

## PRELIMINARY REPORT ON « PEKTAS » EXPEDITION

by Altan ACARA

As it is known, the Black Sea covers the northern coasts of Turkey, therefore it should be investigated as a whole or at least the characters of the different parts of its aerobic and anaerobic depths should be studied. This investigation is necessary both for academic results and for practical fishery. The special desire to make investigation in the Black Sea during the summer time was to investigate the feeding and spawning area of the fish. The summer season to be well suited for such an investigation partly because we could rely upon having better meteorological and biological conditions. On the other hand, the oceanographical constitution of the Black Sea shows a better situation than the other seasons in a year. For instance, the thermocline slope is nearly about at its maximum value during this time, because of the higher temperature of the surface water. Little, in fact practically nothing, has been published pertaining to the investigations on various characters of the Black Sea during the summer time. For this reason, a large scale research was necessary.

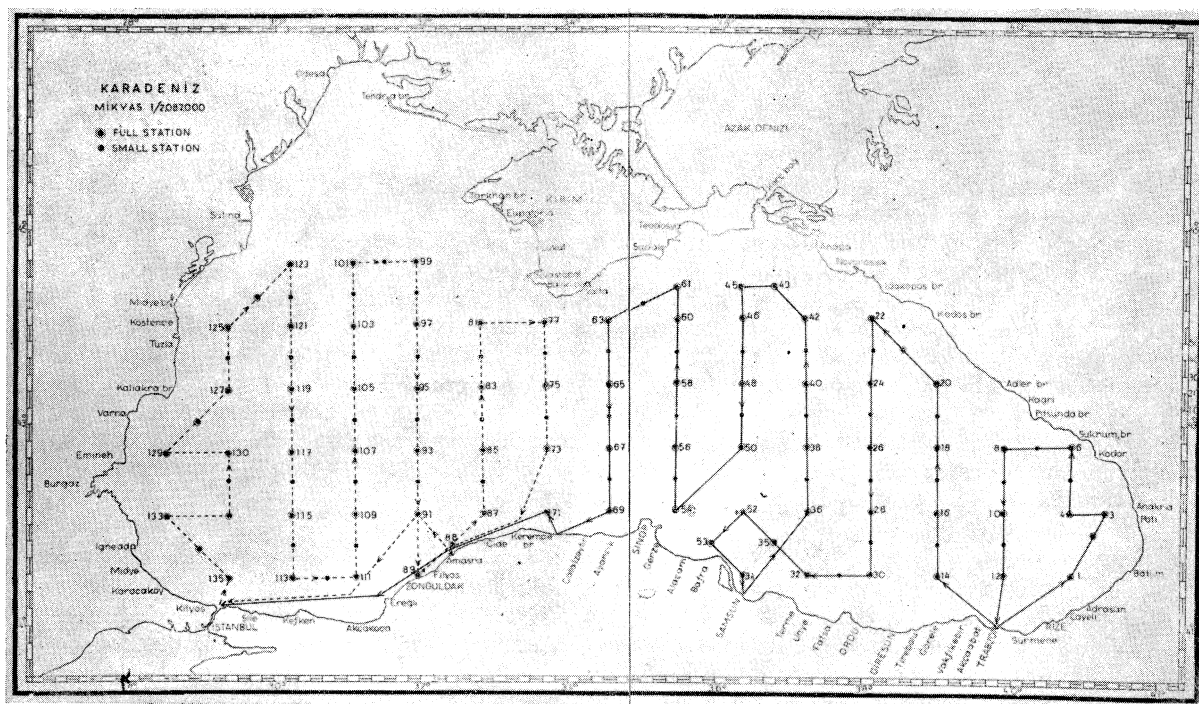
The Black Sea, as a whole, needs to be investigated for its higher feeding conditions that affect the fish stocks in the Mediterranean. A complete explanation on the character of water can be obtained from the investigation of the whole water. And so, during the expedition, along the Black Sea coasts, characters of the water have been investigated and compared by the body mass. If we look over the records of recent expeditions in the Black Sea, we seldom find the dynamical oceanographic investigations. The other speciality of this expedition is that it has been done and prepared to ensure the dynamical investigations. Until now, no complete information was obtained on investigations done by the Russian, Bulgarian and Romanian scientists. That is to say, our knowledge is not enough to characterize the speciality of this region and to solve the problems related with the biological productivity. Therefore, there are contradictory suggestions on the nourishment ability of the Black Sea. All the investigations done before on the Black Sea are not enough to compare the biological productivity of the coasts and the open sea. For this reason, there are different opinions on the capacity of these two regions.

Shortly, the present knowledge on the Black Sea is incomplete and local, therefore systematical hydrobiological investigation is needed. With this aim in view we have organized and performed the Pektas Expedition and the results will be published in a series. During this expedition, M/S Arar (250 gross tons) was used, and the expedition was disigned to continue 24 hours day. The survey covered the area between the  $41^{\circ} 30'$ ,  $44^{\circ}44'$  latitude and  $23^{\circ} 10'$ ,  $41^{\circ} 21'$  longitude. « Pektas » expedition continued from 30/6/1957 to 7/8/1957 lasting for 24 days. It covered 3942 miles. The stations and the route followed during the cruise are shown on map. 1. During this expedition great attention has been paid to meteorological observations; air temperature, air pressure, wind direction, and wind velocity were mesured. In this expedition oceanographical stations, having suitable position for easy collection of samples from every direction were carefully selected according to Anticlock-wise surface currents.

During the expedition we worked at a depth of maximum 500 meters and took fourteen different water samples from the following depths : surface 10, 20, 30, 40, 50, 75, 100, 150, 200, 250, 300, 400 and 500 m.

Temperature, salinity, alkalinity, oxygen, phosphate, nitrite and nitrate were determined. Salinity and alkalinity were made on arrival to Istanbul. Whereas, the others were made in the hydrographical laboratory M/S « Arar ». The determinations of the nitrogen salts were made by a Zeiss electrophotometer Elko II on board. During the expedition 3860 samples were analysed, 2821 of which were made on board in the hydrographical laboratory of M/S « Arar ».

Biological research have been organized by EINARSSON H. D. Ph., GÜRTÜRK N. and AKYÜS E.



MAP. 1. — *The stations and the route followed during the expedition.*

During this research, ecology of plankton, their vertical and horizontal distributions and the effects of summer oceanographic conditions were studied in detail. A comparison between the open sea plankton and our coastal plankton were made. A comparison of our coasts and the northern coasts of the Black Sea were made and the percentage of plankton distribution used or not used as a fish food in different regions and the factors effecting them were investigated. Totally, 280 samples were taken from different depths (surface — 30 m, Surface — 100 m, and from surface) during the « Pektas » expedition.

The echo sounder (a combined asdic and echo-sounder set) was kept running continuously both for echo surveying the area and fixing the ships position by dead reckoning.

In the survey work 10 boxes of echo-paper were used that would amount to 2000 meters of graph. This is the outline and narrative of « Pektas » expedition.

#### ABSTRACT

This paper is a preliminary report on Pektas Expedition. This expedition was made in the Black Sea in 1957. It continued from 30/6/1957 to 7/8/1957 lasting for 24 days. The survey covered the area between the  $41^{\circ}30'$ ,  $44^{\circ}44'$  latitude and  $23^{\circ}10'$ ,  $41^{\circ}21'$  longitude. During this expedition meteorological observations (air temperature, air pressure, wind direction and wind velocity), oceanographic determinations (temperature, salinity, oxygen alkalinity, phosphate, nitrate and nitrite determinations) and biological investigations (quantitative determinations of plankton, eggs and larvae at the same time echo survey) were made.

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