

19 THE LIMNETIC ZOOPLANKTON OF A TROPICAL FLOODPLAIN LAKE : AN ENCLOSURE EXPERIMENT. *S. Declerck** and *C.S. Nwadiaro*** - *University of Gent (RUG) and ** University of Port Harcourt.

During the dry season, the zooplankton community of the floodplain lake Iyi-Efi (Imo State, Nigeria ; maximum depth : 3 m, surface : 46.000 m²) is dominated by small zooplankton at low densities. Due to low water levels, fishes are abundant. In order to estimate the impact of size selective fish predation on the peculiar structure of the zooplankton community, four polyethylene enclosures (cilinders with a length of 2.5 m and a diameter of 0.5 m) were established during the period 16/1 - 7/2/93. The enclosures were weekly sampled, as well as the lake itself. Probably due to the exclusion of fish, mean densities, biomass and body size increased already remarkably one week after the start of the experiment. The increase of total zooplankton biomass, at food levels hardly as high as those in the lake, indicate that food quantity is not a limiting factor in the lake's secondary production during the dry season. With the exception of the less conspicuous nauplii, the vertical distribution of the lake zooplankton revealed a strong preference for the turbid water layer near the bottom. This phenomenon may be explained as a behavioural adaptation to visual fish predation (1). In this respect, food distribution should not be considered as the cause, for chlorophyll a was found to be homogenously distributed, whereas primary production peaked at a depth of 0.4 m.

(1) W. LAMPERT (1989). *Functional Ecology*. 3:321-27.

20 HOW DOES THE INTERTIDAL SNAIL *MONODONTA LINEATA* (GASTROPOD, TROCHID) RECOGNIZE THE EMERSION/SUBMERSION RATIO : A HYPOTHESIS. *J.M. Defossez* - University of Liège (ULg.).

The snail *M.lineata* only occurs at high levels of the intertidal zone (1). Thompson (2) showed that this zonation does not result from interspecific interactions or food requirements. He concluded that some means of recognizing the emersion/submersion ratio must be involved. The purpose of this study was to search for signals associated with this ratio. In a first set of experiments, we have observed that the zone homing behavior described for animals placed at low levels (2) also exists for animals placed below the low tide level. This shows that *M.lineata* is able to recognize a weak emersion/submersion ratio even when no emersion occurs. Therefore, we have searched signals related to submersion only. Seeing that respiration is quite different in aquatic and aerial media, the blood acid-base disturbances of *M.lineata* were studied as a hypothetical signal. The pH was measured with a Radiometer microelectrode G 299/A