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The jellyfish *Carybdea marsupialis* L., 1758, with tropical and subtropical distribution (HAECKEL, 1879; HYMAN, 1940; TREGOUBOFF and ROSE, 1957), was first observed in the Adriatic by CLAUS (1878), and was considered rare. This cubomedusa has been reappearing since the 1985 (BOERO & MINELLI, 1986) in few specimens, and since the 1989 in large surface aggregations along the Central and North Adriatic. The biological cycle of this species is not yet well known in the Adriatic, and, at present, the polypoid stage is not detected.

In order to assess its biological cycle, the amplitude of the swarming phenomena, and the relations with hydrological parameters and/or pollution, a joint research effort between the University of Trieste and the Centro Ricerche Marine of Cesenatico was settled from August, 1991.

The specimens of *C. marsupialis* here analyzed were caught in the harbor of Cesenatico in August 1991, in water with a mean deep of 2 m. A sample of 1 thousand specimens was collected. The specimens were immediately fixed in neutralized formaldehyde 4 % in filtered sea water.

Annual variation of temperature and salinity were monthly collected with the aim of a sounding net IDRONAUT O.S. 401, near the sampling station (Fig. 1).

The seasonal distribution of the cubomedusa covers the warmer months, from May to November. Mass swarmings are observed mainly within 500 m from the shore, with a density of up to 50 specimens per cubic meter. In May the specimens are mainly small, with a bell size (diagonal between opposite pedalia) of 1 - 2 cm.

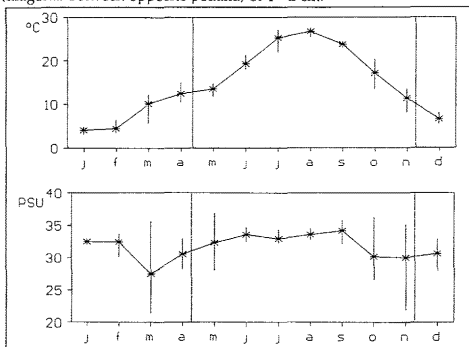


Fig. 1. Monthly distribution of Temperature (top) and Salinity (bottom), 1991. The dotted lines indicate the range of presence of *C. marsupialis* jellyfish.

Parameters measured:	Tot*	min	mean	max
Width between pedalia	100	0.9	2.7	5.0
Min. diagonal of subumbrella	100	0.7	1.8	3.0
Height velarium-subumbrella	100	1.3	2.4	3.0
Length of the gonad	100	0.9	2.0	3.2

* total number of specimens measured

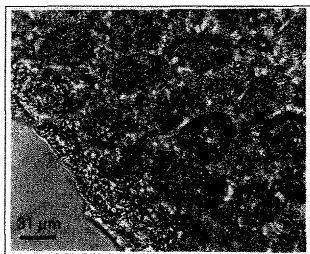


Fig. 2. Biometric data.

Fig. 3. *C. marsupialis*, ovary

Higher densities are detected from June to September. The presence of the medusoid stage is related with a mean monthly temperature ranging from 11.4 (November) to 26.7 °C (August) and a salinity ranging from 30.0 (November) to 34.1 PSU (September) (Fig. 1).

One hundred of specimens were randomly selected from the sample and measured according to the following parameters :

- the diagonal between opposite pedalia (the max. diameter),
- the min. diagonal of the subumbrella, in the apical region,
- the distance between the velarium, at the rhopalium level and the esumbrellar apex,
- the length of the gonad.

We have also histologically analyzed the gonads (see HERTWIG and HERTWIG, 1879, for a brief description) in twelve specimens to assess the maturity stage. The gonads were post fixed in Osmium tetroxide and embedded in Historesin. The semithin sections (1.5 µm) were stained with methylene blue-basic fuchsin and silver nitrate.

The first biometric observations (Fig. 2) indicate that the *C. marsupialis* development is well-balanced within all the considered parameters, with the exception of the diagonal between pedalia, which exhibits an independent development (range between 0.9 and 5.6 cm). There is no positive relation between the biometric observations and the hydrological parameters. It is indeed possible to observe a wide size distribution in the sample. The degree of maturation in the gonads (both ovaries and testicles), as observed histologically, is also not reliable with the jellyfish size (from 1.5 cm of diam.) (Fig. 3) shows a phase contrast micrograph of an ovary, without maturation gradient.

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