

Tautog

Tautoga onitis (Linnaeus) 1758

[Jordan and Evermann, 1896-1900, p. 1578]

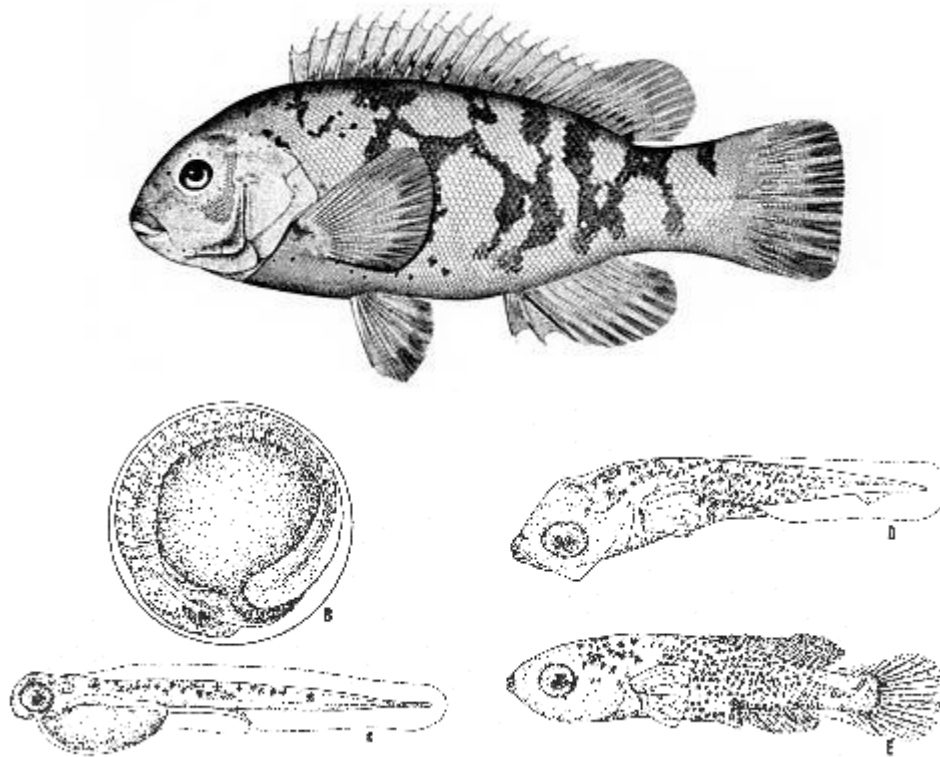


Figure 250 - Tautog (*Tautoga onitis*)

A, adult, Woods Hole, Mass.; from Goode, drawing by H. L. Todd

B, egg

C, larva, one day old, 2.9 mm

D, larva, 5 mm

E, young fry, 10 mm

B-E, after Kuntz and Radcliffe

Description

The tautog suggests an overgrown cunner, but it is a heavier, stouter fish (about three times as long as deep, not counting the caudal fin) with caudal peduncle so broad and caudal fin so little wider than the peduncle that it is hard to hold a heavy one by the tail. The most obvious differences between the two fish are that the dorsal profile of the head of the tautog is high-arched, its nose is very blunt, and its lips are much thicker, giving it a facial aspect quite different from that of a cunner. A more precise if less obvious character is that the cheek region close in front of the gill opening (scaly in the cunner) is naked in the tautog and velvety to the touch. The fins of the tautog practically reproduce those of the cunner in relative size and location. The dorsal fin (16 to 17 spines and 10 soft rays) originates over the upper corner of the gill openings and runs back the whole length of the trunk; the anal (3 stout spines and 7 or 8 soft rays) corresponds in outline to the soft portion of the dorsal, under which it

stands. The caudal fin is slightly rounded at the corners, the pectorals are large and rounded, and each of the ventrals has one stout spine. The jaw teeth of the tautog (in two series) are stout, conical, with the two or three in the front of each jaw larger than the others. The tautog has, besides, two groups of flat, rounded, crushing teeth in the rear of the mouth, as the cunner has also.

