SEASONAL ASPECTS OF THE POPULATION STRUCTURE IN *CYCLOTHONE BRAUERI* WITH ADDITIONAL FAUNISTIC INFORMATION ON TYRRHENIAN MIDWATER FISHES.

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Summary. The length-frequency distribution of *Cyclothone braueri* in different periods of the year is reported. A list of species of midwater fishes collected in the mid-Tyrrhenian is also given.
Résumé. On donne la distribution de la fréquence de taille de *Cyclothone braueri* dans differentes périodes de l'année et une liste d'espèces de poissons mésopélagiques récoltés dans la Mer Tyrrhénienne centrale.

In order to contribute to the scarce and fragmentary information available on Mediterranean midwater fishes, horizontal tows were made during three cruises in 1975 and 1977 at a station in the mid-Tyrrhenian (40°30'N,12°30'E). Samples were collected with a 15 ft Isaacs-Kidd midwater trawl and a 3 mq ring net (mesh size: 500 µ) at 250, 500, 800, 1000, 1500 m depths.

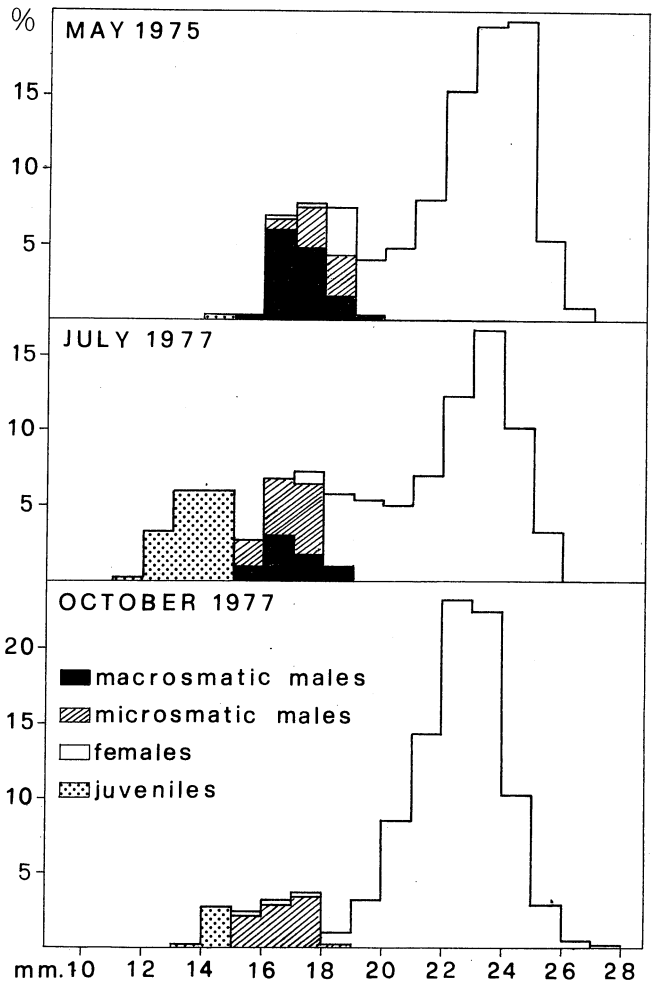
The midwater fish community includes the following species: *Gonostoma denudatum, Cyclothone braueri, C. pygmaea, Vinciguerria attenuata, V.poweriae, Argyropelecus hemigymnus, Borostomias antarcticus, Chauliodus sloanei, Stomias boa, Bathophilus nigerrimus, Myctophum punctatum, Benthosema glaciale, Ceratoscopelus maderensis,Diaphus holti, D. metopoclampus, D.rafinesquei, Hygophum hygomi, H.benoiti, Lampanyctus crocodilus, L. pusillus, Lobianchia gemellarii, L.dofleini, Notoscopelus bolini, Symbolophorus veranyi, Paralepis coregonoides, Notolepis rissoi, Evermannella balboi, Nemichthys scolopaceus.*

It is worth noting the presence of *Borostomias antarcticus* cited only once for the Mediterranean (Tortonese and Zunini Sertorio, 1974).

The most common species sampled was *Cyclothone braueri*. Its percentage length-frequency distribution is reported in figure 1. Sex was determined by gross and histological examination of the gonads. Mature males were distinguished due to the presence of a well developed olfactory apparatus (macrosmatic) (Marshall, 1967).

Both male and female populations are unimodal in all three seasons considered. The percentage of mature individuals, rather high in May, decreases in July, when a small group of juveniles, of undetermined sex, is also present.In October the whole population is composed of immature individuals.

These results confirm that *C. braueri* spawns in spring and summer in the Mediterranean (Jespersen and Tåning,1926) even though the reproduc-



tion rate appears to be lower in summer. In autumn the male population is entirely renewed. Since no evidence of sex reversal was found, probably males live no more than a year and die shortly after spawning.

Badcock and Merret (1976) report a bimodal length-frequency distribution for females of the species in the Atlantic. This is in contrast with our own data and may be due to a different structure of the reproductive pattern in the Atlantic, but further research is needed to confirm this hypothesis.

Fig.1. Percentage length-frequency distribution of *Cyclothone braueri*. (Standard length in mm).

Literature

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