

The $p\text{CO}_2$ and concentration in HCO_3^- were estimated following the Cameroun method (3). Firstly the emersion/submersion ratio imposed was 3/1 with a 12h period. Acidosis and alkalosis occurred during emersion and submersion respectively. While pH remained almost constant during immersion, acidosis appeared progressively compensated. With a 1/3 emersion/submersion ratio, the disturbances of the pH were more important. When the animals were immersed after 9h of emersion, the CO_2 partial pressure and the bicarbonate concentration decreased from approximately 4 torrs and 4.5 mmol/l. to 2 torrs and 2.5 mmol/l. respectively. These values remained weak as long as the submersion continued. A submersion after 3h of emersion induced a more important decrease of these factors. The results show that the blood acid-base disturbances could inform *M. lineata* about the emersion/submersion ratio it encounters. Works on this hypothesis are now in progress.

- (1) V. FRETTER and A. GRAHAM (1962). British Prosobranch Molluscs, Roy Soc., London, 323 pp.
- (2) T.E. THOMPSON (1968). *Sch. Sci. Rev.* 149:97-102.
- (3) J.N. CAMEROUN (1971). *J. Appl. Physiol.* 31:632-634.

21 STUDY OF THE MACROFAUNA ASSOCIATED WITH SEAGRASSES IN GAZI BAY (KENYA), WITH EMPHASIS ON THE CRUSTACEA. S. Degraer - University of Gent (RUG).

Little information is available about the macrofauna of Eastafrican seagrassbeds. This study aims to contribute to the knowledge of this macrofauna. Seven stations were sampled in the seagrass beds of Gazi Bay (Kenya). Three of them are situated in the western and the side creek and include *Cymodocea rotundata* and *C. serrulata*. Three stations in the eastern creek include *Thalassodendron ciliatum* and one *T. ciliatum* station is situated in the bay. The benthos of the seagrass beds has also been studied. A distinction has been made between the leaves, stalks and roots. The faunal analysis shows the Crustacea to be dominant : Amphipoda, Isopoda, Tanaidacea, Cumacea, Copepoda, and Ostracoda are the most important taxa. The Decapoda are represented in very small numbers. The animals are, if possible, identified up to the genus-level and a morphological description is given. Their occurrence in Gazi Bay has been discussed. A key to the families and genera has been made. The structure of the macrofauna has been investigated by two multivariate analyses techniques, TWINSPLAN and CCA. These analyses show a difference between the *Cymodocea*-community, the *Thalassodendron ciliatum*-community of the eastern creek, and the *T. ciliatum*-community of the bay. These three communities can also be divided in a leaf-, stalk-, and rootgroup. The eastern and western creek, following a vegetative study (1), are compared by means of the densities of their macrofauna.

The densities of the epifauna of the western creek (1653 ind/m²) are much lower than in the eastern creek (21412 ind/m²). The densities of the benthos of the eastern creek (20085 ind/m²) are much lower than in the western creek (46337 ind/m²). An indirect assessment of the standing stock of the eastern creek gives a value between 0.02 and 166 g DW/m², that of the western creek between 0.0238 and 192 g DW/m².

- (1) P.H. VANAVESAATH, G. VAN DER VELDE and E. COPPEJANS (1993). In : Dynamics and Assessment of Kenyan Mangrove Ecosystems, Final Report, A.F. Woitchik, ANCH, 35-55, Vrije Universiteit Brussel, Belgium.

22 IMMUNOCYTOLOGICAL LOCATION OF ANTIGENS OF *OSTERTAGIA OSTERTAGI* AND *COOPERIA ONCOPHORA*. T.M. De Marez, H. Hilderson, D.C. De Graaf and J. Vercruysse - University of Gent (RUG).

Cryostat sections of the developmental stages (L3, L4 and adult) of *Ostertagia ostertagi* and *Cooperia oncophora*, probed with sera from calves monoinfected with one of the two gastrointestinal nematodes, were used in an indirect immunofluorescence assay. In addition the indirect immunofluorescence assay was also performed on whole nematodes after collagenase permeabilisation to remove the cuticle. Incubation with negative sera showed frequently a slight fluorescence caused by reaction of preinfective sera with nematode antigens. The cuticle of all stages, except for the adults of *Cooperia oncophora*, contained antigens that reacted with anti-*Ostertagia ostertagi* and anti-*Cooperia oncophora* antibodies. L3 exsheathment fluid showed to be strongly antigenic. Furthermore fluorescence of pharynx, anal and reproductive pori in the adult stages suggested the antigenicity of excretion-secretion products. In both the adult and L4 stages fluorescence of the intestine was observed, probably due to the uptake of host immunoglobulines. The fluorescence observed in the muscular body layer and in the uterus might be related to the basal lamina. Anti-*Cooperia oncophora* serum strongly reacted with antigens of *Ostertagia ostertagi* confirming the existence of cross-reacting epitopes between both species. Collagenase permeabilisation showed not to be efficient on these nematodes because of the different cuticle structure.