Color

The tautog is a rather dark fish, generally mouse color, chocolate gray, deep dusky [page 480] green, or dull blackish, with the sides irregularly mottled or blotched with darker. These mottlings are more evident in the young than in adults and usually they are grouped as three pairs of more or less continuous bars. Large fish are often almost plain blackish. The belly is only slightly paler than the sides, but the chin usually is white on large ones, a very conspicuous character. Tautogs, like cunners, vary greatly in color on different bottoms, and also in their markings.

Size

Maximum length about 3 feet. The 22½ pounder, 36½ inches long, mentioned by Goode [93] as caught off New York in 1876 and preserved in the United States National Museum, still remains the heaviest fish recorded definitely. Fish of more than 14 pounds are very rare, with 12 pounders unusual. Tautog average about 2 to 4 pounds as they come to market.

Habits

The tautog is even more strictly a coastwise fish than the cunner. Northward from Cape Cod it is unusual to catch one more than 3 or 4 miles from the land, or deeper than, say 30-60 feet; we have never heard of one caught on a long line set for cod or haddock, and they are unknown on the offshore fishing banks. But they range farther out and deeper to the southward, being one of the commoner fishes caught in 10-13 fathoms on the Cholera Bank, 10-12 sea miles offshore from Long Island, and on Seventeen Fathom Bank, 8 miles off northern New Jersey. At the other extreme, they follow the flood tide up above low-water level around ledges, to prey on the abundant supply of blue mussels along the intertidal zone, dropping back into deeper water during the ebb. We have helped to seine many small ones close along the shore in only a few feet of water, at Provincetown as well as southward, and it is not unusual for tautog to run up into brackish water, but we have never heard of them entering fresh water.

Their favorite haunts are along steep, rocky shores; around breakwaters, offlying ledges and submerged wrecks; around the piers and docks; over boulder strewn bottoms; and on mussel beds. In some places, however, good numbers are caught on smooth bottom, far from any rocks (the eastern side of Cape Cod Bay is an example, see p. 482). And young fry, 2 to 4 inches long, are often seined on sandy beaches. [94]

When tautog are not feeding they are likely to gather in some hole or cleft among the rocks, where they lie inert, on their sides, often several crowded together, until the rising tide stirs them to activity again. [95] And they are extremely local fish, perhaps more so than any other Gulf of Maine species that is interesting either to the angler or to the commercial fisherman.

While tautog are seldom seen before well into April in any part of their geographic range, or after November, they do not carry out any extensive migrations with the seasons. At most, those that find themselves in shoal water in autumn may drop off into slightly deeper water, to spend the cold season lying among eelgrass (*Zostera*), where this has reestablished itself; in crevices among rocks; or (in the

case of the young ones) in empty oyster and clam shells. They move and feed little then, though they have been caught in lobster pots there and on hook and line off Rhode Island. [96]

Tautog, like cunners (p. 475), are sometimes chilled and killed if they are caught in shoal water by a sudden cold snap, as happened along Rhode Island and southern Massachusetts in 1841, 1857, 1875, 1901, and no doubt on many other occasions that have not found their way into print or into the records of the Bureau of Fisheries.

Food

Tautog feed on invertebrates, chiefly on mollusks (both univalves and bivalves), especially on mussels which are the chief diet of the tautog living about ledges, and on barnacles that they pick off the rocks. Crabs and hermit crabs are favorite morsels. They also eat sand dollars, scallops, amphipods, shrimps, isopods, and lobsters, swallowing the smaller ones whole, but cracking the larger with their crushing teeth (p. 479). A tautog of about 2 pounds that we once caught off Cohasset, Mass., had made a meal of gammarid amphipods (sand fleas) gleaned from among the rockweed with which the ledge was clothed, though cunners caught at the same time and place were full of barnacles. We think it likely that tautog living in shallow bays (Duxbury, for example) prey [page 481] to a considerable extent on sea worms (*Nereis*); certainly they take these freely as bait.

