

GEOLOGICAL AND GEOCHEMICAL CRITERIA ON THE CLASSIFICATION OF MESOZOIC VOLCANITES OF THE HELIKON MOUNTAINS, GREECE

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During the upper Jurassic continuous subsidence of the sedimentary basin of the Helikon area resulted in the deposition of thick radiolarian cherts. This evolution was accompanied by a marked volcanic activity which occurred mainly at the base of the radiolarian cherts. Occasionally volcanics are found as peneconcordant intercalations within the radiolarian cherts. They form pillow-lavas frequently and are closely associated with turbidites and volcanoclastic sequences. They represent submarine basaltic extrusions which show under the microscope partly porphyritic or ophitic textures. Using their thickness, lateral extension, lithologic association and chemistry as criteria for definition, they can be interpreted as submarine, short-lived, small streto-volcanoes which were active near a probable back-arc basin.

SEDIMENTATION AND MAGMATISM RELATED TO THE OPENING OF A MESOZOIC OCEANIC BASIN IN THE AXIOS (VARDAR) ZONE

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A sequence marking the opening of the Axios (Vardar) ocean has been preserved along the western margin of the Vertiscos group (Serbomacedonian Massif). The sequence starts in the Permian with continental fan deposits (Examili formation) indicating extension, block faulting and basin formation on the Hercynian Vertiscos basement. A shelf was then formed during the Middle Triassic rimmed with reefal carbonates. Intraplatform basins received argillaceous pelagic sediments and carbonate olistoliths and olistostromes. Acid volcanics were extruded on the continental margin partly subaerially, partly in deep water. Devitrified obsidian flows and ignimbrites are preserved. Accretionary lapilli indicate phreatomagmatic eruptions resulting from groundwater or shallow marine interaction. Rhyolitic blisters with radiating cracks infilled with carbonate mud and hyaloclastites are evidence of eruption at the base of slopes below carbonate build-ups. In a few places hypabyssal porphyritic rhyolites cut the shelf carbonates. Eroded channels in the volcanics received coarse continentally derived clastics suggesting that the basement was locally exposed on fault scarps.

We believe that the acid volcanism may have started in the Early Triassic but it also