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Ray's Bream, *Brama raii* (BLOCH)

by

INGVAR KRISTENSEN

(Zoological Station, den Helder)

Ray's Bream makes its appearance in the North Sea only now and then. Curiously enough, the animals are often washed ashore in a living, or at least in a perfectly fresh state. COUCH already described this in 1867: "it is worthy of notice that a large proportion of them have only been met with dead on the shore after a storm, or ready to expire as if they had been exposed to some incongenial influence of weather or temperature after having wandered from a depth or district which was better fitted to their natural habits". The same is observed with other oceanic species, e.g. the Giant Squid, *Todarodes sagittatus* (LAM.), d. Grote Pijlinktvis, the King Fish, *Lampris guttata* (GM), d. Koningsvis, the Sunfish, *Mola mola* (L.), d. Maanvis, and the Basking Shark, *Cetorhinus maximus* (GUNN.), d. Reuzenhaai. A supposition made by Dr. J. VERWEY is that they are perhaps unable to perceive the direction into which the coastal water is becoming shallower, so that they don't return to deeper water in time, but run straight ashore and are left there dying when the tide is going out.

The Bream is an inhabitant of both the Atlantic and the Pacific and it is common too in the Mediterranean. It seems to prefer rather deep water (400—900 m), but it is said to come to the surface for spawning in summer.

Almost all Breams are found in the North Sea in late autumn, as may be seen from the following figures, based upon data published in Die Tierwelt der Nord- und Ostsee (1929), JENSEN (1937), REDEKE (1941), together with some later as yet unpublished data of the Dutch coast:

Months:	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Febr.	March
Specimens:	—	2	6	28	16	9	3	—

As their centre of distribution in the Atlantic lies rather to the south, we have to assume that "our" animals were migrating northwards. Probably this migration is the result of the extension of their habitat to the north during the summermonths. That the Breams do not reach the North Sea in August already, but hardly before October, may be explained by the fact that the time of temperature maximum in the sea is shifted to a later date, and the further so the greater the depth.

In the North Sea area most specimens have been captured in the northeastern part, especially in the "transition area" to the Baltic. The enumeration, e.g., given in Die Tierwelt der Nord- und Ostsee (1929) for the years 1921—1928, contains 22 animals from the Danish-Swedish shores on a total of 33 specimens for the whole of the North Sea. This is a clear indication that they enter the North Sea by its northern entrance.

It seems reasonable for an oceanic fish to take its route via the wide and deep entrance in the north rather than through the narrow and shallow Straits of Dover. It is useless in this connection to refer to the absence of Bream data for the Belgian coast, because data of stranded fishes are much more rare in Belgium than for instance in Holland or Denmark.

REDEKE (1941) enumerates all specimens known from the Dutch coast since 1932. Their total represents only 10 animals, captured in the years 1832, 1922 (2 specimens), 1927, '30, '31, '35, '37, '38 and '39. But since 1941 more data have been collected, especially in the winter 1949-'50, in which no less than 13 animals were found stranded. It is clear from these data that this winter has broken all records.

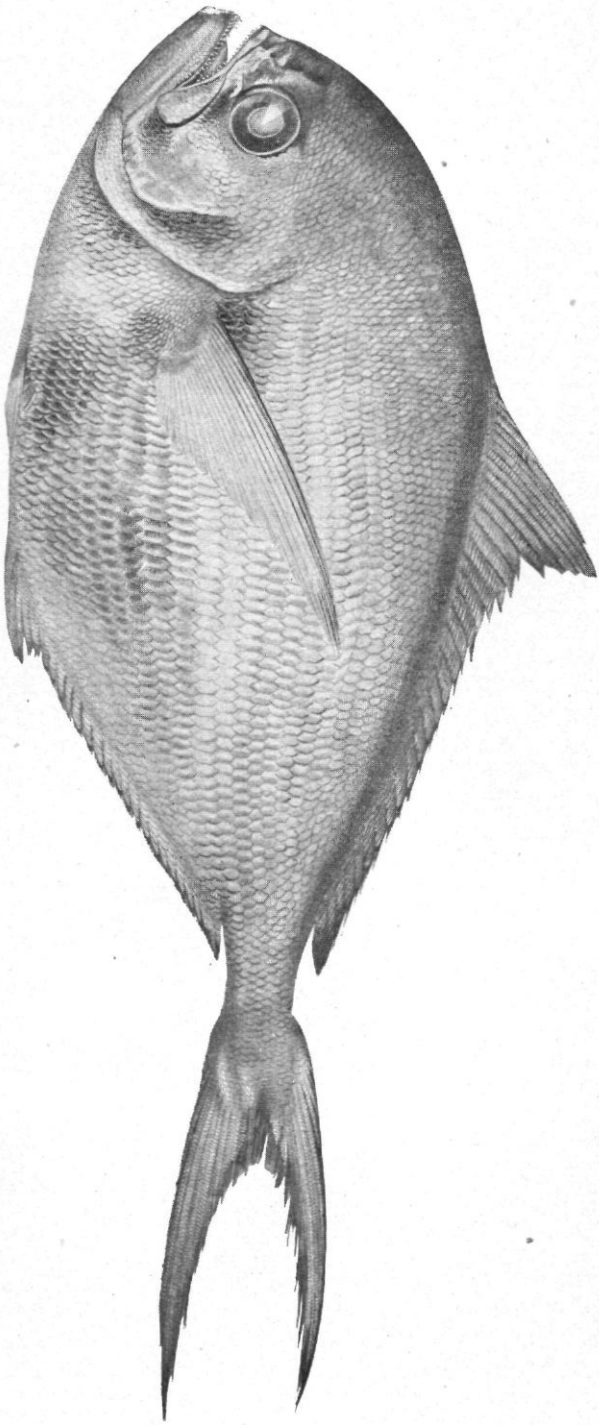
Nr. 1.	4-11-1948		61 cm	58°35′ N. 2°10′ E. 95 m depth.
2.	some days later			from about the same area.
3.	10-12-1949	♀	57 cm	Texel.
4.	27-12-1949			Terschelling.
5.	29-12-1949		53 cm	Terschelling.
6.	29-12-1949		40 cm	near Bloemendaal.
7.	29-12-1949	♂	58 cm	near Egmond.
8.	3- 1-1950		60 cm	near Egmond.
9.	9- 1-1950		45 cm	Texel.
10.	10- 1-1950			Texel.
11.	12- 1-1950		42 cm	Texel.
12.	12- 1-1950		48 cm	near Scheveningen.
13.	16- 1-1950	♂	46.5 cm	Texel.
14.	18- 1-1950	♂	56 cm	near Huisduinen.
15. 16.	winter 1950			59° N. 200 m. depth.
17.	12- 2-1950	♀	40 cm	near Wassenaar.
18.	medio 2-1950		43.5 cm	59°20′ N. 3°30′ O.

