



TECTONIC EVOLUTION OF THE BOLKAR FORELAND BASIN IN THE TAURIDE CARBONATE PLATFORM (MERSIN, S TURKEY)

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ABSTRACT

Foreland basin is used as in its general sense as the basin adjacent to a fold-and-thrust belt (Dickinson,1974). The aim of this research is review which developed within the Tauride Carbonate Platform (Parlak and Robertson, 2004) during Late Cretaceous. In the south of Bolkar Mountains, four main tectono-stratigraphic units are exposed in general upward structural order, as follows. (1) Cehennemdere formation consists of platform carbonates (Liassic-Early Senonian), (2) foreland basin sediments, Kavaklipinar Limestone (Upper Campanian) and Yavca Formation (Upper Campanian- Maastrichtian), (3) Findikpinari Mélange (Maastrichtian- Paleocene?), Late Cenomanian tectonic mélange and Maastrichtian-Palaeocene(?) olistostromal mélange, (4) Mersin Ophiolite (Late Cretaceous). In the research area, the contact situated between Liassic-Early Senonian Cehennemdere Formation and the Upper Campanian Kavaklipinar Limestone is mostly caused by syn-sedimentary normal fault. These faults were formed by the drowning and flexural bending of the platform in the Late Cretaceous when ophiolitic rocks emplaced on Mesozoic platform carbonates. There also has been an asymmetric anticline lying on the ENE-WSW axis in the platform carbonates. This anticlinal is believed to be a height limiting the edge of basin called forebulge. In the front lines of this height, normal faults the basin floor to collapse. The Upper Cretaceous units are interpreted as representing a foreland basin created by flexural loading and subsidence of the Mesozoic platform in the Campanian, prior to final overthrusting and emplacement of the ophiolitic nappes. The southward overthrusts formed by closure of a small oceanic basin located between the Tauride Carbonate Platform to the south and the Nigde-Kirsehir Massif to the north (the Inner Tauride). Some of these thrusts may be a result of basement fault reactivation buried normal faults of the rifted margin of the Inner Tauride Ocean. Loading by accreted terranes (ophiolitic nappes) on the continental slope of a rifted continental margin causes the flexural depression of the foreland and the uplift of a low relief peripheral bulge. The slope of the margin protuberance facing the ocean has steepened with the effect of the flexural bending and a intensive for extensional faulting, slump and mass sliding. The first sediments evolved in this basin are the slump formed Upper Campanian pelagic limestones (Kavaklipinar Limestone) which have been formed by the carbonate platform sedimentation and evolved on the normal faulted surface. Late Campanian-Maastrichtian siliciclastic sediments, calciturbidites, slope scree, olistoliths (Yavca Formation), carbonate platform in the Late Campanian-Maastrichtian and the brecciated limestones carried from the elevated ophiolitic slices overlain the pelagic limestones as a result of the flexural subsidence of the basin basement. These Late Cretaceous sediments form the foreland basin sediments related to the thrusting and ophiolite emplacement onto a passive continental margin.

Keywords: Bolkar Foreland Basin, Tectonic Evolution, Tauride Carbonate Platform, Late Cretaceous.