

SPECIES OF THE ORDER TINTINNOINEA IN IZMIR BAY AND THEIR
SALINITY AND TEMPERATURE DEPENDENT DISTRIBUTION

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RESUME: Des observations sur la composition en espèces et la distribution des Tintinnoinea, le plus important groupe de ciliés marins, ont été effectuées en baie d'Izmir entre 1979 et 1981. A la fin de ce travail, quarante quatre espèces ont été identifiées et, en tant qu'introduction à leur écologie, les relations entre les espèces et des facteurs écologiques primaires tels que la salinité et la température ont été déterminées.

ABSTRACT: Observations on the species composition and distribution of Tintinnoinea, the most important ciliate group in the seas, were carried out in Izmir Bay between 1979-81. At the end of the investigations 44 species were identified and, as an introduction to their ecology, the relationships between the species and primary ecological factors such as salinity and temperature were determined.

INTRODUCTION: Although much has been written on the topic of ecology of microplankters in recent years, the present knowledge on Tintinnoinea is extremely poor (BOUGIS, 1976). The objectives of this investigation are, first, to report species of the Tintinnoinea in Izmir Bay, second to make clear the annual sequence of the species and to determine optimal salinity and temperature values for them depending on their co-occurrence in natural environment.

MATERIAL AND METHOD: Samples were collected from 17 stations horizontally and monthly intervals with 45 µm fine mesh Hensen type plankton net, fixed in neutral formalin and stored at +2°C until microscopic examination. All species were identified according to their lorica shape as the usual important criterion (MARSHALL, 1969).

RESULTS AND DISCUSSION: In spite of an ecological communi-

ty's response to primary ecological factors is complex, species diversity(s) of Tintinnoinea decreases with temperature however, a temperature value between 16-22°C is appropriate for the most of the Tintinnoinea(Fig.I), the temperature values above 24°C and below 10°C causes a stress on the community. Although temperature is not the only factor

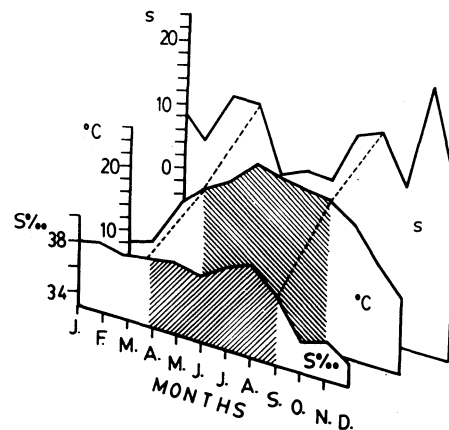


Fig. I: Salinity (S‰), temperature (°C) and species diversity (s) relationships in Tintinnoinea.

diversity of the Tintinnoinea is inversely related to temperature and salinity increases above 22°C and S‰38,2, but the results can not generalise at present and they belong to Izmir Bay. The species identified are : Tintinnopsis beroidea, T. bütschlii, T. campanula, T. compressa, T. cylindrica, T. lobiancoi, T. nana, T. plagiostoma, T. radix, Codonella aspera, Cyttarocyclus eucecryphalus, Stenosemella nivalis, S. ventricosa, Codonellopsis orthoceros, C. schabi, Dictyocysta mitra, D. elegans var. lepidus, D. elegans var. speciosa, Coxiella annulata, Metacyclis jørgensenii, Helicostomella subulata, Favella azorica, F. campanula, F. ehrenbergii, F. fistulicauda, F. markusovszkyi, F. serrata, Protorhabdonella simplex, Rhabdonella spiralis, Xystonella longicauda, Parundella longa, Undella hyalina, Proplectella claparèdei, Steenstrupiella steenstrupii, Amphorides amphora, Amphorides quadrilineata, Dadayiella ganymedes, Eutintinnus apertus, E. elegans, E. fraknoi, E. latus, E. lusus-undae, E. macilentus, Salpingella acuminata, S. curta.

factor affecting structure of community, it is more effective on the species diversity than salinity fluctuations and S‰35,8-38,2 salinities are optimal. In Fig. I, hatched areas is pointed out abnormal conditions for the most of the Tintinnoinea species. As a result, species

diversity of the Tintinnoinea is inversely related to temperature and salinity

increases above 22°C and S‰38,2, but the results can not generalise at present and they belong to Izmir Bay. The species identified are :

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