

# The Barrelfish *Hyperoglyphe perciformis*, a centrolophid fish new to the Norwegian fauna<sup>1</sup>

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A specimen of *Hyperoglyphe perciformis* (Centrolophidae, Perciformes) was taken in a gill net at 4 m depth in the inner Oslofjord (i.e. Holmenfjord, Asker district), SE Norway on 27 July 1983. This is the first record of the species in Norway and the first European one outside the British Isles. Some aspects of morphometrics, with emphasis on the otolith (sagitta) description, and zoogeography are briefly given. It is concluded that this species is unlikely to become established in European waters due to low temperature, and its accidental occurrence here will always be rare.

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The first record of the barrelfish *Hyperoglyphe perciformis* (Mitchill, 1818) (Fig. 1) in European waters outside the British Isles was made 27 July 1983, when Mr. J. Bull-Berg among a gill net catch from the Inner Oslofjord (i.e. Holmenfjord, Asker district), SE Norway recovered a fish species unfamiliar to him. The net had been placed on rocky bottom at a depth of 4 meters close to the shore. The specimen was later presented to Zoological Museum, Oslo for identification and is now kept in the fish collections of the museum (Journ.no. IH 27/83). Unfortunately the specimen had been gutted in preparation for eating, i.e. both gills and internal organs, together with the scales, are lacking. According to Wheeler (1969), the present specimen (390 mm TL) is the largest so far recorded in European waters.

The specimen, of which some morphometric characters are given in Tab. 1, fits perfectly the general descriptions given by Fowler (1936), Haedrich (1967) and Wheeler (1969). The details of the caudal skeleton from a small specimen (50 mm SL) given by Haedrich (1967) also match perfectly that of the present 321 mm SL specimen as revealed by X-rays. This suggests that the ontogenetic development of the skeleton is completed at an early age.

According to Haedrich (1979) an otolith description of this species is lacking. The otolith (sagitta) (Fig. 2) of the present specimen has an oblong, ovoid shape with a marked crenulated edge. Corners are lacking except a praeventral

corner. Rostrum, antirostrum and excisura ostii are prominent, but a postcaudal hollow is not present. In the sulcus acusticus the cauda is narrow with prominent cristae and lacks colliculum. The collum has no corners and is not elevated. The ostium also lacks colliculum. The area crista superior is long and prominent but only slightly broader than the cauda, while a ventral groove is not visible.

Two readily distinguishable hyaline zone are present in the otolith, and these are interpreted as the yearly growth zones. Thus the specimen was in its third summer of life when captured. The second winter ring is situated close to the edge with only a narrow opaque ring outside, which may suggest either that growth has been slow during its last summer of life or that the winter rings are laid down in late spring/early summer.

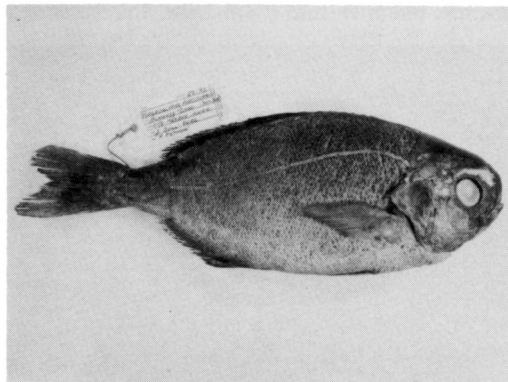


Fig. 1. The Norwegian specimen of barrelfish *Hyperoglyphe perciformis* (390 mm TL).

<sup>1</sup>Contribution No. 169 from the Zoological Museum, University of Oslo.

Table 1. Some morphometric data on the Norwegian specimen of *Hyperoglyphe perciformis*.

Total length (mm TL)	390
Standard length (mm SL)	321
Predorsal length (% of SL)	31.2
Head length (% of SL)	30.5
Snout length (% of SL)	6.8
Diameter of eye (% of SL)	7.5
Least depth of caudal peduncle (% of SL)	9.4
No. of vertebrae (excl. hypural)	25
No. of dorsal fin rays	VIII-21
No. of anal fin rays	III-17
No. of caudal fin rays	20
No. of pectoral fin rays	19
No. of pelvic fin rays	6

The barrelfish *H. perciformis* is one of the five *Hyperoglyphe* species encountered in the Atlantic, and is distributed along eastern North America from Florida to Nova Scotia. Although its life history is incompletely known, the occurrence of the epipelagic young stages in northern parts of north American waters is pointed out by Schwartz (1963) to be Gulf Stream dependent drift, while the reproductive area of the large benthopelagic (?) adults is the subtropical waters along the continental slope off Florida. The few European records are only of young specimens, which mainly occur under various floating objects, and are the result of passive drift with the Gulf Stream across the Atlantic (Holt and Byrne 1903, Wheeler 1969). When compared to the drift of eel larvae, this will be an approximately 2–2.5 years journey, which matches the age of the present Norwegian specimen. It is suggested that the specimen has entered the North Sea through the Shetland-Orkney channel and then, like the recorded

