

## (5) EIGHTEENTH LIST OF NEW MINERAL NAMES.

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*(Titles and abstracts submitted by G. F. Claringbull, General Secretary).*

## NEW MINERAL NAMES

**Pennaite, Giannetite**

DJALMA GUIMARÃES, the zirconium ore deposits of the Pocos de Caldas plateau, Brazil, and zirconium geochemistry. *Estado Minas Gerais, Inst. Tecnologia Industrial, Bol. 6, 1-79 (1948)* (in English 43-79).

Pennaite is described as a yellow to light brown, prismatic to acicular mineral. It is biaxial, positive, with  $\beta=1.70$ ,  $\gamma-\alpha=0.044$ ,  $2V\ 25^\circ$ ,  $c\wedge Y=13^\circ$ . It is pleochroic with *X* dark yellow (p. 57), soiled yellow (p. 61), *Y* grayish-yellow, *Z* bright yellow (p. 57), yellowish-brown (p. 61). It shows polysynthetic twinning and may be triclinic. "The presence of Zr, Ti, Ca, Fe and Mn was ascertained. Pennaite could not be freed for testing except in minute amounts and for approximate figures only. Constituent elements gave the following rough averages: SiO<sub>2</sub> 40-45, TiO<sub>2</sub> 8-10, ZrO<sub>2</sub> 4-6, FeO 10-15, MnO 3-4, CaO 10-15, Na<sub>2</sub>O 10-12, Cl 2-3%." Soluble in HCl. Spectrographic traces of Ta are present.

Giannetite occurs in colorless to pale yellow prismatic crystals. It is apparently triclinic and shows perfect cleavage on (100), indistinct and irregular cleavage on (010) and (001). The crystals are twinned, mostly along the (100) plane. It is optically biaxial, positive, with  $\alpha=1.663$ ,  $\beta=1.664$ ,  $\gamma=1.675$ , all  $\pm 0.002$ ,  $2V\ 30^\circ$ ,  $c\wedge Y=22^\circ$ . Spectrographic study of a few grains showed the presence of Si, Ti, Zr, Mn, Fe, Ca, and Na, with traces of Ta and rare earths absent. Since the mineral could not be separated, analyses were made of the material dissolved in acid from two rocks. These yielded totals of 4.17 and 3.68%, respectively, from which were subtracted 1.72 and 1.59% of nepheline, apatite, magnetite, and zeolite, whose amount was known from the mode of the rock. By recalculation to 100%, this gives for the composition of giannetite: SiO<sub>2</sub> 40.0, 36.3; ZrO<sub>2</sub> 8.35, 8.4; TiO<sub>2</sub> 8.0, 9.0; Fe<sub>2</sub>O<sub>3</sub> 2.45, 2.5; MnO 9.7, 9.1; CaO 22.3, 14.95; Na<sub>2</sub>O 5.6, 17.0; Cl 3.4, 3.1%.

The two minerals occur in alkalic rocks (foyaïtes, phonolites, tinguaites, lujavrites). They are associated with eudialyte, catapleite, aegirite, fluorite, sanidine, nepheline, and sodic amphibole. Both minerals are apparently hydrothermal alteration products of aegirite.

**NAMES:** The minerals are named for José Moreira do Santos Penna, chief of the Instituto de Tecnologia Industrial of Minas Gerais, and for Dr. Americo René Gianneti, civil and mining engineer, Secretary of Agriculture, Industry and Commerce of Minas Gerais.

**DISCUSSION:** Further study, especially chemical analyses and x-ray work, is needed. The minerals might be related to hiortdahlite.

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