

American Conger

Conger oceanica (Mitchill) 1818 [64]
[Jordan and Evermann, *Leptocephalus conger*
(Linnaeus 1758), 1896-1900, p. 354.]

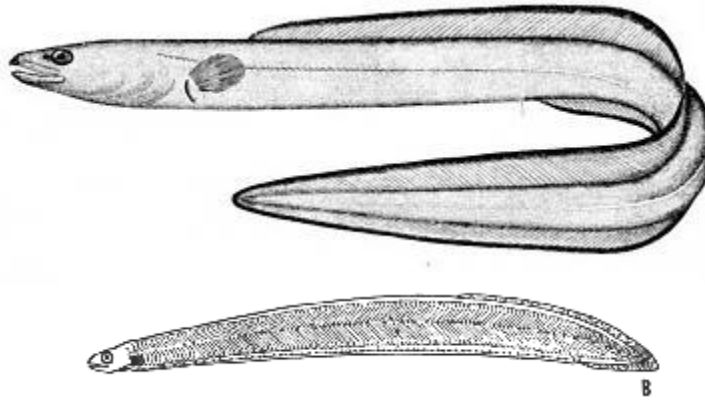


Figure 70 - American conger (*Conger oceanica*),

A, adult, Connecticut; from Goode, drawing by H. L. Todd;
B, "Leptocephalus" stage, 84 mm., Chesapeake Bay.

Description

The readiest characters by which to distinguish the conger from other eels are noted in the key (p. 150); notably the origin of the dorsal fin above or only very slightly behind the tip of the pectoral when the latter is laid back, the rather long-pointed snout, the large mouth cleft back at least as far as the middle of the eye, and the scaleless skin. The conger has many more vertebrae than the common eel and there are other skeletal differences. [65] the conformation of the tip of the snout likewise helps to identify the conger, for its upper jaw usually projects beyond the lower, whereas in the common eel the reverse is true, or at least the lower equals the upper. Furthermore, the eyes of the conger are oval and larger than the round eyes of the common eel.

To give an idea of the proportions of the conger, we need only add that the distance from tip of snout to dorsal fin is about one-fifth of the total length; the length of the snout is one-fourth that of the head; the length of the pectorals is equal to one-third to one-fourth of the distance from dorsal fin to tip of snout; and that the body is of the snake-like form characteristic of eels in general.

Color

Bluish gray or grayish brown above, sometimes of a reddish tinge, sometimes almost black; paler on the sides; dingy white below.

Size

This is a much larger fish than the common eel. The larger ones taken off southern New England and New Jersey are said to measure 4 feet up to 7 feet in length. The general run of those caught weigh 4 to 12 pounds, the heaviest we have seen weighed about 22 pounds. But the North American species never attains the enormous size reached by the European species; the largest European conger reliably reported, of which we have read, was 9 feet long, and weighed 160 pounds. [66]

Habits

The depth range of the conger is from close to the coastline (they are caught from the dock at Woods Hole) out to the edge of the continental shelf, the deepest record for it being for one that we trawled at 142 fathoms off southern New England, on the *Albatross III*, in May 1950. It feeds chiefly on fish: butterfish, herring, and eels have been found in their stomachs at Woods Hole. They also prey on shrimps and small mollusks at times. And we have caught them (and have seen them caught) on crabs, on soft clams (*Mya*), on sea clams (*Mactra*) and on cut fish bait.

It is now well established that the European species (hence no doubt the American also) breeds but once during its life and then perishes like the common eel. Ripe congeners are never caught on hook and line, for they cease to feed, hence to bite, for some time previous. But the males of the European species, kept in aquaria, [page 156] have repeatedly been known to become fully ripe, females nearly so, [67] then invariably dying. The ripening of the sexual products is accompanied by changes in the shape of the head; in the loss of the teeth; and in a jellification of the bones, while the eyes of the males become enormous and the females become much distended by the ovaries. It is probable that the American conger ripens off the coast of southern New England in summer; European congeners in captivity have been known to do so every month in the year except October and November.

It seems that the conger, like the common eel, moves out from the coast to spawn, for its young larvae have never been taken inshore, and Dr. Johannes Schmidt's [68] discovery of very young larvae in the West Indian region, but nowhere else, points to this as the chief spawning ground of the American conger, if not the only one.

The congeners are extremely prolific fish, the number of eggs a European female may produce having been estimated as high as 3 to 6 millions. American conger eggs have never been identified, for although eggs taken over the tilefish grounds 30 miles south of Nantucket lightship in July 1900 [69] have been credited to this species, there is no certainty that this was their true parentage.

It has long been known that the congeners, like the common eels, pass through a peculiar ribbonlike larval stage (the so-called "leptocephalus") very broad and thin and perfectly transparent, with a very small head. [70] In fact the first leptocephalus ever seen (about 1763) was the larval European conger. But its identity was not established definitely until 1886, when the famous French zoologist, Delage, [71] reared one through its metamorphosis at the biological station at Roscoff.

