

Significance of oceanic assemblages in the Central Pontides, northern Turkey

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The Central Pontides of northern Turkey are bounded by the Izmir–Ankara–Erzincan Suture Zone (IAESZ) in the south, separate them from the Anatolide–Tauride Platform, and the Black Sea in the north. Oceanic assemblages are found tectonically together with metamorphic continental fragments. These are related to oceanic crust material, subduction–accretion complexes and extrusive–intrusive magmatic arc rocks. In the pre–Late Jurassic, block-in-matrix type mélanges with phyllite, schist and metabasite were metamorphosed to greenschist–blueschist facies conditions. Eclogite and minor marble and metachert are products of northward subduction of the Intra–Pontide Ocean (IPO). Circa 150 Ma metabasite dykes with MORB characteristics crosscut serpentinites, and have Nb (1.5–2ppm), Hf (1.9–3.4ppm), Th (0.3–0.6ppm) and Y (27.1–39.8ppm). Lherzolite–type (L–type) ophiolites contain plagioclase lherzolite, harzburgite, dunite and pyroxenite. Oceanic mafic crustal rocks are composed of pillow–massive–breccia basalts, diabase dyke swarms, massive gabbros and a limited extent of mafic cumulates representing a thin crustal section (~1500m). These are overlain by epi–ophiolitic volcanic units of Late Triassic–Liassic age. The SiO₂ contents (46.97–68.84 wt.%) and alkali (Na₂O+K₂O) values (3–6 wt%) of the volcanic units show tholeiitic and calc-alkaline affinities. Their Ti/V ratios (12.08–32.12) indicate IAT- and MORB-like compositions. The Dogger granitoids with metaluminous and peraluminous characteristics cut ophiolitic rocks representing continental arc development in the Central Pontides. We suggest that L-type ophiolites representing the IPO formed through continental (margin) rifting in the Pontides as a result of northward subduction of northern Tethyan oceanic lithosphere and Middle Jurassic magmatic arc rocks related with closing of a marginal oceanic basin.