

QUANTITATIVE DETERMINATIONS OF PLANKTON ALONG THE ISRAEL COAST

by B. KIMOR (KOMAROVSKI)

Along the Israel coast, regular monthly cruises are carried out, for many years. The qualitative composition of the planktonic organisms in that part of the Eastern Mediterranean is relatively well known. Since some time very much attention is being paid to the quantitative aspect, and many plankton samples were collected.

In these studies the millipore filtration method of set quantities of sea water from various layers were collected. This method was adopted after the sedimentation method was found to be insufficient for accurate studies due to some of the material remaining suspended in the sedimentation tubes for considerable time.

The distribution and abundance of plankton during the period of the Nile Flood was studied most thoroughly during the month of September, 1962 when three boats took part in the simultaneous survey undertaken along three profiles at right-angles to the coast, namely, from north to south : Tira, Nathania and Rubin.

As it was subsequently found and also confirmed by chemical analyses, the Flood reached only the most southerly profile along the coast at the time of sampling (4th of September, 1962).

The following are the results of the counts made of the total number of cells recorded on the filters according to a standard procedure and expressed as numbers of organisms per litre . Out of the three profiles only of Rubin were the salinities of the water lower than average for that season due to the Nile Flood and this was reflected to a certain extent also in the higher densities of cells per litre of organisms belonging to the above groups.

Although these figures are not yet complete and therefore not entirely conclusive, three suggestions can be advanced as likely to indicate the characteristics of the coastal waters affected by the Nile Flood.

- a) The most productive zone appears to be along the 25 fa contour line.
- b) The vertical penetration of the current is to about 15 m confirming thereby our previous observations.
- c) The layers below 30 m depth are poor in organisms at almost all depths crossing the contour lines where samples were taken.

As far as the data relating to the Tira profile are concerned, the only thing that can be said is that the 25 fa contour line appears again to be the most productive as in the case of the southern profile.

The countings of organisms being very time consuming, a number of such samples have, as yet, not been assessed and, therefore, it still premature to arrive at an overall picture of the plankton distribution at that particular time.

Vertical distribution. The sampling of set volumes of sea water from different depth levels along the three profiles offered also an opportunity to examine not only the vertical penetration of the less saline water but also to determine the depth requirements of the different phytoplankton organisms. Here again tentative conclusions only are offered for those organisms

which are at least common if not abundant at one depth level in order to make the contrast to the total absence or at most sporadic occurrence at another level significant to a satisfactory degree.

At Rubin, although the plankton was dominated by several species of diatoms of which the most common are : *Hemiaulus sinensis*, *Chaetoceros affinis*, *Thalassiotrix frauenfeldii* and *T. nitzschioides* the exact pattern of distribution of these organisms is yet too irregular, due to a number of samples still waiting to be processed, to enable us to draw definite conclusions in this respect. The same is true also of the other two profiles so that the summing up of data and conclusions will form the subject of our future report.

Sea Fisheries Research Station, Haifa, Israel.
