

## Cycle des matières organiques dissoutes du plancton et du microphytoplancton dans l'estuaire du Belon. Leur importance dans l'alimentation des huîtres



A detailed account is given of investigations carried out during 1967-1969 on dynamics and seasonal variations of dissolved organic matter, plankton and benthic microflora related to the feeding cycle of oysters. The dissolved organic matter was determined by oxidising it with  $\text{KmnO}_4$  in an acid medium in the presence of manganese sulphate. The results were expressed in terms of mg of  $\text{O}_2$  necessary to oxidise the organic matter contained in 1 l of seawater. 2 main periods were noticed, 1 in winter (December-March) when the dissolved organic matter appeared to be present in small amounts having values  $< 2 \text{ mg O}_2$  and the other in autumn having a high dissolved organic matter content with values often  $> 5 \text{ mg O}_2$ . The values for 1968 were significantly higher than for 1969. Studies on plankton include taxonomic composition, qualitative and quantitative estimates and the role of tides in relation to plankton. It was found that diatoms were dominant, 373 species belonging to 86 genera were recorded; 63% of these are known to be benthic though many have pelagic phases. Dinoflagellates ranked second in importance, 141 species in 34 genera were identified. The annual seasonal cycle could be divided into 4 phases, the winter phase of variable duration but not exceeding 3 months followed by a short transitional phase and thereafter the summer and autumn phase. The species diversity was calculated using the Gleason index and it was found that the extreme values for diatoms were between 0.64 and 5.09 and for dinoflagellates between 0 and 3.10. Three groups dominated the zooplankton namely copepods, tintinnids and cladocerans. 41 species of copepods in 27 genera were recorded. 35 species of tintinnids representing 13 genera were noted. Both copepods and tintinnids were found throughout the year while the cladocerans were present mostly from April-November 5 species representing 3 genera of cladocerans were recorded. More tintinnids were recovered in 1968 while copepods and Cladocera were more abundant in 1969. In general there was a correlation between the phytoplankton bloom and the maximum amount of chlorophyll and the pigment diversity ratio was D430/D665. Organisms found in the digestive tract of oysters are listed. The oysters appear to be omnivorous feeding on benthic and pelagic diatoms, dinoflagellates, micro-algae, phytoflagellates, numerous other invertebrate animals and various detritus organisms. The nutritional cycle is divided into 2 main phases: a period of intense feeding in spring and summer with a slowing down phase in autumn and especially in winter.

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