Mborje-Drenova basin - This basin is the continiuation of Grevena basin in Greece forming an analogous syncline as Gora-Mokra one.

Molasse deposits are placed above ophiolites and Upper Triassic - Lower Jurassic limestones and are represented by Middle-Upper Eocene, Oligocene (Stampian-Chattian), Aquitanian, Burdigalien and Langhian deposits.

IMPLICATIONS FROM ROCK CHEMICAL ANALYSIS AND ZIRCON CRYSTAL MORPHOLOGY FOR THE ORIGIN OF PELAGONIAN BASEMENT ROCKS IN THE KAMVOUNIA MOUNTAIN, NORTH THESSALY.

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In the region of the Kamvounia mountains, north Thessaly, granite, gneiss, mylonitic gneiss, ampibolite and various schists constitute the Pelagonian basement which suffered Variscan and Alpine metamorphism. Chemical analyses of major and trace elements allow implications about the origin of these rocks. The mineralogical and chemical compositions of the granitoids (granites s. str. and granodiorites of the Deskati series) indicate a Caledonian I-type character. Using major element discrimination criteria to discern between ortho- and paragneiss, the gneisses and mylonites show constantly igneous origin.

The trace element patterns (e.g. high Rb/Nb and Rb/Zr ratios) of the granites and granodiorite show characteristics of subduction-collision related intrusives. The occurrence of large volumes of undeformed granites attribute them to a late-to post- collisional setting of the variscan Orogeny. The trace element petterns of the gneisses and mylonites are identical to those of the undeformed granites to which they show transitions in the field. We propose that the granites were the protoliths of the gneisses and mylonites but escaped deformation. Therefore, the deformation of the gneissees and mylonites is likely to be of Alpine age.

The external morphology of zircon crystals from the granites and granodiorites is characteristic for magma of a mantle origin. Cathodoluminescence examination of zircons indicate only one growth phase of the zircon crystals. This points to an uninterrupted crystallization process in the magma.

The Caledonian I-type character, the evolution of the zircons, and the post-deformation emplacement allow to correlate these granitic rocks with post-closure uplift in e late stage of the Variscan oregenic area. Granites in such a geotectonic setting have generally an important mantle component.

Amphibolites and amphibolitic schists, which suffered Variscan medium-grade

metamorphism and Alpine low-grade overprint, probably derive from intermediate volcanic rocks and are interpreted to have formed in a subduction-related environmant.

ZEOLITES IN OLIGOCENE VOLCANIC ROCKS, DADIA-LEFKIMI AREA, THRACE, NORTHERN GREECE: MINERALOGY AND CATION EXCHANGE PROPERTIES

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The diagenetic alteration of the Oligocene felsic volcanic rocks in the Dadia - Lefkimi area, Thrace, has led to a replacement of the parent glassy material from zeolite-bearing assemblages. The alteration is more intense in vitric tuffs forming pseudomorphic textures over the precursor glass shards. Mineralogical and petrographic investigation including thermal treatments, revealed that three authigenic mineral assemplages are present in these rocks:

a) Clinoptilolite + celadonite + cristobalite

b) Clinoptilolite ± mordenite + smectite + cristobalite

c) Heulandite 2 + smectite + cristobalite

The distribution of the authigenic assemblages is not systematic in both the horizontal and the vertical sense. This is probably due either to fault tectonism (destruction of the original lithostratigraphic sequence) or to the lack of recognizable marker horizons or both. The assemblage b is the predominant one, with the clinoptilolite occuring both in the form of pseudomorphic replacements of glass shards and as a pore filling mineral. The cation distribution of the heulandite - group minerals is characeristic of heulandites with thermal behaviour 2 and 3. Although a clear relationship between the clinoptilolite/heulandite and mordenite was not found, tectural features indicate that at least some mordenite might have been formed after clinoptilolite/heulandite.

The cation exchange capacity of the zeolite bearing rocks varies between 67 meq/100 gr and 136 meq/100 gr, with the highest values observed in the ash tuffs. The latter materials might find potential use as exchangers in both municipal and radioactive wastewater treatment.

