On the decompressional path of the second metamorphism the rocks experienced extension in NE-SW direction (D_{2e}) in the Late Eocene and Oligocene. D_{2e} was coevel to low- to very low-grade metamoprhic transformations (Kr_{2e}). Temperatures and pressures are estimated in the range of little more than 400° to 300°C and 6-7 to 3 Kb. Finite strain is mainly of the flattening type.

Brittle-ductile compressional deformation (D_3) took place in the Late Oligocene to Early Miocene. Conjugate kink folds and brittle shear zones, open folds, and a spaced foliation formed.

HP/LT METAMORPHIC CONDITIONS AND DEFORMATION IN THE TECTONIC WINDOW OF KRANEA (W. THESSALY, NORTHERN/CENTRAL GREECE)

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At the central part of the Kamvounia mountain chain located in W. Thessaly, the carbonate «Unit of Kranea» reveals in the form of a tectonic window.

The Pelagonian nappe is found to be overlain on the carbonate sendiments. The nappe consists of a Paleozoic polymetamorphic gneiss-schist basement with a lot of granitic intrusions, a Permo-Triassic volcanosendimentary sequence, and a Triassic-Jurassic carbonate cover.

Ophiolitic bodies are interposed between the Pelagonian nappe and the autochthonous to parautocthonous carbonate «Unit of Kranea».

HP/LT-metamorphism (P = 8-12 Kb, T = 300° – 450°C) characterize the lower, pre-HP/LT also metamorphosed, parts of the Pelagonian nappe, nearby their contact with the underlain «Unit of Kranea».

Greenschist metamorphic facies ($P \leq 6$-7 Kb and T = 400° – 480°C) replaces the HP/LT metamorphism, at the parts of the Pelagonian nappa that are far off their tectonic contact with the Unit of Kranea.

Both metamorphic events are accosiated with the same rotational deformation and the sense of shear, top to SW.

During middle to upper Eocene and as the D-1 deformation was developing a «nappe tectonic» took place on the carbonate sendiments of the foreland. This formation represents today the Unit of Kranea. Constrictional-type deformation characterize the evolutionary stages of the D_1-event.

During the end of Eocene-early Oligocene a further D_{Se}-streching of the orogeny, with the main movement towards SW, follows. Localy this streching took place in coaxial deformation conditions or even more with a NE movement. Simultaneously another metamorphic

event is developing in more declined P/T conditions from P = 8-9 Kb and T = 420°C to P = 3-4 Kb and T = 300°C, conbined with the gradually uplift of the orogeny.

During the end of Oligocene the D_2 compressional event that followed is connected with lower P/T conditions, which are indicated by the absence of sinkinematic crystallization.

During Miocene and later, extensional tectonic in brittle conditions, breaks the studied area, giving neotectonic horsts and grabens.

THE ORIGIN AND EMPLACEMENT OF THE VRONDOU GRANITE, SERRES, N.E. GREECE

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The Vrondou Granite, north of Serres, N.E. Greece, is an Oligocene I-type pluton consisting mainly of quartz monzonite, but with subsidiary acid and basic members. It was emplaced in the lower tectonic unit of the W. Rhodope Massif at its western boundary, and borders the Strimon and Serres basins to the west and south.

The southern and eastern contacts are strikingly different in character and suggest that the pluton was empleced in an actively forming space during south-west directed extension. The southern boundary is a wide mylonitic shear-zone, dipping moderately to steeply to the SSE, with a gently SW plunging lineation and top-to-SW sense of shear. It affects both country rock and granite, and, importantly, is cut by late melts which are also sheared, implying active deformation during emplacement. The shear zone shallows in dip northwards, but steepens southwards into the major normal fault bounding the Serres basin. Immediately to the south of this fault and the main Vrondou body, the roof of the Elaion granite is exposed as a flat lying mylonite zone overlain by a highly deformed, stretched cover of Rhodope marble, in places as disrupted boudins, recalling aspects of Cordilleran metamorphic core complexes.

The east contact, in contrast, is apparently devoid of shearing and has a prominent hornfelsed aureole. The granite there has a variable pre-full-crystallisation fabric.

Hornfelses and granite hornblende compositions are consistent with emplacement at a pressure of 2-3Kb.

The emplacement of the body has occurred during WSW directed extension probably between WSW-ENE bounding strike-slip faults. One of these faults later served as the bounding fault for the Serres Basin. The generation of the granite may in part be related to extensional melting of subduction modified lithosphere. Initial Sr87/86 ratios for gabbro, enclaves and granites are all closely grouped between 0.705229 and 0.707916, with enclaves close to host granite values. If two separate sources are involved, very efficient mixing is implied. Alternatively a basic parental magma from a modified lithospheric mantle source,