SHORT COMMUNICATIONS

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Space group of a low tridymite, Tardree Mountain, Northern Ireland

A. VON LASAULX (1879) discovered and described tridymite from the Tardree Mountain where it occurred as thin hexagonal plates in the cavities of the rhyolite locally known as the Tardree or Sandy Brae rhyolite. Recently Dr Macpherson of the Royal Scottish Museum sought confirmation of Lasaulx's find (Macpherson, 1983) and Mr Rowan of Lisburn, Co. Antrim, collected some of the tridymite-bearing rhyolite from the above locality at the author's request.

An X-ray investigation of this material has been undertaken, in which a thin hexagonal plate, 0.5 mm across, was mounted on the Weissenberg goniometer with one of the extinction directions parallel to the rotation axis of the latter. The repeat distance along the rotation axis was measured from an oscillation photograph as 17.19 Å; since this is the *b* axis of the low tridymite it follows from the description of Lasaulx that the optic plane must be parallel to (100) and the morphology must comprise a basal pinacoid, a brachypinacoid and a prism. The lengths of *a* and *c* axes were measured from the zero-level Weissenberg as 9.92 and 40.91 Å respectively, therefore the prism must be (110). From the zero and first-level photographs it is obvious that the space group must be *Cmmm*, *Cmm*2, or *C*222. Sato's (1964) space group for a similar tridymite, $C222_1$, can not be justified for the Tardree tridymite because the 900 reflection is definitely present.

Frondel (1962) lists four polytypes of low tridymite with *c* dimensions of 8.18, 16.3, 40.78, and 81.57 Å, corresponding respectively to 2-layer, 4-layer, 10-layer, and 20-layer polytypes; thus the Tardree tridymite corresponds with the third polytype. For the 20-layer polytype Lukesh and Buerger (1942) found the space group to be *Fmmm*, *Fmm*2, or *F*222 but for the other two polytypes the space group is either not known or is uncertain. The space group of the middle tridymite is not known but that of the high tridymite is *C*6/*mmc* (Frondel, 1962).

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New data on gobbinsite and garronite

GOBBINSITE was recently described as tetragonal (Nawaz and Malone, 1982). The material used showed intergrowths akin to twinning which was not visible optically and was assumed to be on (101). This assumption was made to explain the doubling of the diffraction spots on the rotation and Weissenberg films. Recently, however, a vug with untwinned gobbinsite has been discovered. An