Breeding habits

About Woods Hole the tautog spawn chiefly in June, and the season for such of them as breed north of Cape Cod is probably early and midsummer. The eggs are buoyant, without oil globule and resemble those of the cunner, except that they are a little larger (0.9 to 1 mm. in diameter). At a temperature of 68° to 72° incubation occupies 42 to 45 hours, and probably 10 to 12 hours longer in the cooler water of Massachusetts Bay. The larvae [97] are about 2.2 mm. long at hatching. When 4 days old (temperature of 68°-72°) they have grown to 3.3 mm., the yolk has been absorbed, and the mouth is fully formed. Larvae of 5 mm. show the first traces of the caudal fin rays; the dorsal and anal fins are differentiated at 10 mm. and by the time the little fish are about 30 mm. long they show the fins, form, deep caudal peduncle, and blunt nose of the adult tautog. The larvae and youngest fry of the tautog and of the cunner resemble each other closely in general form, but the arrangement of the pigment offers a ready means of identification at all but the very earliest stages, for the black pigment cells remain more or less uniformly scattered over the whole trunk in the tautog, whereas they soon cluster in two definite patches in the cunner as is described elsewhere (p. 476).

Probably Tracy [98] is correct in assuming that the young tautogs of 3 to 8 inches, which may be seined in abundance along the shores of southern New England in summer, are 1 year old. Nothing definite is known of the rate of growth of older tautog, nor at what age they mature. But we suspect that large ones of 8 pounds and more may be 8 to 10 years old.

General range

Atlantic coast of North America from the outer coast of Nova Scotia to South Carolina, chiefly south of Cape Ann; most abundant between Cape Cod and the Delaware Capes, and restricted to the immediate vicinity of the coast.

Occurrence in the Gulf of Maine

The center of abundance of the tautog lies to the south of Cape Cod. Most of the authors, in fact, who have written of it have accepted Mitchill's [99] statement that it was not native north of Cape Cod and was introduced there shortly prior to 1814, there being no definite record of them in the Gulf of Maine prior to that date. But it seems far more likely that the anonymous writer who stated in the Gloucester Telegraph of May 5, 1860, that tautog had been plentiful there many years before, and had merely reappeared after a period of scarcity, was correct; also that this reappearance would have taken place in any event, even if none had been liberated north of Cape Cod.

Apart from Mitchill's statement that by 1814 the Boston market had a full supply (which may have come from south and not north of Cape Cod), the first positive record of any in Massachusetts Bay is of several that were caught along the Cohasset rocks in 1824, [1] which the local fishermen said was a species new to them. Tautog, however, were being caught in numbers in the inner parts of Massachusetts Bay (e. g., Lynn, Nahant, Boston Harbor) by 1839; they were more abundant then around Manomet Headland in Plymouth; and they already supported a considerable hook-and-line fishery at Wellfleet. A few years later their presence was established for the coast of Maine, and in 1851 tautog were reported as common (according to Perley) in St. John Harbor, New Brunswick, though these Bay of Fundy fish were introduced (not native). In 1876 the weirs north of Cape Cod took 2,274 pounds of tautog, and in 1879 Goode and Bean described them as abundant in many localities about Cape Ann.

At present (or within the last few years, for this fish fluctuates in abundance from year to year), the regular range of the tautog includes the whole coast line from Cape Cod around to Cape Ann, in suitable localities.

Tautog are less regular northward from Cape Ann, less abundant, and more local. But there are some tautog grounds about the Isles of Shoals, off Cape Porpoise, and about Casco Bay, where Kendall wrote of them in 1931 as having been "locally numerous" for some time previous. [2] We have also heard of tautog along the ledges near Boothbay Harbor and in Penobscot Bay. East of the latter tautog certainly are not common. [page 482] And it is so scarce a fish in the Passamaquoddy region (it has long since vanished from St. John Harbor) that three specimens, only, are known to have been taken there within recent years. [3]

One has been taken near the head of the Bay of Fundy on the Nova Scotian side (Scotts Bay, Kings County) one on the Nova Scotian shore of the open Gulf of Maine (Cranberry Head, Yarmouth County), and one on the outer coast of Nova Scotia near Halifax (Petpeswick Harbor, Halifax County), this last being the most northerly record for the tautog. [4]