The leptocephalus stage of the conger is relatively more slender than that of the common eel, it grows larger (to a length of 150-160 mm.), and its vertebrae and muscle segments are far more numerous (140-149 in the American conger, 154-163 in the European) than in the common eels (about 107 in the American eel and about 114 in the European). But the number of body segments (visible only under a lens) is not of itself a safe clue to identity, for there are as many or more in the long-nosed eel (p. 158) which has been reported in the Gulf; also in the morays, and in various other members of the eel tribe. [72]

The duration of the larval period of the conger is not known. The process of metamorphosis consists essentially in a thickening and narrowing of the body, an enlargement of the head, the formation of the swim bladder and permanent teeth, and the development of pigment in the skin, a change that occupied about two months (May to July) in the case of Delage's European specimen. His young conger was 9.3 centimeters (3.6 inches) long at its completion. [73]

General range

Continental shelf of eastern America: adults are known north to the tip of Cape Cod; larval stages to eastern Maine. Its southern boundary cannot be stated until the congers of the coasts of North and of South America have been critically compared. It is represented by a closely allied species (*Conger conger*) in the eastern North Atlantic.

Occurrence in the Gulf of Maine

The only records for adult congers within the limits set here for the Gulf of Maine are of one taken at North Truro, Cape Cod; a second specimen trawled close to Provincetown in Cape Cod Bay, July 5, 1951, by Capt. Herman Tasha; and a third, trawled south of Nantucket shoals by *Albatross III*, in mid May 1950. [74] But the conger must be much more plentiful at times off the shoals than the foregoing would suggest for Capt. Henry Klim of the dragger *Eugene H* reports trawling 1,400 pounds of them there, at 76 fathoms, March 25-30, 1951. [75] And its curious band-like "leptocephalus" larvae have been found within the Gulf on several occasions. Thus, half a dozen specimens were picked up on the beach at Cherryfield and Old Orchard, Maine, and at Nahant, Mass., [page 157] more than a half century ago. Two specimens, also picked up on the beach, were sent up from Newburyport, Mass., in November 1929; and A. H. Clark, of the U. S. National Museum, informs us that he has found many larvae of the leptocephalus type at Manchester, Mass., which probably were congers to judge from their size.

The conger occurs regularly and commonly to the west and south of Cape Cod, being taken near Woods Hole from July into the autumn, and about Block Island from August until November. Very little is known about their movements. But we suspect that they shift offshore into deeper and warmer water for the winter, judging from their absence then in shoal water, contrasted with the large offshore catch in March mentioned above (p. 156) and with the fact that we saw several trawled at 50 to 142 fathoms off southern New England on the *Albatross III*, in May in 1950.

[64] the American conger had long been considered identical with the European. But Schmidt (*Nature*, vol. 128, 1931, p. 602) has recently shown that it is a distinct species, characterized by having fewer vertebrae; a relationship paralleling that between the American and European eels of the genus *Anguilla*.

[65] For an account of these, see Smitt (*Scandinavian Fishes*, vol. 2, 1895 pp. 1015-1017, 1037.)

[66] Jenkins, *Fishes of the British Isles*, 1925, p. 275; see also Day, *Fishes of Great Britain*, vol. 2, 1884, p. 253, for large European congers.

[67] Cunningham (*Jour. Mar. Biol. Assoc. United Kingdom*, N. Ser., vol. 2, 1891-92, pp. 16-42) gives an interesting account of this and other phases of the life history of the conger.

[68] See *Nature*, vol. 128, 1931, p. 602, for a discussion of this question by Dr. Schmidt.

[69] Eigenmann, Bull. U. S. Bur. Fish., vol. 21, 1902, p. 37.

[70] For photographs of the leptocephalus stage of the European conger, see Schmidt, Rapp. et Proc. Verb. Cons. Perm. Internat. Explor. Mer, vol. 5, No. 4, 1906, pl. 9, figs. 8, 9; and Meddelelser Komm. Havundersøgelser, Ser. Fiskeri, vol. 3, No. 6, pl. 1, figs. 1-3.

[71] Comptes Rendus Acad. Sci. Paris, vol. 103, 1886, p. 698.

[72] Fish (Zoologica, New York Zool. Soc., vol. 8, 1927, pp. 307-308) gives a table of the numbers of body segments for various eels and for "leptocephalus" larvae of known and unknown parentage.

[73] Schmidlein (Mittleil, Zool. Stat. Neapel, vol. I, 1879, p. 135) speaks of young "congers" at Naples in April as hardly one-third as long as this, a discrepancy suggesting that these may actually have belonged to one of the Muraenoid eels.

[74] Local reports of congers do not necessarily relate to the true conger, for the eel pout (p. 510), which is common in the Gulf, is often misnamed thus.

[75] At lat. 40° N., long. 69° 50' W.

Fishes of the Gulf of Maine by Bigelow & Schroeder is the seminal work on North Atlantic fishes. It was originally published in 1925 with William Welsh, a Bureau of Fisheries scientist who often accompanied Henry Bigelow on his research cruises. In the late 1920's, Bigelow began a long association with William C. Schroeder, publishing a number of papers and reports on fishes of the North Atlantic, including the first revision of *Fishes of the Gulf of Maine*. This excerpt is from that 1953 edition.

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