

On an unnamed Mg-Mn-Sb oxyborate from the blatterite locality of the Kitteln mine, Nordmark, Filipstad, Värmland, Sweden

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Introduction

Blatterite was described as a new mineral species from the Kitteln mine (Kittelgruvan) at Nordmark, north of Filipstad, Sweden, by Raade et al. (1988). It is an orthorhombic Mg-Mn-Sb oxyborate, differing from related minerals of the orthopinakiolite group by its large unit cell with $a \approx 37.7 \text{ \AA}$. It was shown by an HRTEM investigation (Olsen & Raade 1987, Raade et al. 1988) that blatterite has the structure type $8t8t$ where the numbers equal the number of octahedral layers between a twin plane t .

Cooper & Hawthorne (1998) solved and refined the blatterite structure in space group $Pnmm$ to an R index of 0.043 and established the refined formula $\text{Sb}^{5+}_3(\text{Mn}^{3+}, \text{Fe}^{3+})_9(\text{Mn}^{2+}, \text{Mg})_{35}(\text{BO}_3)_{16}\text{O}_{32}$, based on material from the Långban deposit.

The blatterite-bearing material in the Kitteln mine has evidently been dumped there from a nearby mine (Fig. 1). It was suggested by Raade et al. (1988) that the source might have been the Brattfors mine (Brattforsgruvan). However, the closely situated Moss mine (Mossgruvan) is perhaps more likely, from which Bovin et al. (1986, 1996) have described a blatterite-like mineral (see below).



Figure 1. The Kitteln mine.
Photo by G. Raade 19. June 2010