The more productive tautog grounds north of the elbow of Cape Cod of which we chance to know are the Cape Cod Bay shore southward from Wellfleet; the Sandwich-Sagamore shore with the jetties at the mouth of the Cape Cod Canal; the bouldery ground around Manomet headland and nearby; Gurnet Point at Duxbury; the ledges off Scituate and Cohasset and especially those off Swampscott; the Nahant, Marblehead, and Magnolia Rocks; and here along the rocky shore from Gloucester Harbor around Cape Ann. The Cape Cod Bay grounds are exceptional, for the tautog caught there are on smooth bottom, not among ledges which are the usual haunts. We have also known of good-sized tautog taken inside of Nauset Inlet (where there are scattered boulders only), one in a lobster pot during the summer of 1949. And quite a number, large and small, are caught within Duxbury Bay, especially around the pilings of Powder Point Bridge.

Although tautog tend to gather in certain choice spots, they move around enough so that some idea of their relative importance along different parts of the coast line can be determined from the catches made in pound nets. Thus the average yield per pound net or trap has run from twice to 20 times as great for Cape Cod Bay as for the north shore of Massachusetts Bay in reasonably good years [5]

during the periods between 1890 and 1921, when the catches for Massachusetts were reported by towns, hence can be localized. [6]

The regional discrepancy has not always been so wide in seasons when the Cape Cod Bay catch has been smaller; in 1909, for instance, when the total catch reported for Cape Cod Bay was only 635 pounds of tautog (with 27 pound nets in operation) the average catch per pound net or set of pound nets was nearly as great for the coast from Boston Harbor to Gloucester (total catch 203 pounds with 12 nets or sets of nets in operation). But the pound nets take a few tautog in Cape Cod Bay, even in years when they are so scarce north of Boston that none at all have been reported for Essex County, despite the fact that the bottom seems more suited to tautog there because rockier. The slightly lower temperature along the north shore of Massachusetts Bay may have been the contributing factor.

During the peak period 1895-1899, the chief center of abundance for tautog for Cape Cod Bay seems to have been along the Sagamore shore, where the yearly catch, per pound net, then averaged about $2\frac{1}{4}$ times as great as for the eastern shore of the Bay, [7] Brewster to Provincetown. And catches of 18,100 pounds of tautog by 2 pound nets at Sandwich in 1895 and 36,010 pounds of tautog in 12 nets in Brewster in 1898 suggest concentrations of tautog quite out of the ordinary. But the best tautog fishing has been reported from the Wellfleet region in recent years.

Catch statistics suggest, also, that not much interchange takes place between the populations of tautog of the Cape Cod Bay region, and of the rocky coasts along the north shore of Massachusetts Bay, for the peaks of abundance (as judged from the reported landings) have fallen in different years in these two regions.

April 29 (1949) and May 1 (1950) are the earliest dates at which we have heard of tautog caught either in Massachusetts Bay or in Cape Cod Bay (Duxbury in both instances). [8] In 1950, which appears to have been an "early" season, they were reported as biting well in Cape Cod Bay by May 25 and at Duxbury by the last days of the month; [page 483] further up the Bay, however, as at Cohasset and Swampscott, very few are caught before July. In most years the best catches are made in August, September, and into October, and we have not heard of a tautog taken anywhere in the Gulf after early November at latest.

The tautog that frequent any particular ground in the Massachusetts Bay-Cape Cod region may be expected to pass the winter in a more or less inactive state close at hand, as they do farther south (p. 480). But we have no first-hand information in this respect.

Presumably the tautog spawn chiefly in June in Cape Cod and Massachusetts Bays, as they do along southern Massachusetts; perhaps into July. [9] But we have found no tautog eggs nor larvae in our tows in the Gulf of Maine, nor have any tautog less than 2 or 3 inches long been credibly reported in Cape Cod Bay or to the northward (we may have missed them as tautog spawn close in to the coast). And we have yet to learn whether the fluctuating stock north of Cape Cod is maintained wholly by local reproduction, or is reinforced from time to time by immigrants from the south. It would be especially interesting to know how many tautogs find their way from Buzzards Bay to Cape Cod Bay through the Cape Cod canal.

