear in April, May, and June, though they probably spawn, or at least the majority do, only during the middle of May. They remain for several weeks. Their nests are shallow cavities located in gravel shoals, and scattered about variously, distant or close. In diameter a nest ranges from two to three feet. The nests are constructed by the adults of both sexes, or such individuals as may frequent the nest. The lampreys grasp pebbles or small stones in their mouths and carry them away from a given point in such a way as to form a circular depression. Usually the female is distinguishable in the nest by her slightly larger size.

When building their nests, the lampreys appear quite preoccupied, usually confiding or tame, and may be noticed resting or quiet at intervals. In the spawning act, the female grasps a stone with her mouth, and the male seizes her with his mouth by attaching to the top of her head. The tail of the male is then applied as a loop around her body, usually close behind her dorsal fin, and so curved as to

form a sort of hook. As ova and milt are extruded at the same time, the spawners produce a flurry in the water. This is caused by a vibration of the hinder portions of their bodies for a few seconds, at first accelerated and then equally retarded. Spawning is repeated every few minutes. The female often becomes greatly scared [sic; author could have meant "scarred"?] by the male's grasp, and likely most all of both sexes die on the spawning-ground, or at least disappear. After the eggs are layed [sic], the lampreys drag stones into the nest until they are covered. Usually the eggs hatch in about two weeks. (For a good account of Sea Lampreys spawning, see Dr. Louis Hussakof in Amer. Naturalist, XLVII, 1912, pp. 729-740.--HWF)

The Least Brook Lamprey (Lampetra aepyptera)

A smaller lamprey, usually known as the Brook Lamprey (Entosphenus aepypterus) (now called the Least Brook Lamprey (Lampetra aepyptera)\* is only known to live in fresh water. It is much smaller than the preceding species, reaching barely a third its length. Likewise its spawning habits have been studied by a number of observers (See Drs. B. Dean and F.B. Sumner, in Trans., N.Y. Acad. Sci., XVI, 1897, pp. 321-324. Pl. 27.). Although I have no details at first hand, doubtless small lampreys ascending the small tributaries, brooks, or branches at the head of the Chesapeake Bay, which I saw on several occasions during late May and early June, about 1897, were this species. [See John Brill, "Collecting & Spawning the Least Brook Lamprey," AC, Feb. '85, 10 ff. on this species in the same area.] They have been described by Mr. A. H. Grosh, formerly of Bacon Hill, Md. [according to a map librarian, this was an area about one mile west of Elkton, Md. which dropped of maps in the 1970s]. "Near this place [wrote Grosh] the lampreys occur in brooks in small and close schools, usually composed of twenty to thirty individuals. They frequent the shallows or riffles in late May and early June, clinging to small stones or pebbles by means of their disk-like mouths, and their tails all directed down stream. All this while their bodies are greatly undulated in the flowing current of water. When disturbed, they drift with the water into deeper places. They varied somewhat in color from dark brown or yellowish-olive to quite light shades." Of those I saw, the average length was about five inches, and later in the summer, or during July and August, equally large blind examples were found in the same waters. American Brook Lamprey (Lampetra appendix)

Dr. R.J. Phillips informs me he has seen small lampreys, likely this species [today, the Least Brook Lamprey is not considered to found in the Delaware drainage, which the following creeks are part of; the species Phillips describes here is most likely the American

---

\*Cooper says Entosphenus may still be correct.

LAMPREYS cont'd on p. 14.

###

LAMPREYS, cont'd from p. 11.

Brook Lamprey, "Lampetra appendix"; see Brill; also F. C. Rohde and Robert E. Jenkins, "Lampetra aepyptera," in Atlas of North American Freshwater Fishes, 21, and Rohde, Lampetra appendix, Atlas, 23; also Edwin L. Cooper, Fishes of Pennsylvania University Park, Pa.: The Pennsylvania State Univ. Press, 1983, 31-32), in a small branch of the Red Clay Creek near Kennett Square, Pa. He writes that on April 16th, 1900, in branches of White Clay Creek near Leonard: "Saw many small lampreys and caught eight of them with my hands. Brought three home alive. They were evidently spawning, and were found from two to five in a nest. The nest consisted of a saucer-like depression in the gravel, as large as two palms, in which the gravel was scoured clean. The creatures were swimming vigorously and whirling around each other in these beds, but when disturbed would grasp the stones with their suckers and let their bodies float with the current. It looked like a trick to assimilate their appearance to the weeds in the stream, and I think was such. The vents and fin-bases were enlarged (spawning changes). I dissected one and found ovaries with numerous small eggs, and here and there a large yellow egg nearly as large as a shad egg. The eyes of the animals were fully developed and contained a spherical lens as large as a mustard seed. The sucking-mouth with a little pressure would adhere to the finger sufficiently to sustain the weight of the creature after it was dead. These lampreys were about six or seven inches long."