V.E.Zaika and E.A.Kolesnikova
Institute of Biology of South Seas, Academy of Sciences UkSSR, Sevastopol, USSR
Early changes of meiobenthos quantity on Cystoseira were investigated. Considerable quantative oscillations were revealed in nematodes, harpacticoids, halacaridae with half-daily cycle.
Quantity of all meiobenthos groups are minimal from 8 to 12 a.m. and from 8 to 12 p.m.

Nycthèmere de meiobenthos quantité out eté étudee's sur Cystoseira. on note de très fortes fluschiations de nematodes, harpacticoids, halagaridae un jour et une nuit. Quantite de meiobenthic groupes ont un minimum de 8 a 12 et de 20 a 24 heures.

Daily observations of the number of gastropods on Cystoseira (May, October, 1975) presented considerable periodic changes which can be explained only by vertical migration of Rissoa splendida on thallus (V.E.Zaika and L.V.Tretyakova) 1977). Not only considerable redistribution of R.splendida among vertical layers of thallus was observed but also large oscillations of general quantity of gastropods on the whole thallus, explained by periodical departure and return of R.splendida on thallus.

Oscillations of quantity have half-daily cycle. It is interesting that at the depth of 1,5m and 3,5m quantity of gastropods on thallus changed almost syncronically (with maximum at 10-12 a.m. and 10-12 p.m.), but at the depth of 0,5m reverse picture of migration was observed - with maximum at 10-12 a.m. and 10-12 p.m., minimum - at 4-6 a.m. and 4-6 p.m.

Daily changes of meiobenthos quantity on Cystoseira thallus at the depth of 3,5m were investigated (May, 1976). Considerable quantity oscillations are also revealed in mass groups (nematodes, harpacticoids, halacaridae) during 24 hours.

Ledoyer (1964) connected migration of animals in Cystoseira belt with the changes of content of oxygen in the water. It was proved that the content of oxygen near the bottom was characterized by a low minimum at 8-11 a.m., less considerable one at 8-11 p.m., main maximum at 2-5 p.m., lower maximum at 2-5 a.m.

Rapp. Comm. int. Mer Médit. 25/26, 4 (1979).

165

Analysis of daily changes in gastropod distribution on thallus layers leads to one more interesting problem. It was proved that gastropods in the middle part of thallus in the periods of minimum quantity are not observed, their relative predominance is observed in upper layer.

Harpacticoids predominate in the middle and lower layers in the period of daily quantity maximum, but in the period of night minimum they are in the upper layer.

Nematodes are characterized by their predomination in the upper part of thallus in the periods of general quantity lowering on Cystoseira. Thus 2 suppositions appear: either pass the animals from the middle and low parts of thallus to the bottom or they leave thallus from its upper layer, swimming away or "falling down " from the distal ends of thallus.

As far as harpacticoids is concerned - one may assumed the temporary transition to plankton, as it is known that this animals can quickly colonize the substrates arranged in the water above the bottom (Hauspie, Polk, 1973).

Facts above demonstrate that for understanding of vertical migration of animals on Cystoseira it is necessary to study 3 adjacent biotopes simulteneously : algae thallus, bottom and water column.

It is well known that many species of fishes are feeding in macrophyte belts. Daily migration food animals undoubtedly influence the daily rythm of feeding of fishes, as meiobenthos quantity on Cystoseira changes 2-6 times as a result of migration

References:

- Hauspie R., Polk R. Swimming behaviour patterns in certain benthic harpacticoids (Copepoda). Crustaceana, 1973,25,1,95-103.
- Ledoyer M. Les migrations nyctemerales de la faune vagile an sein de les migrations en Mediterranee. Rec.Trav. Mar.Endoume, 1964,34,50,241-247.
- Zaika V.^E., Tretyakova L.V. Vertical migrations of gastropods on Cystoseira thallus in the Black Sea. Mar. Biology, 4, Vladivostok, 1977, 26-32.

166