Geophysical Research Abstracts
Vol. 12, EGU2010-10399, 2010
EGU General Assembly 2010

Late Cretaceous northward subduction, post-Eocene northward obduction: Eastern Pontides, Turkey

Bora Rojay (1) and Erman Özsayın (2)
(1) metu, geology, ankara, Turkey (brojay@metu.edu.tr, 90 312 2105750), (2) hu, geology, ankara, Turkey

The Pontides displays strong bio- and litho-stratigraphic correlations from Bilecik (NW Anatolia) to Ankara–Amasya (northern Central Anatolia) to Berdiga-Gümüşhane (central Eastern Pontides) in Anatolia (Turkey) for the period of Liassic until the end of Cenomanian. Within this tectonic frame, the Eastern Pontides is defined by the existence of huge Cretaceous-Paleogene magmatic arc (Pontide magmatic arc) along the axial line and an accretionary wedge to the south (İzmir-Ankara-Erzincan Suture Belt) of the terrain.
A typical Atlantic type margin evolution operated during the Liassic until the end of Cenomanian on top of pre-Permian granites and pre-Triassic metamorphics of arc origin basin fill. Following sudden deepening, the deposition of the deep-sea pelagics on top of the platform carbonates took place during Aptian-Cenomanian. Progressive closure of the Northern Tethys resulted in the development of an accretionary wedge (Permian-Triassic crustal slices, Cretaceous ophiolitic mélanges and ophiolites and Jurassic-Cretaceous platform carbonate tectonic slivers) with Upper Cretaceous-Paleogene magmatic-volcanic arc and arc related basins to the north of the accretionary wedge since Late Cretaceous until end of Middle Eocene. As a result of the elevated accretionary wedge in south and evolved volcanic arc in the north, platform totally disrupted and turned into a fore- and back-arc deep-sea depositional setting during Turonian–Conacian until the end of Paleocene. Following the Eocene, marine conditions retreated during Oligo-Miocene and Miocene collision took place where Pliocene marked the end of the collision.
As a result of the Late Cretaceous northward subduction, the accretionary wedge and tectonic slivers were overthrusted south, onto the Tauride block. However, the back-thrusting in north during the post-Middle Eocene possibly marked the end of the subduction.

Key words: Jurassic-Cretaceous, post-Middle Eocene, deep-sea pelagics, back-thrusting, Pontides.