Mineralogy, thermobarometry and tectonic setting interpretation of gneisses from western Soltan Abad (NE Sabzevar)

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(Received: 1/3/2010, in revised form: 16/8/2010)

Abstract: The study area is situated in the west of Soltan Abad prom NE Sabzevar (Razavi Khorasan province). There is an exposure of metamorphic complex that contains greenschist, blueschist, amphibolite and eclogite (?) facieses rocks. Gneissic body is located in the middle part of this complex (Koh-e-Chili). Protolith and foliation intensity are variable in this body. Field evidences, whole rock geochemistry, geochronological data and nearly the same metamorphic pressure conditions of gneisses and blue schists (Gneiss: P = 10.9 Kb and Blueschist: P = 11-14 Kb) indicate that protolith of the gneisses have been differentiated series of oceanic crust and have experienced subduction zone metamorphism along with mafic series of Sabzevar oceanic basin (blueschists) as a consequence of north-ward movement of central Iranian microcontinent in the Upper Eocene.

Keywords: thermobarometry; gneiss; blueschist; Soltan Abad; Sabzevar.

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