At the deep areas, after the shelf break and toward the deep basins of the N. Aegean Trough, a series of alternating of transparent and opaque sets of reflectors were observed. The transparent sets exhibit homogenous thickness and distribution, while the opaque ones usually fill basins where their thickness increases.

From the correlation of the characteristic horizons between the two sectors it is concluded that during periods of regressions, coarse grained material was deposited at the outer shelf and part of it was deposited at the deeper areas, forming the opaque layers. On the other hand during periods of transgressions, the coarse sediments were trapped at the inner shelf, allowing only the fines to be deposited at the deep areas, forming the transparent reflectors.

Taking into account the well known world sea level curvas as well as the stratigraphic and tectonic data collected, the relevant sea level curve for the last 130.000 yr. for the studied area was constructed. From the curva it is evident that sea level changes in the order of a few tens of meters and duration of a few thousand years played a decisive role in sedimentation. On the contrary tectonism contributed only to the formation of the shelf break and the general setting of the sedimentary depressions, without affecting, in these time spans, the sediment distribution and accumulation.

LANDFORMS AND PROCESSES ASSOCIATED WITH THE EXHUMATION OF THE PLUTONIC BASAL SURFACE IN THE AREA OF THE AEGEAN ARCHIPELAGO

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In the presented paper the author gives a survey of the main processes and dominant landforms that are associated with the stripping of the plutonic basal surface from deeply weathered paleosol covers. In the last decade several Greek scientists, above all A. Psilovikos (1981, 1982), L. Sotiriadis (1981) and E.G. Vavliakis (1981), have investigated the relict peneplains whose various components were subject to considerable remolding. All these landforms developed primarily cryptogenically under autochthonous, chemically weathered material. Exhumation took place in the course of the Oldest, Older and Younger Pleistocene when these covers were easily removed. Recent times represent a period of rigorous modification of this once subcutaneous relief. The analysis is based on extensive, detailed fieldwork on the islands of Seriphos, Mykonos, Ikaria, and Naxos and includes comparisons with Siphnos, Syros, and Samos, though igneous rocks either do not occur there or are of no significance.

Sheetwash which started from the pediments of Plio/Pleistocene and older Pleistocene age and from the Younger Pleistocene glacis may be regarded as the main agent of denudation being responsible for the removal of the weathered materials. Rills formed by initial

linear erosion brought destruction of the basal surface. The inselbergs were remolded during the Younger Pleistocene: the basal sharply concave slope of the inselbergs was substituted by forms of accumulation. The tors show nowadays full morhodynamic activity. On the one hand the tors are destroyed by tafoni weathering, on the other hand and at the same time further development is promoted by exfoliation.

At the end of the investigation the Aegean basal surfaces are compared to those of humid middle latitudes. The extensive landscapes of peneplain systems of the humid middle latitudes share the Neogene climato-morphologic heritage with those of the Aegean area. The processes of exhumation, however, took entirely different courses.

GEOGENIC AND ANTHROPOGENIC INFLUENCES ON SOILS OF THE WESTERN THESSALY PLAIN, GREECE

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Chemical analyses were carried out to assess the geogenic and anthropogenic influences on soils of the western Thessaly Plain.

The prevailing soil types are developing on alluvial and colluvial deposits as fluvisols and regosols with a loamy to sandy composition. The pH-values are varying from weakly acid to highly alcaline. Soil contents of metal and non-metal elements (table 1) are used to established correlations between them and soil organic matter or pH-values. Different metal groups may also be associated to different rock types or to human impact. Mathods of selective extraction may help to evaluate the bioavailability of the chemical elements. The origin of several heavy metals by human impact could be elucidated, this in a most impressing example along a highway.

A COMPUTER PROGRAM FOR THE ESTIMATION OF THE MORPHOLOGICAL GROUND INCLINATION FOR THE CONSTRUCTION OF ISOGRADIENT SURFACES

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Maps of isogradient surfaces find applications in different branches of geology, forestry, etc. At different times various methods for the construction of such maps have been devised. These are, however, laborious and time consuming as well as of limited accuracy. So, the methods that depend on the automated acquisition of data by the use of computers