

BLUE JADEITITE FROM SHOGAN, SE IRAN

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In south-eastern Iran the Sanandjan – Sirjan metamorphic belt is divided in an amphibolite facies northern part with Palaeozoic crustal rocks and a southern belt with high-pressure metamorphic coloured mélanges. The separation of the two metamorphic belts is made up by an andesitic volcanic arc sequence, which did not undergo metamorphism and only shows minor alteration effects. The southern belt with high-pressure relics is juxtaposed to a sequence of non metamorphic ultramafic to mafic rocks. ⁴⁰K-⁴⁰Ar whole rock ages of gabbros and diabases range from 130 to 140 Ma (GHASEMI et al., 2002).

Within the metamorphic belt two typical associations can be identified. One is composed of series of amphibolites, micaschists, marbles and greenschists, with a metamorphic amphibole age of 202 Ma (GHASEMI et al., 2002). All these rocks underwent a late HP-LT overprint. Green amphiboles often show minute glaucophane rims. The other rock association comprises a coloured mélange composed of glaucophanites, marbles and garnet micaschists in a serpentinitic matrix. Micaschists just north of the Sikhoran ophiolites show metamorphic ages around 80.7 ± 1.5 Ma (GHASEMI et al., 2002). The blueschists show glaucophane, albite, phengite, sometimes lawsonite and rutile. In rare cases omphacitic clinopyroxene was found. Within this metamorphic belt large ultramafic bodies with chromite lenses are wide spread. These mainly dunitic ultramafics contain talc, enstatite, forsterite and antigorite. The associated chromites are rich in kammerierite. Along the contacts of the ultramafics to the blueschists, magnesite lenses developed. In one of these magnesite lenses suspicious bluish veins occur. These veins are composed of lavender coloured pure jadeite. Additional phases are winchitic amphibole, lawsonite and Ba-bearing K-feldspar. The jadeitites are relatively rich in Ni and Li. Estimates of P-T conditions indicate pressures significantly higher than published for similar metasomatic rocks with blue jade from Itoigawa-Ohmi in Japan (MORISHITA, 2005).

References

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