

**Crystal Data:** Triclinic. *Point Group:*  $\bar{1}$ . As bladed crystals, elongated along [010], to 6 mm, or as fibrous aggregates.

**Physical Properties:** *Cleavage:* Distinct on {001}. *Hardness* = n.d. *D(meas.)* = 2.32-2.33 *D(calc.)* = 2.325

**Optical Properties:** Transparent to translucent. *Color:* White; colorless in thin section. *Luster:* Vitreous.

*Optical Class:* Biaxial (-). *Orientation:*  $X \perp \{001\}$  cleavage;  $Y \wedge b = 35^\circ\text{-}40^\circ$ .  
 $\alpha = 1.548\text{-}1.552$   $\beta = 1.562\text{-}1.564$   $\gamma = 1.570\text{-}1.571$   $2V(\text{meas.}) = 74^\circ$

**Cell Data:** *Space Group:*  $P\bar{1}$ .  $a = 10.576(2)$   $b = 7.265(2)$   $c = 10.931(3)$   $\alpha = 101.30(1)^\circ$   
 $\beta = 96.98(1)^\circ$   $\gamma = 109.65(1)^\circ$   $Z = 1$

**X-ray Powder Pattern:** Crestmore, California, USA.  
 10.5 (vvs), 2.92 (vs), 3.04 (s), 2.83 (s), 2.66 (s), 6.46 (ms), 3.47 (ms)

| <b>Chemistry:</b>              | (1)  | (2)   | (1)                               | (2)          |
|--------------------------------|------|-------|-----------------------------------|--------------|
| SiO <sub>2</sub>               | 34.2 | 33.20 | Na <sub>2</sub> O                 | 0.00         |
| TiO <sub>2</sub>               |      | 0.02  | K <sub>2</sub> O                  | 0.01         |
| Al <sub>2</sub> O <sub>3</sub> |      | 0.09  | H <sub>2</sub> O <sup>+</sup>     | 18.53        |
| FeO                            |      | 0.01  | H <sub>2</sub> O <sup>-</sup>     | 1.69         |
| MnO                            |      | 0.02  | H <sub>2</sub> O                  | 19.2         |
| MgO                            |      | 0.03  | <u>P<sub>2</sub>O<sub>5</sub></u> | <u>0.04</u>  |
| CaO                            | 46.6 | 46.85 | Total                             | 100.0 100.49 |

(1) Crestmore, California, USA; by electron microprobe; H<sub>2</sub>O by TGA; corresponds to Ca<sub>8.76</sub>H<sub>2.00</sub>Si<sub>6.00</sub>O<sub>17.6</sub>(OH)<sub>8.00</sub>•6.24H<sub>2</sub>O. (2) Fuka, Japan; by electron microprobe, H<sub>2</sub>O by gravimetry; corresponds to Ca<sub>9.00</sub>H<sub>2.00</sub>(Si<sub>5.95</sub>Al<sub>0.02</sub>)<sub>Σ=5.97</sub>O<sub>17.93</sub>(OH)<sub>8.00</sub>•6.07H<sub>2</sub>O. (3) Structure analysis and IR and Raman spectroscopy suggest the revised formula Ca<sub>9</sub>Si<sub>6</sub>O<sub>18</sub>(OH)<sub>6</sub>•8H<sub>2</sub>O.

**Occurrence:** A late-stage mineral, partially filling open spaces and in veins in fractured contact metamorphic rocks.

**Association:** Tobermorite, scawtite, calcite (Crestmore, California, USA); afwillite, oyelite, spurrite (Fuka, Japan).

**Distribution:** From Crestmore, Riverside Co., California, USA. At Campomorto, Montalto di Castro, Lazio, Italy. In Germany, from the Bellerberg volcano, two km north of Mayen, Eifel district, and fine crystals from the Zeilberg, near Maroldsweisach, Bavaria. In the Hatrurim Formation, Israel. In the Wessels mine, near Kuruman, Cape Province, South Africa. In Japan, from Fuka, near Bicchu, Okayama Prefecture.

**Name:** For Colonel Clarence M. Jenni (1896-1974?), Director of the Geological Museum, University of Missouri, Rollo, Missouri, USA, the mineral's discoverer.

**Type Material:** National Museum of Natural History, Washington, D.C., USA, 119007.

**References:** (1) Carpenter, A.B., R.A. Chalmers, J.A. Gard, K. Speakman, and H.F.W. Taylor (1966) Jennite, a new mineral. *Amer. Mineral.*, 51, 56-74. (2) Gard, J.A., H.F.W. Taylor, G. Cliff, and G.W. Lorimer (1977) A reexamination of jennite. *Amer. Mineral.*, 62, 365-368. (3) Kusachi, I., C. Henmi, and K. Henmi (1989) Afwillite and jennite from Fuka, Okayama Province, Japan. *Mineral. J. (Japan)*, 14, 279-292. (4) Bonaccorsi, E., S. Merlino, and H.F.W. Taylor (2004) The crystal structure of jennite, Ca<sub>9</sub>Si<sub>6</sub>O<sub>18</sub>(OH)<sub>6</sub>•8H<sub>2</sub>O. *Cement Concrete Res.* 34, 1481-1488. (5) (2005) *Amer. Mineral.*, 90, 772 (abs. ref. 4).