Fluctuations in abundance

The pound net catches of tautog (averaged for 3-year periods) suggest that a moderate and irregular rise in abundance took place in the northern side of Massachusetts Bay from 1890-1892 (yearly average, 140 pounds) to 1899-1901 (yearly average, 1,049 pounds), followed by a corresponding decrease so extreme that none at all were reported from the pound nets of Essex County for 1917 to 1919, in the Massachusetts statistics, [10] only 42 pounds for 1920, and none for 1921. The local stock

seems next to have built up again about to its former level, to continue so during the period 1928-1938. [11] Our angler-correspondents report that some tautog are caught along the Essex County rocks every summer, since then. But the fisheries statistics have not afforded information as to the tautog situation there for the past few years.

In the Cape Cod Bay region (again according to statistics of the landings) tautog seem to have been scarce for some years through 1890; then to have increased in numbers to a rather pronounced peak of abundance in 1895-1900, when the reported catch averaged about 13,190 pounds yearly (the maximum 22,264 pounds in 1895), an increase that came 5 or 6 years earlier than the upswing recorded for the north shore of Massachusetts Bay. There appear to have been fewer in 1899 (6,282 pounds recorded); perhaps not more than half as many in 1906 or in 1907 (3,168 pounds and 2,934 pounds reported) when the publication of the catches by towns was resumed, and apparently rather fewer still during the 4-year period 1908-1911. [12]

The Cape Cod Bay population seems to have been at about this same level in 1917, and tautog seem to have been more plentiful again in 1918, when the very large catch of 36,000 pounds was reported from the pound nets along the shore line of Brewster. But they fell, then, to so low an ebb that the reported yearly catches for 1919 and 1920 were only 801 and 877 pounds, respectively, and 44 pounds in 1921. Catch records tell nothing as to the status of the tautog in Cape Cod Bay since 1921. [13]

The disappearance of the eel grass (*Zostera*) about 1930-1931, must have altered their local habitat for the worse. But the stock seems to have built up again with the reappearance of eel grass here and there. And tautog have been plentiful enough around Cape Cod Bay during recent summers for party boats, hand-lining, to have made good catches there day after day. The traps at Barnstable continue to take some even though they are set on sand bottom, with their best catches in autumn when a single lift of 4 traps sometimes yields as much as 400 pounds.

According to local report, 1950 was a very good tautog season in Cape Cod waters. But the commercial fishermen took few or none smaller than one-half pound that year. [14] What this presages for the future remains to be seen.

Importance

Tautog are not plentiful enough anywhere north of the elbow of Cape Cod to be of any great commercial importance, and never have [page 484] been, but there is a ready sale for all that are brought to market, most people thinking this a very good table fish. And with so few fishes in the Gulf of Maine that can be classed as "game" (that is, affording sport on rod and reel), we may well wish the tautog were more plentiful there, for they put up so strong a resistance that tautog fishing is very good sport indeed.

Along the stretch from Manomet Headland, Plymouth, to Cape Ann, tautog are caught either from a boat at anchor over submerged ledges or bouldery bottom, or by casting with a long rod from dry ledges or from the rocky coast line. In either case, the fish are so local and irregular in distribution (depending on the food supply and also on the contour of the rocks) and so stationary that it is worth fishing for them only in certain spots. Even so, a few feet one way or the other may mean the difference between success and failure. In Cape Cod Bay, however, where the tautog are on smooth bottom, they lie in little openings among eel grass (whenever there is any), "with just their snouts sticking out" as an angler friend writes us, [15] "and, by lowering a fiddler or hermit crab in the clear spot in front of them, they will be caught in very shallow water."

Fishing the Cohasset rocks, we have found green crabs (*Carcinides*) the most attractive bait, whole if small enough, cut if larger; rock crabs (*Cancer*), or hermit crabs second best; large snails or cockles

(Polynices) fairly good; lobster would perhaps be best of all, were it not so expensive. Mussels are often successful. And small whole clams are good, hooked through the "neck", (actually the siphon) with the shell cracked so as to let the juices escape, but they are next to worthless if shelled because they are stolen almost at once by the swarms of cunners. Anglers tell us that the same baits are used along the north shore of Massachusetts Bay. In Cape Cod Bay, where tautog are caught on smooth bottom (p. 480), the baits most used are hermit crabs and fiddler crabs. [16] We once had a good sized tautog strike a sea worm (Nereis), behind our boat, while trolling for striped bass.