Numbers 3—14 were washed ashore, nrs. 3, 7, 8, 10, 11 and 13 still being alive. Nr. 1 is now in the collection of the Government Institute for Fishery Investigation; nrs. 3 and 14 are in the collection of the Zoological Station, Den Helder; nr. 5 in that of the Leiden Museum; nrs. 6, 13 and 18 in that of the Zoological Museum, Amsterdam; nr. 7 is in the Alkmaar Gymnasium; nr. 8 in the townhall of Egmond aan Zee; nrs. 9 and 11 are in the collection of the Texel Museum; nr. 12 is in that of the Museum v. h. Onderwijs, the Hague. Nrs. 2, 4, 10, 15, 16 and 17 have not been preserved: nr. 3 was found damaged on the shore (A. Roos, Terschelling, in litt.); nr. 8 has been consumed (W. Binsbergen, Texel, in litt.); the capture of nrs. 15 and 16 have been communicated to us by H. Wijker, Egmond; nr. 17 was a badly damaged specimen (dr. J. W. B. v. d. Stigchel, the Hague, in litt.).

In the remote past, too, there must have been periods or years of relative frequency. BENNET & VAN OLIVIER stated in 1825: "komt ook, niet zelden, op onze stranden", i.e. "running, not seldom, on our beaches" (especially the addition "on our beaches" gives a certain reliability to their statement).

If we don't confine ourselves to the Dutch data, but review data on other parts of the North Sea too, the year 1927 was most notable in this respect: 15 animals were recorded from the Danish-Swedish waters, 5 from Norfolk, some others off NE-England and Scotland (- and one from the Dutch coast in that year).

What may be the reason for their numerousness in certain years? More species are known which are abundant in certain years only. Often but one exceedingly large "year class" of the fish causes this abundance; this, however, cannot apply to the Bream, because last winter we got both juveniles and adults of this species.



Ray's Bream. *Brama rai* (BLOCH). Dutch: Braam; Flemish: Oud wijf. Natural size 435 mm.
Drawing by M. van Boordt

The sudden abundance of a species may as well be caused by some exceptional hydrographical circumstances in the region in question. So let us try and look for some physical factors in this connection. The autumn of 1949 was an exceedingly warm one, but that doesn't hold for the autumn of 1927, so I cannot believe the temperature only can be responsible. JENSEN (1937) gives the following explanation: „Occurrence happens in series of years when southern and western winds have dominated in summer and when especially strong inflows of "Gulfstream" water must have taken place N. of Scotland to the North Sea". Although this may have been the case in 1927, in 1949 there was no particular dominance of W.winds in the Shetland area during the summer, as may be seen from the meteorological data published by the Royal Dutch Meteorological Institute at De Bilt. None the less it is not absolutely impossible, that the Gulfstream in 1949 too has been pouring more Atlantic water into the North Sea than usually, especially in late autumn, but evidence is yet lacking.

As far as we know, no other Atlantic animals have been strikingly numerous both in 1927 and 1949. In Nov.-Dec. '49, 4 specimens of the Sunfish (*Mola mola* (L.), d. Maanvis) were recorded from the Dutch shore. Just as the Bream, the Sunfish enters the North Sea from the North. Moreover, both species are found on our shores in the same months. As no more than one single specimen is found a year, 4 specimens make a high total for the Dutch coast. In 1927, however, no more Sunfishes seemed to have been found in the North Sea area than usually.

The Tunny (*Thunnus thynnus* (L.), d. Tonijn) was very abundant in the North Sea in summer and autumn 1949, but in 1927 it was exceptionally rare. This species, however, is visiting the North Sea much earlier in the year than the Bream (and the Sunfish), so that it is not very likely to be influenced by the same hydrographical "abnormalities" as the Bream.

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