

Tintinnid ciliates in the stratified water column  
in the Gulf of Trieste (Adriatic)

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During 1989-1991 a study of tintinnids and other microzooplankton components has been carried out in the southern part of Gulf of Trieste. Tintinnids were monitored over three years, two of which were characterized by the massive presence of mucus macroaggregates.

Tintinnids were sampled monthly with a 5-l Niskin bottle on three stations at three depths in the southern part of Gulf of Trieste (Adriatic sea). Organisms were determined and enumerated under a Wild invert microscope. Tintinnid loricae were measured in order to estimate lorica volume for appropriate shape for biomass estimation. The relationship between lorica volume and carbon content of VERITY & LANGDON (1984) was used for conversion.

Twenty-nine tintinnid species were determined. The tintinnid spring community was dominated by *Helicostomella subulata*, *Stenosemella nivalis* and *S. ventricosa*, while in the summer the species of the genera *Eutintinnus*, *Tintinnopsis* and *Favella* were important. Other genera occurred rarely in low numbers.

Seasonal dynamics of tintinnid biomass during the period of water column stratification showed large differences between the three years. High values of tintinnid biomass in the late summer period in 1989 were probably a consequence of the intrusion of south Adriatic water as indicated by the presence of open sea species. The total tintinnid biomass ranged from 0.2 mg C/m<sup>2</sup> in May to 33 mg C/m<sup>2</sup> in September. Distinctly lower values were obtained for the spring-summer period 1990 and varied from 0.2 mg C/m<sup>2</sup> to 19.4 mg C/m<sup>2</sup>. The lowest biomass was encountered during 1991, reaching a maximum of only 4 mg C/m<sup>2</sup> in mid July. Only the spring-summer 1989 data were comparable to those of REVELANTE & GILMARTIN (1983) for stratified conditions in Northern Adriatic - 57 mg C/m<sup>2</sup>.

The September peak of tintinnid biomass in 1989 and 1990 is probably evidence of the resting cyst phenomenon. We found small specimens of *Helicostomella subulata* in great numbers in the near bottom samples.

It also seems that tintinnid biomass was adversely influenced by the occurrence of mucus aggregates in the water column.

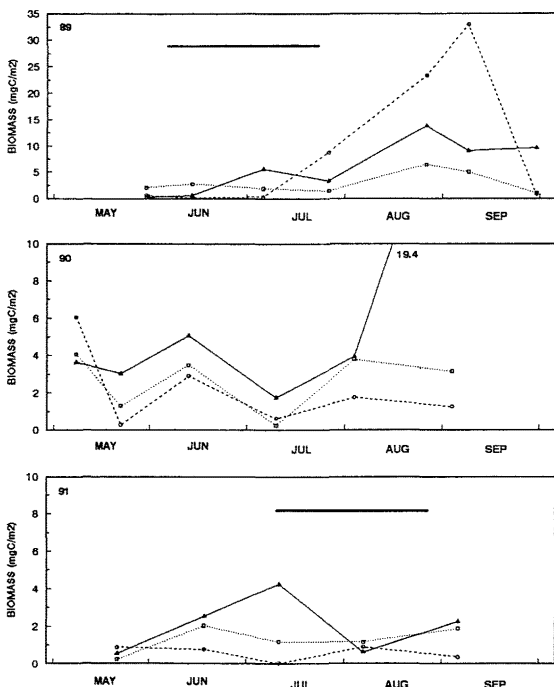


Fig. 1 Tintinnid biomass (mg C/m<sup>2</sup>) in a stratified water column at three stations in the southern part of the Gulf of Trieste during 1989, 1990 and 1991 (note the scale difference). Time periods denoting the massive occurrence of mucus aggregates is delineated by the bold line.

REFERENCES

- REVELANTE N. & GILMARTIN M., 1983.- Microzooplankton distribution in the Northern Adriatic sea with emphasis on the relative abundance of ciliated protozoans. *Oceanol. Acta*, 1983, 6(4):407-415.  
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