

MORPHOLOGICAL FEATURES, AGES AND NEOTECTONIC SIGNIFICANCE OF PAMUKKALE TRAVERTINES

Erhan ALTUNEL***

ABSTRACT.- The Pamukkale travertines in the northern margin of the Denizli basin can be classified into five categories based on their morphology. These are: (1) terraced-mound travertines, (2) fissure-ridge travertines, (3) range-front travertines, (4) self-built channel travertines, and (5) eroded-sheet travertines. Three of these classes, range-front travertines, self-built channel travertines and fissure-ridge travertines are of special tectonic significance because they contain syndepositional and postdepositional tectonic structures. Uranyum series dating method has been applied to the Pamukkale travertines and showed that travertine deposition has continued for at least the last 400 000 in different localities. Extensional fissures, that supply water to the travertines, have been dilating at average rates between 0.02 and 0.1 mm/yr, and propagating laterally at about 20 mm/yr. The time averaged rates of extension of the plateau as a whole having been between 0.23 and 0.6 mm/yr during the last 200 000 years.