THE INFLUENCE OF EUTROPHICATION ON THE COPEPODS IN THE COASTAL AREA OF SPLIT (CENTRAL ADRIATIC)

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En recherchant l'influence de l'eutrophication sur les copépodes de la région de Split (Adriatique centrale), on a obtenu des différences considérables concernant leur composition qualitative et quantitative. Etant donné que la quantité des sels nutritifs était semblable, l'on peut supposer que les autres facteurs écologiques differaient remarquablement, ce qui a influencé la communauté des copépodes.

During long term ecolcgical studies in the coastal area of Split (Central Adriatic), a special attention has been paid on copepods, quantitatively the most important group in zooplankton.

Even though the material was collected in the relatively small area of about 7 NM, the significant difference was found between three investigated stations: the first one - in the central part of the bay, the second - in front of the Split industrial zone, and the third - in front of the Split harbour (Fig. 1).

About 50 species of copepods were found at all. The largest number was found in the Split harbour, and the smallest one in the shallow coastal waters of the industrial area. The increased quantity of nutrient salts (phosphates, especially - BULJAN, STOJANOSKI, VUKADIN, 1976.) was found at both stations, but the influence of eutrophication was not the same. In front of the industrial zone, the increased quantity of heavy metals was registered. In the same time, river Jadro reduces the salinity, so the smallest number of species in this area is due to simultaneous influence of all this factors. On the other hand, in front of the Split harbour, the number of species was high and some pelagic copepods were also found meaning that besides the eutrophication, the strongest mixing of water masses with the channel region and the open sea has been established at this station. So, the largest number of species might be due to the system of currents bringing in some pelagic copepods.

The largest number of specimens appeared also in front of the Split harbour, by same reasons mentioned above.

Besides that, recent results showed quit a different seasonal rhythm of copepods density in the central part Kaštela Bay. In previous investigations, two maxima of copepods were found: the first, in spring, and the second one in autumn (REGNER, 1970). Ten years later, the third maximum appeared in summer, probably caused by larger quantities of phytoplankton available to copepods throughout the year.

In front of the Split harbour, the qualitative composition and density of copepods have been examined, before and after seting up the new collector for city outfalls. The composition of copepods community did not change, but the number of specimens increased due to stronger influence of eutrophication.

Thus, we can conclude that qualitative composition and density of copepods was not as homogeneous as phosphates contents over the investigated area, probably because of prevailing influence of the other environmental factors mentioned above.

Literature

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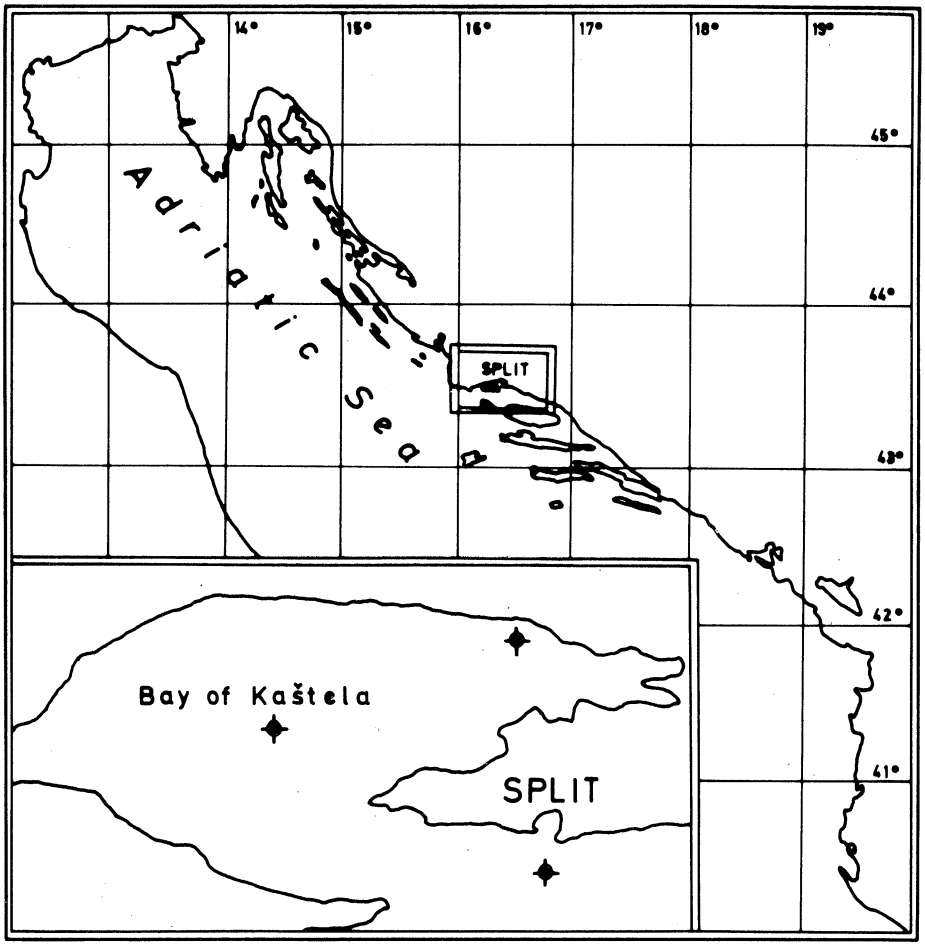

Fig. 1. - Area of investigation