When a tautog bites, it passes the bait back to the pharyngeal teeth, to crush the shell before swallowing; in doing so he gives several distinctive jerks or twitches. This is the time to hook him; many are missed by being struck too soon by anglers not experienced in the ways of the tautog.

[93] American Fishes. 1888, p. 292.

[94] We have seined tautog fry in such situations in localities as far apart as Provincetown Harbor; Woods Hole, Cape Poge Bay, Marthas Vineyard, and Cape Charles Beach, Va. And good numbers of larger tautog have been reported as caught occasionally in nets in the vicinity of Provincetown; 8,700 pounds for example in 1898, and 5,800 pounds in 1899.

[95] We have often observed this habit of theirs in the large live tank at the Woods Hole Oceanographic Institution.

[96] Tautog have been described as burying in the mud, but we cannot vouch for this. And we put no credence whatever in the old myth that the vent of the tautog closes over in winter.

[97] Kuntz and Radcliffe (Bull. U. S. Bur. Fish., vol. 35, 1918, p. 92) describe the eggs, larvae, and fry.

[98] 40th Ann. Rept. Inland. Fish. Rhode Island, 1910, p. 137.

[99] Trans. Lit. Philos. Soc., New York, vol. 1, 1815, p. 400.

[1] Goode, Fish. Ind., U. S., Sect. 1, 1884 p. 269.

[2] According to Kendall (Bull. 58, Boston Soc. Nat. Hist., 1931, p. 10-11) the green crabs (*Carchinides maenas*) found in Casco Bay were not native there but had been introduced as tautog bait.

[3] One in Passamaquoddy Bay in 1909 or 1910 (Reported by Huntsman Contrib. Canadian Biol. (1920-1921) 1922, p. 64); a second in a tidal tributary of the St. Croix River in the summer of 1934, and another there in August 1935 (reported by McGonigle and Smith, Proc. Nova Scotian Inst. Sci., vol. 19, 1936, p. 160); all of these were taken in herring weirs.

[4] these Nova Scotian specimens are in the Provincial Museum at Halifax; see Vladykov and McKenzie (Proc. Nova Scotian Inst. Sci., vol, 19, 1935, p. 100), and Fowler (Proc. Acad. Nat. Science, Philadelphia, vol. 67, 1916, p. 517) for further details.

[5] the reported catches for 1895, 1897-1900, and 1910 were 5 to 43 times as great for Cape Cod Bay as for Essex County, made in 1.5 to 2.3 times as many pound nets or sets of pound nets.

[6] 1890-1900; 1906-1911; 1917-1921, in particular. Data are also available for earlier years.

[7] Total catch, Sagamore and Sandwich, 41,053 pounds, with 2 to 5 pound nets or sets of nets working in the different years; Brewster to Provincetown, 18,549 pounds with 14 to 24 pound nets or sets of pound nets in operation yearly.

[8] As reported in Salt Water Sportsman for May 25, 1950.

[9] In 1950 the "spawning run" was reported as about over in Cape Cod Bay by the end of the first week in June (Salt Water Sportsman for June 9, 1950).

[10] One hundred and fifty-eight pounds were reported for that year in the statistics of the U. S. Bureau of Fisheries.

[11] Landings, Essex County, 1928-1931, 1933, 1935, 1938, 0-803 pounds, average about 300 pounds. There is no reason to suppose that the 10,700 pounds reported for 1937 came from the Gulf of Maine. See footnotes p. 415; and p. 422.

[12] Maximum, about 3,900 pounds in 1910; minimum, 635 pounds in 1909; yearly average, about 1,400 pounds.

[13] there is no way of knowing how great a part of the catches reported in subsequent years from "Barnstable County" came from the Cape Cod Bay shore; i. e., from the Gulf of Maine.

[14] Information supplied by Henry Lyman.

[15] Quoted from a letter from Henry Lyman.

[16] Not having fished there for tautog, we welcome this information from Henry Lyman.

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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