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Dumortierite from Karikari peninsula: a first record in New Zealand

DUMORTIERITE has been found for the first time in New Zealand in a tourmalinized porphyritic andesite dyke at Whangatupere Bay, Karikari Peninsula, Northland. The dyke is one of a swarm of andesitic dykes cutting a small mid-Tertiary diorite/grandiorite pluton; both the plutonics and the dyke rock are sheared and tourmalinized at the dumortierite locality. The pneumatolithic environment of the Karikari dumortierite seems similar to that described for an Iranian occurrence by Sabzehei (1971).

Dumortierite is a very minor component (less than 0·1 modal %) of the rock in which it occurs but is immediately noticeable in thin-section because of its unusual red and blue pleochroic colours; it occurs as small ($<$ 0·1 mm) slender prisms intergrown with epidote, or in contact with both epidote and tourmaline. Its rarity, small size, and intimate association with epidote and tourmaline made it impossible to separate sufficient material for X-ray identification. Electron-probe microanalysis of dumortierite in polished thin-section using a natural analysed tourmaline as a standard gave: SiO_2 = 32·0, Al_2O_3 = 56·1, total Fe as Fe_2O_3 = 3·7, B_2O_3 = 5·7 %.

Optical properties of the Karikari dumortierite are: α 1·675±0·005, cobalt-blue; β red; γ 1·700±0·005, orange-red; $2V_\alpha = 35° \pm 5°$; prisms have straight extinction and negative elongation.

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