

## **PALAEOGENE AND NEOGENE EXTENSION PROCESSES AND STRUCTURES IN THE CENTRAL PARTS OF THE BALKAN PENINSULA**

ZAGORCHEV, I. S., Geological Institute, 11The Late Alpine tectonic history of the

Balkan Peninsula is characterized by stratigraphically proven major compression episodes in Mid Cretaceous, Late Cretaceous, late Middle Eocene, and early Early Miocene times. Extensional collapse-related igneous activity took place in Late Cretaceous (crust-derived granitoids), and Bartonian - Late Oligocene (volcanics and granitoids) time, with occasional volcanic outbursts in Neogene time. Extensional graben basins have been formed in Palaeocene - Middle Eocene, Late Eocene - Early Oligocene, Late Oligocene - earliest Miocene, and Middle (or Late) Miocene to Pliocene time. Pebble provenance from adjacent horsts excludes large horizontal tectonic displacements of the grabens. No Alpine regional metamorphism younger than Mid Cretaceous has been proven. Unroofing of Palaeogene granitoids occurred in Pontian time after increased erosion of their mantle in the most uplifted neotectonic blocks during prolonged isostatic uplift combined with rifting since late Oligocene to Maeotian time included. The erosion rate (roughly identical with the uplift rate) varied between 0.4 - 0.6 mm per year, and represented only 15 to 40% of the modern uplift rate. On the basis of the geological evidence cited, previously suggested large-scale detachment faulting and exhumation of Alpine metamorphic core complexes should be excluded. The possible graben-forming mechanisms include rifting, pull-apart, normal faulting due to post-thrusting relaxation, and vertical isostasy-related movements with multi-stage collapse of the most uplifted dome and swell structures.<sup>13</sup> Sofia, Bulgaria.