

A bathymetric and geological survey in the middle Adriatic Sea

by

LEOPOLDO TROTTI

Istituto Sperimentale Talassografico, Trieste (Italie)

Abstract*

In the course of Adriatic oceanographic cruises carried out by the Istituto sperimentale talassografico of Trieste, a geological survey of an area WNW of Scoglio Pomo took place between 2-8 December 1965 and 15-16 February 1966. The area explored is about 120 sq. miles and falls between the deeps of Zirje and Jabuka.

This particular survey was motivated by the fact that the submarine topography of the area is not well defined in nautical maps and only in that of DEBRAZZI and SEGRE does there appear a peak of -192 m.

The instrument used was an E.D.O. echo-sounder connected to P.G.R. (Alden Electronic and Impulse Recording Equipment Co.). Correction for velocity of sound, using the tables of BARK, GARSON and MEISTER, was calculated on the basis of temperature and salinity recorded contemporaneously.

The maps which appear at the end of this work are the final result of the echo-sounding network for the area concerned.

The geographical position of the seaknoll is 43°10'16" N, 15°09'52" E. Minimum depth- 173 m. The surrounding sea bottom is between -230 m and -270 m.

The perimeter of the knoll is quite clearly delineated by isobath 200 m. and is circular in shape, with a base diameter of about 1 nautical mile. The sides slope steeply towards the west, south-west and south, less so towards the north.

A ravine, starting some distance below the summit, runs down the south-east side and ends in a sink hole -32 m. deeper than the surrounding sea bottom.

Towards the north-east, along the slopes of the mid-Adriatic shelf and starting from isobath 140 m, three V-shaped twisting parallel trenches are plainly visible. The centre one terminates on isobath 160 m., while the other two end on that of 175 m.

Echograms from the surrounding area of the seaknoll show three different traces — the surface one, sub-surface traces in varying degrees of sharpness, and a deeper well-defined one. All are contained in a sediment strata of about 12-15 m.

A different component is shown in the traces from the knoll itself. Those from the north-west, west and south slopes and the summit merge into a single trace, while those from the other slopes and ravine converge somewhat, through always remaining separate.

The dredged material from the north, west and south slopes and summit consists, for the greater part, of serpulidae forming a biostrome. We assume this is the cause of the single trace echo reflection.

Dredged sediments from the surrounding sea bottom and summit of the knoll give a very different mineralogical and chemical picture. The former show lime and clay with a coefficient of selection around 1,5; those from the summit are sandy with scarcity of clay : coefficient of selection is 3,7.

On the summit and along the slopes, the chemical analysis shows high values of CaCO₃ compared to N and C. The sea bottom sediments show low CaCO₃ and high N and C content.

Further research is in course to determine more detailed data from the foregoing summarized material, and the correlation between echo traces and sediments.

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