deformation which developed a mylonite foliation in the metasediments and the interlayering granodioritic gneisses in the same way. Diopside-bearing calc-silicate felses occur at the marble-orthogneiss lithologic boundaries.

U-Pb-investigations on zircons of a strongly foliated granodioritic orthogneiss reveal a late Variscan magmatic event. In the concordia diagram the U-Pb-data points of clear prismatic zircons form a regression line with an upper intercept age of 299±1 Ma. The negative lower intercept probably due to a disturbance of the U-Pb-systems can't be explained until now.

Cathodoluminiscece patterns of the zircon grains show zoned internal structures caused by incorporated trace elements and/or lattice defects during crystal growth. An analyzed fraction of turbid zircon grains contains a high abundance of recristallyzed zones in the often cataclastic distressed crystals. If the osberved lead-loss of this fraction is connected with an episodic -metamorphic- event has to be proved.

The magmatic event, accompanied by the emplacement of pegmatitic veins is also recorded by Rb-Sr-data of a metapegmatite. The two different white mica generations of the foliated granite-pegmatite could be distinguished into a pegmatitic postcristalline deformed generation, and a syndeformatively cristallized generation. Seperately analyzed, the pegmatitic generation yielded a Rb-Sr mineral age of 244±9 Ma, the syntectonic generation, grown during the alpidic overprint, a mineral age of 26.0±0.3 Ma.

Rb-Sr-data obtained on micas revealed Early Miocene (white micas) and Middle Miocene (biotites) mineral ages, which are interpreted as cooling ages. The influence of shearing processes on isotope homogenization during the alpidic overprint will be studied using the thin slab method on rocks consisting of lithological different layers produced by tectonic stacking.

THE RECENT DRAINAGE NETWORK OF THASOS AND ITS TECTONIC AND MORPHOLOGICAL BACKGROUND

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The hydrography of the island of Thasos at the southeastern edge of the Rila-Rhodope-Massif is marked by a distinct asymmetry of the drainage network. The main reason for that is an uplift-axes at the northeastern part of the island, that separates the contrasting drainage patterns.

Because of the fault-line-scarp, running parallel to the uplift axes and the vertical tectonic displacement (graben) of the northeastern areas, together with a high relief energy (Ypsarion, 1.204 m) dendritic patterns have been developed. A similar situation occurs in the NW-part of the island.

Contrasting the hydrographical situations in the NW and NE within the southwestern part of Thasos, long and rectangular catchment areas exist and dendritic patterns are restricted to the valley heads. Because of special morphological features, i.e. valley pediments and pleistocene talus cones, the tributaries are developed rather paraller and enter the main river almost at right angles.

According to the influence of faults to the river and valley development there is evidence that the paleo valleys have developed without tectonic control. During uplift along alpidic fault lines river capturing is obvious.

Whereas alpidic faults are responsible for the courses of some main rivers, the neotectonic faults striking N-S and W-E only control same courses of tributaries.

THE PHYLLIT - QUARZIT UNIT (PQ): STRUCTURAL EVOLUTION AND FLUID INCLUSION TRAILS - CONSTRAINTS ON THE TECTONIC HISTORY

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Crete is situated at the margin of the Aegean plate in the centre of the Hellenic fore-arc. The Hellenic arc is a convergent zone midway between mainland Greece and Turkey associated with northward subduction of the African plate under the Aegean plate. The Hellanide isopic zones form a nappe pile on the Cretan island and terminate at a major east-west orientated fracture zone which is suggested to be a transcurrent fault (Hall et. al. 1984). The island of Crete trends parallel to the arc and its morphology is controlled by recent regional extension.

The PQ Unit - part of the cretan nappe pile - suffered a HP-LT metamorphism with maximum P-T conditions increasing from E-Crete (8kbar, 250°C) to W-Crete (10 kbar, 450°C) (Theye 1988). The HP-LT metamorphism was initiated by two different phases of compression which occurred between Palaeocene and early Miocene (i.e. Hall et al. 1984). These two compression phases are inferred from the structural evolution of the PQ.

The first phase of copression took place during the Paleocene/Eocene (D1, D2). At that time the continental margin experienced E-W compression, and detachment and stacking of the Cretan nappe pile occurred. The resulting structural elements in the