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PRELIMINARY RESULTS OF DREDGINGS ON THE MALTA-SIRACUSA, APULIA AND CEPHALONIA ESCARPMENTS ("EASTWARD" LEGS E-3E-78 and E-3F-78)

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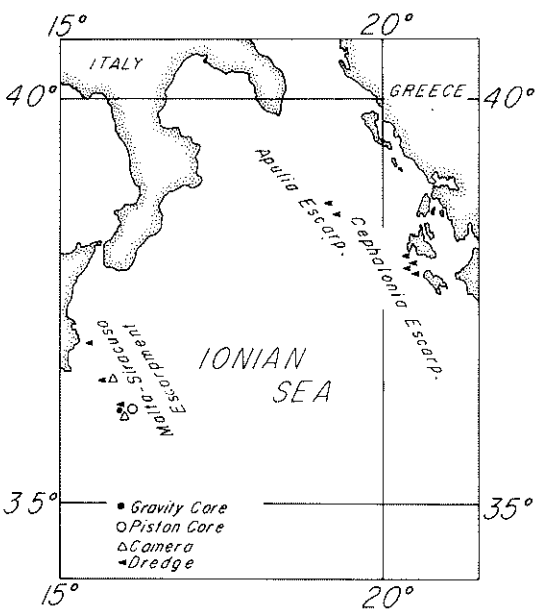
Dredgings along the Malta-Siracusa, Apulia and Cephalonia escarpments were carried out during August and September 1978. The project, financially supported by the National Science Foundation (USA) and by the Consiglio Nazionale delle Ricerche (Italy), was planned as a cooperative program between the Lamont-Doherty Geological Observatory and the Progetto Finalizzato Geodinamica. The oceanographic expedition took place in two legs (E-3E-78 and E-3F-78) aboard the R/V EASTWARD of Duke University, North Carolina. This research was aimed at obtaining more information on the nature and age of the escarpments bordering the western Ionian sea. The program consisted of sampling the rock strata exposed along steep slopes, starting at the base of the escarpments and working upwards to shallower depths. Three dredging transects on the Malta-Siracusa escarpment, two transects on the Apulian escarpment and one transect on the Cephalonia escarpment were chosen (see figure). Preliminary results on the dredged material are reported in this short note.

Malta E escarpment. The escarpment was explored between 3494 and 1885 metres by 7 dredging stations, 7 gravity cores, 1 piston core and two camera stations. The dredged materials include:
- breccia with elements of pinkish crinoidal limestone of probable Jurassic age set in a green dolomitized calcilutite of Tertiary age;
- red marls and marly limestones (foraminiferal wackestone) and associated breccias and other resediments with volcanic and shallow-water lime materials of upper Senonian age;
- white limestones (coarse-grained bioclastic packstones/grainstones with corals, benthic and subordinate planktonic foraminifers) of Eocene age, interpreted as proximal basinal resediments;
- light cream porous calcarenites (bioclastic wackestones/packstones with globorotalids and orbitoids) of Eocene and uppermost Oligocene age;
- olive-grey silty marls with planktonic and benthic forams of Tortonian age;
- whitish porous dolomite breccias of probable Messinian age;
- green dolomitized calcilutites of Tertiary age;
- green-to-pink banded dolomitized limestones of Tertiary age, interpreted as hard-ground;
- indurated hemipelagic marls with planktonic and subordinate benthic forams and pteropods of Quaternary age.



Malta NE escarpment. The escarpment was explored between 3450 and 1804 metres by 9 dredging stations and 1 camera station. The lithotypes recovered are represented by:
- white and cream loferitic limestones with thin irregular algal layers; white Thaumatoporella limestones; white loferitic limestones (bioclastic packstones with Thaumatoporella, Involutina and Glomospira) and light cream shallow-water calcarenites (bioclastic packstones with Triasina hantkeni and Involutina gr. sinuosa) of Upper Triassic age;
- white and light cream shallow-water limestones of lower-middle Liassic age;
- whitish limestones (bioclastic packstones with shallow-water and pelagic materials), interpreted as proximal basinal resediments of Liassic age;
- green dolomitized calcilutites of Tertiary age;
- irregularly banded (pink and green) dololutites of Tertiary age, interpreted as hard-ground;
- vesicular basalts and volcanic breccias with several generations of matrix of unknown age;
- green and brown marls with planktonic and subordinate benthic forams of Early Pliocene age.

Siracusa escarpment. The escarpment was explored between 1987 and 1045 metres by 3 dredging stations. The dredged materials consist of:
- grey shallow-water limestones (bioclastic packstones/wackestones with algal fragments, Involutina and Triasina) of Upper Triassic age;
- light cream and whitish shallow-water limestones (bioclastic packstones/grainstones with arenaceous foraminifers and algal fragments) of lower-middle Liassic age;
- white shallow-water limestones with small fractures filled by ammonite-bearing red sediment of Jurassic age;
- yellowish, poorly lithified calcarenites (bioclastic packstones with fragments of corals, bryozoa and calcareous algae associated with planktonic and larger foraminifers) of uppermost Oligocene-Lower Miocene age;
- calcareous breccias, basalts and volcanic breccias of unknown age.

Apulia escarpment. The Apulia escarpment was explored between 3589 and 1994 metres by 5 dredging stations. The recovered rocks include:
- tan and buff colored fine-grained limestones (bioclastic packstones) and brown dolostones of Cretaceous age;
- cream limestones (bioclastic packstones/wackestones) of Cretaceous age with fractures filled by green limestones containing Tertiary planktonic foraminifers.

Cephalonia escarpment. The escarpment was explored between 3735 and 2058 metres by 4 dredging stations. The recovered rocks include:
- dolomitized loferitic limestones and frequently recrystallized calcarenites (lithoclastic packstones/grainstones) of Mesozoic age;
- dolostones of presumable Mesozoic age;
- monogenic breccias with sub-angular elements of shallow-water limestones, tentatively interpreted as fore-reef breccias;
- polygenic breccias with angular elements of limestones and dolostones;
- cataclastic lime breccias.

The results of the dredgings permit the lithologies recovered on the Malta-Siracusa escarpment to be correlated with those crossed by on-land and offshore drillings in the Siracusa belt of south-eastern Sicily. The Cretaceous rocks recovered along the Apulia escarpment show analogies with the coheval shallow-water limestones of the Apulia zone. Many doubts exist with regard to the Caphalonia escarpment, where the large number of dredged rocks may derive not only from the Apulia platform but also from thrust sheets belonging to the Hellenic chain.

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