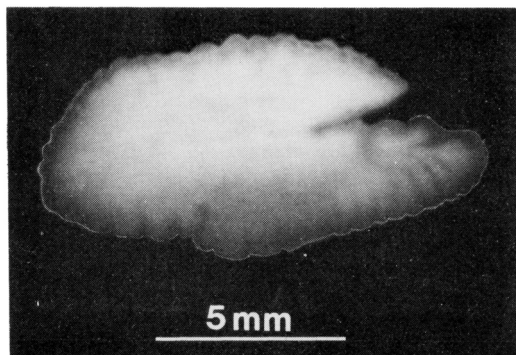


Fig. 2. The left otolith seen from inside.

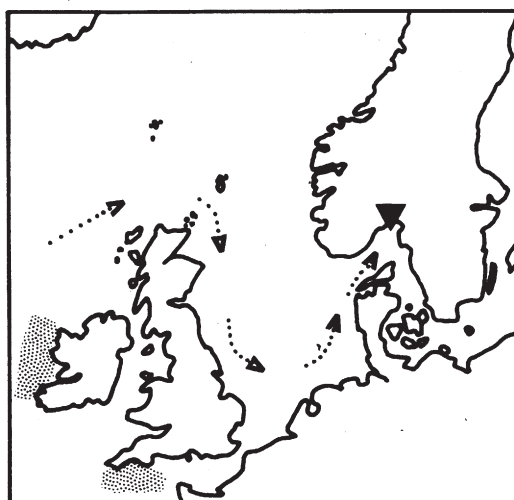


Fig. 3. Map showing the previous European distributional area (.....), the Norwegian locality (▼), and the proposed drift route (.....>).

south Norwegian sea breams (*Brama brama*) (Pethon 1979), followed the southern North Sea current to the inner Skagerak from where it has entered the Oslofjord (Fig. 3).

The previous European records of the barrelfish have been confined to the southwestern part of England and western Ireland (Fig. 3) (Wheeler 1969, Haedrich 1979), where some of the early records comprised hundreds of young specimens around one single flotsam (Holt and Byrne 1903). The presence of such numbers of young in the European Atlantic may bring about the question of why the species has not been able to establish itself as a reproductive species along the continental slope of the British Isles. Temperature and salinity data given by Fuglister (1960) show however, that off Florida the 15°C isotherm is situated at about 500 m depth, but off the British Isles it is close to the surface. It can therefore be suggested, in accordance with the statement of Schwartz (1963) concerning its subtropical reproductive area, that the slope water temperature off Britain is too low to allow any reproduction for this species which lives in deeper waters during its mature stage. It can thus be concluded that the presence of this species in European waters always will be rare and dependent on accidental young vagrants drifting across the Atlantic.

## REFERENCES

- Fowler, H.W. 1936. The marine fishes of West Africa. *Bull. Amer. Mus. nat. Hist.* 70 (2), 607—1493.
- Fuglister, F.C. 1960. Atlantic Ocean atlas of temperature and salinity profiles and data from the international geophysical year of 1957—1958. *Woods Hole oceanogr. Instn. Atlas Ser. 1*, 1—209.
- Haedrich, R.L. 1967. The Stromateoid Fishes: Systematics and a Classification. *Bull. Mus. Comp. Zool.* 135 (2), 31—139.
- Haedrich, R.L. 1979. Centrolophidae. — In: Hureau, J.C. and Monod, T. (eds.). *Check-list of the fishes of the northeastern Atlantic and of the Mediterranean*. Unesco, Paris (2. ed.), pp. 559—561.
- Holt, E.W.L. and Byrne, L.W. 1903. On the British and Irish species of the family Stromateidae. *Rep. Sea Inld Fish. Ire 1901 (2)*, 70—76.
- Pethon, P. 1979. Sjeldne saltvannsfisker fra sydøstnorske farvann i årene 1970—78. *Fauna (Oslo)* 32, 145—151.
- Schwartz, F.J. 1963. The Barrelfish from Chesapeake Bay and the Middle Atlantic Bight, with comments on its zoogeography. *Chesapeake Sci.* 4 (3), 147—149.
- Wheeler, A. 1969. *The fishes of the British Isles and North-West Europe*. MacMillan, London.