

STRATIGRAPHICAL EVIDENCES AND NEW PALEONTOLOGICAL DATA FOR THE LATE CRETACEOUS-EARLY TERTIARY POST COLLISIONAL TECTONISM ALONG THE INTRA-PONTIDE SUTURE ZONE, NORTHWESTERN TURKEY

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Here we present new stratigraphical and paleontological data on post-collisional tectonism along the Intra-Pontide suture zone. Our paleontological data come from planktonic and benthic foraminifera, which give a high resolution on the events during Late Cretaceous-Early Eocene. The study area is located south of the Sapanca Lake between the Istanbul and Sakarya zones in northwest Turkey. In this area, the Upper Cretaceous and Lower Eocene sediments unconformably overlie the older metamorphic units and mélanges of the Intra-Pontide suture zone. The sedimentary sequence can be divided into four sub-units and most of these comprise either debris flows or olistostromal units. The lowest sub-unit is a shallow marine thick sandstone-conglomerate-limestone unit with some debris flow intercalations and is of Campanian-Maastrichtian age (with *Orbitoides sp.*, *Siderolites sp.*). This is overlain by a debris flow unit with clasts of metabasite, chert, quartzite, phyllite, amphibolite, neritic and pelagic limestone. Pelagic limestone clasts include Late Maastrichtian and Paleocene planktonic foraminifera and suggest a Late Paleocene age for the unit. The debris flow passes up into a carbonate debris flow unit (third unit), which has a Late Paleocene-Earliest Eocene pelagic marl matrix and exotic blocks of Upper Cretaceous calcarenite and neritic limestone. The carbonate debris flows pass laterally and vertically to the fourth unit which is a Lower Eocene flysch sequence with olistostromes. The flysch has a rich and diverse assemblage of orthophragmines and nummulitids of Ypresian age. In the olistostromal part of the flysch, olistoliths of marble, pelagic limestone, and rare granite, amphibolite, ophiolitic blocks are observed. In the pelagic limestone olistoliths Cenomanian-Late Maastrichtian planktonic foraminifera assemblages are defined.

These data together show that between Maastrichtian and Early Eocene there was major uplift south of Sapanca Lake in northwest Turkey. New apatite fission track data from metamorphic rocks cropping out at south of Sapanca Lake also confirms that Early Eocene uplift (Zattin et al, 2010). Previous studies show that the collision of the Intra-Pontide Ocean was at Early Cretaceous (Akbayram et al, 2009) and the first regional transgression also show that the Intra-Pontide Ocean must be closed before Campanian (Özgörüş et al, 2009). So the closure of the Intra-Pontide Ocean can not be the responsible mechanism for this tectonism. The Late Cretaceous-Paleocene collision of Pontides and Taurides in the south (Okay and Tüysüz, 1999) generated a major relief, which formed the source for the debris flows and olistostromes in the Sapanca region.

Key Words: Late Cretaceous, Early Tertiary, Post-collisional tectonics, Intra-Pontide suture zone.

References

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