

of also catching the young of many economic species, at least in certain seasons.

This curious mode of feeding almost certainly evolved from the voracious habits of their ancestors, this being supported by the fact that related genera, like *Mesoborus* Pell. and *Phagoborus*, for example, are distinctly ichthyophagous, the latter even partly fin-eating occasionally, whereas all members of the sub-family Ichthyoborinae are predominantly carnivorous.

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Mediterranean Fishes of the Family Istiophoridae

SCOMBROID fishes belonging to the family Istiophoridae are rather uncommon in the Mediterranean. However, a species has been known for a long time and was actually discovered there. It is *Tetrapturus belone*, described by Rafinesque¹ from Sicily, where it is captured chiefly during the summer months; later, it was found in other localities, for example, Spain, Genoa, Naples, Malta and the Adriatic.

A second Istiophorid was described by Canestrini² after a specimen was caught in the bay of Genoa. This was given the name *Tetrapturus lessonae*, which was synonymized by subsequent authors with *T. herschellii* Gray or with *T. georgii* Lowe. The type of *T. lessonae* is now preserved in the Museum of Natural History in Genoa; another similar specimen was also caught long ago in the Bay of Genoa and still exists in the Zoological Museum of Turin³. Both these fishes are adult and are easily recognizable as *Makaira albida* (Poey). Such identity was suggested by La Monte⁴ and is fully confirmed by careful study of all their characters; during a recent visit to Florida I became familiar with *M. albida*. This species is well known in the Atlantic, including its eastern part, where it has been recently observed⁵. It certainly exists in the Mediterranean too, but it seems to be of very rare occurrence in this Sea; maybe it does not reproduce there. It is probable, however, that some records of *T. belone* really belong to *M. albida*. We do not know at present whether the *Tetrapturus* living in the Atlantic (for example, Florida) are the same species as those of the Mediterranean. It would appear unlikely that such widespread pelagic fishes as Istiophorids should include a species restricted to the Mediterranean. As new investigations on these huge fishes are carried out, it becomes more and more evident how far we still are from adequate knowledge of them. *T. belone* and *M. albida* are very similar, both morphologically and biologically, and I do not feel certain that they deserve to be generically separated (rather than included in *Makaira* Lac., 1803, which has

priority over *Tetrapturus* Raf., 1810). I would entirely reject their placing in different families, Istiophoridae (*Tetrapturus*, *Istiophorus*) and Makairidae (*Makaira*), which is the procedure adopted by Bertin and Arambourg⁶.

Ben Tuvia⁷ reported a young *Istiophorus gladius* (Brouss.) from Haifa (Israel) and supposed it to be an immigrant from the Red Sea through the Suez Canal. I know no other Mediterranean records of this easily identifiable genus. It is to be looked for chiefly in the southern parts of this Sea, not only eastward, but also in the western section, where the occasional occurrence of the Atlantic form (*I. americanus* Cuv. Val.), that exists along the coasts of Africa and Europe, is quite possible. *Makaira albida* is to be expected in the whole western basin of the Mediterranean. An expert student of Istiophorids, Col. J. K. Howard (Marine Laboratory, University of Miami), recently told me that this fish is sometimes caught off Ceuta and La Linea.

In conclusion, the Mediterranean fauna certainly includes at least three species of Istiophoridae: *Tetrapturus* (or perhaps *Makaira*?) *belone* Raf. (the commonest, known for a long time in the Mediterranean only), *Makaira albida* (Poey) (Atlantic; recorded from the Bay of Genoa), *Istiophorus gladius* (Brouss.) (Indo-West Pacific; recorded from Haifa).

As stated above, further researches are needed. With the co-operation of some ichthyologists from the United States, we hope to improve the knowledge of the Mediterranean Istiophorids and to reach a better understanding of their relationships with the species living in the Atlantic.

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Development of the Polychaete *Fabricia sabella* (Ehr)

A STRIKING feature of the rock shores of the southern coast of Northumberland is the presence of extensive silt patches which lie on top of the rock platforms in the intertidal area. These patches are occupied characteristically by dense populations of the sabellid worm, *Fabricia sabella* (Ehr).

While engaged on an ecological study of this annelid the opportunity was taken to investigate its breeding. Rasmussen has been quoted by Thorson¹ to have expressed the opinion that the reproduction of this species is non-pelagic. A study of the Northumberland population has shown that not only is the development non-pelagic but also that the entire larval development takes place within the tube of the adult female.

When the tubes of adult females collected in May were dissected open the presence was observed of small batches of eggs and larvæ in various stages of development situated in small dilations of the tube, each batch being covered with a mucus envelope. Up to ten batches could be found in a single tube with 1-7 individuals in each batch. The batches were distributed along the length of the tube from the