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Geology, Petrography and Tectonic Setting of High-Pressure Metabasite (eclogite/blueschist) slices from the Biga Peninsula, NW Anatolia

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High-pressure metamorphic rocks in Alpine orogenic system are widely common and very important for representing former subduction zones. Two metabasite slices occur as tectonic slices within the both Çamlıca metamorphics and Çetmi melange. The Çamlıca metamorphics are mainly composed of the Andıktaşı formation consisting of metalava, metatuff and metapelite, the Dedetepe formation with garnet-mica schist, albite-epidote-chlorite schist, calcschist and marble, and the Salihler formation consisting of phyllite-marble intercalation, from bottom to top. The first metabasite slice crops out in the schist-marble intercalation of the Dedetepe formation. A 2 km long and 500 m thick slice is surrounded by quartz-mica schist. The general mineral assemblage of eclogite/blueschist predominantly consists of omphacite + garnet + epidote + quartz + phengite + glaucophane + sphene. The Çetmi mélange is comprised of blocks of pyroclastic rocks, mafic lava, limestone, radiolarite in the greywacke-shale matrix. The second metabasite slice and associated with garnet-mica schist. The mineral assemblage of eclogites is composed of garnet + omphacite + epidote + phengite + quartz $\pm$ rutile. On the other hand, high-pressure blueschist widely contains garnet + glaucophane + epidote + chlorite + actinolite $\pm$ quartz $\pm$ rutile. Metamorphic history of eclogite/blueschist slice can be regarded as Cretaceous HP-LT metamorphism (M1) and Oligo-Miocene greenschist facies metamorphism (M2). The eclogite/blueschist mineral assemblage is changeably overprinted by later greenschist metamorphism with development of tremolite/actinolite, chlorite, and albite. Later overprint metamorphism may be out of the access of a fluid phase to high-pressure mineral assemblage during exhumation. In conclusion, we suggest that metabasite slices occur as a tectonic slice within the both Çamlıca metamorphics and Çetmi melange located in the Biga Peninsula along the Alpine-Himalayan orogenic belt and typically represent low-temperature eclogites defining subduction zone.