



## **Some Major Geological Problems in the Biga Peninsula: The Çetmi Melange**

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It is known that, different tectonic units meet in Biga Peninsula, Northwestern Anatolia. For this reason, the geology of the Biga Peninsula plays an important role on the understanding of the geology of Turkey. The Biga Peninsula is not only one of the most studied regions of Turkey by native and foreigner geologist but also including many geological questions. One of them is the character of unit having a wide age range from Lower Cretaceous to Eocene, which is previously thought to develop as a subduction zone melange of Intra-Pontide ocean. The unit, called as the Çetmi melange, the Ballıkaya formation, the Balıkkaya formation, the Şarköy complex, and the Karagöl complex, is named under various names on Çetmi, Karabiga, Biga, Şarköy, regions of the Peninsula and evaluated the same geotechnical implication. Lower Cretaceous – Paleocene unit as a whole is manifested to have a feature of accretionary prism. The unit as a whole, from Lower Cretaceous to Eocene in age, is evaluated as a wide accretionary prism.

Field studies carried out on this unit which is cropping out various regions show that some different outcrops have distinct sequence and stratigraphical features from each other. Thus, the units occurring in each outcrop are not evaluated as continuity of each other. Indeed, Jurassic clastics rest unconformably on the metamorphic basement in Gönen, and the sequence passing into Mesozoic carbonate platform and changes upward into a blocky chaotic complex. This chaotic complex defined as the Çetmi melange is of Upper Cretaceous. Moreover, an Upper Cretaceous – Paleocene blocky unit around Biga town, is also evaluated as Çetmi melange, crops out. Lower Cretaceous blocky unit consisting of blocks of limestone, chert, and sandstone in the sedimentary matrix (sandstone-shale) around type locality of the Çetmi village is tectonically rest on the Kazdağ Massif. The same unit around the Karabiga town overlies with an unconformity on the metamorphic basement. In the Şarköy outcrops, serpentinite and blueschist blocks are occurred in a Paleocene – Eocene sedimentary matrix composed mainly of sandstone, marl, and conglomerate.