LAGOONAL TO TIDAL CARBONATE SEQUENCES OF UPPER JURASSIC/ LOWER CRETACEOUS AGE IN THE CORINTHIAN AREA: MELANGE BLOCKS OF THE PARNASSUS ZONE

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In the Corinthian are (Acrocorinth/NE-Peloponnesus and Perachora Peninsula), decameter scaled sequences of lagoonal to tidal packstones and wackestones comprise the stratigraphic range of the Thithonian to the Valanginian. The biostratigraphical data are based on algae (Cyanophyta, Chlorophyta) and shallow water foraminifers.

The sequences are rich in coated grains-especially cortoids and oncoids. Pseudomenisci between particles are due to cyanobacterial mucilage in lagoonal environments, comparable to the grapestone facies of the Bahamas. First generations of cements are of marine - phreatic and marine - vadose origin. All facts together are typical of lagoonal to tidal environments.

Microfacies and age indicate that these sequences are part of the Parnassus Zone. One the other hand, tectonically adjacent sequences of deep water facies (cherty limestones with gravity flows, radiolarites) are of the same stratigraphical range. Based on these facts and the chaotic arrangement of the geological units (radiolarites, flysch, ophilites, cherty limestones, km^3 sized blocks of shallow water limestone) we interpret the pre-Neogene Corinthian area as a melange of parts of the Parnassus Zone and the Beotian Zone.

CACG (COMPUTER AIDED GEOLOGICAL CARTOGRAPHY) - 3-DIMENSIONAL MODELLING OF THE METHANA VOLCANOES

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Modern interactive CAD and computer graphics systems offer the opportunity to aquire data from aerial and satellite image and field measurements, to process them for generating 3-dimentsional models, and to produce graphical outputs. An interdisci-

plinary project in Methana has been undertaken to apply such systems with methdos from volcanology, structural geology, digital cartography, photogrammetry, computer graphics, digital image processing, model calculus, data base applications, and geographic information processing.

The 3-dimensional geological map offers a great spectrum of geographic, geological (groundwater circulation and paths; geometry of faults and hydrothermal systems), environmental, argicultural and engineering applications: Recognition interpretation and of geological structures need no experience. With the INGERGRAPH-CAD system, perspective views of an area or a geological body from all directions and angles can be created. Strip or exploded view procedures can be applied to show underground structures and geometric complexities in a 3-dimensional and self-explanatonary way. Size and volume of geological bodies, land slides and rock falls can be calculated.

Methana has been chosen for the following reasons: The penisula represents an ideal geometric object with limited dimensions, approx. 9 X 10 km, and exhibits high morphological contrasts within short distances form sea level to 740 m altitude. In Methana, a series of volcanoes are aligned along major fault zones on a folded basement of Mesozoic limestones. The volcanic structures consist of lava and volcanoclastic flows as well as of plugs, necks and domes with simple geological boundaries.

Several sequential steps have been undertaken to fullfill the requirement of the pilot project.:

— A full topographic image, with 20 m equidistance contour lines, has been derived by digital data flow form aerial image compilation. The result is a new digital topographic map of the Methana peninsula with a high flexibility in choosing different scales as well as a very efficiant and automated process for corrections.

— On the detailed topographic map, including correct drawings of tectonic and volcanologic structures, a geological map has been created. Field observations, and inferred cross sections, permit the estimation of the thickness of the different geological units with high precision.

3-D models of volcanic bodies and tectonic planar structures and of the Mesozoic basement can be achieved as the result of interactiva operations and geological experience. In the case of Methana, a quantitative study of magmatic activity is envisaged using CAGC techniques. One major goal is the understanding of eruption mechanisms.