

Crystal Data: Triclinic. *Point Group:* $\bar{1}$. As intergrown masses of fibrous crystals to 100 μ m, elongated along [001] and flattened on (100).

Physical Properties: *Cleavage:* None. *Fracture:* Splintery. *Tenacity:* Flexible. Hardness = ~ 2
D(meas.) = 2.29(3) D(calc.) = 2.41

Optical Properties: Translucent. *Color:* Snow-white. *Streak:* n.d. *Luster:* Silky.
Optical Class: Biaxial (-). $\alpha = 1.530$ $\beta = 1.554$ $\gamma = 1.566$ 2V(meas.) = 70.3(5)°
2V(calc.) = 69.6° *Orientation:* $Z \approx c$.

Cell Data: *Space Group:* $P\bar{1}$. $a = 10.049(2)$ $b = 10.205(2)$ $c = 6.083(1)$ $\alpha = 91.79(3)^\circ$
 $\beta = 99.70(3)^\circ$ $\gamma = 98.02(3)^\circ$ $Z = 2$

X-ray Powder Pattern: Foote mine, Kings Mountain district, North Carolina, USA.
10.047 (100), 7.629 (44), 5.029 (12), 3.023 (12), 4.695 (10), 2.952 (10), 2.579 (10)

| Chemistry: | (1) | (2) |
|--------------------------------|---------|--------|
| CaO | 0.41 | 0.74 |
| MnO | 16.11 | 15.20 |
| FeO | 0.27 | 0.30 |
| Al ₂ O ₃ | 22.43 | 22.17 |
| P ₂ O ₅ | 33.36 | 33.11 |
| F | 0.13 | 1.88 |
| -O = F ₂ | 0.05 | 0.79 |
| H ₂ O | [29.30] | 29.30 |
| Total | 101.96 | 101.91 |

- (1) Foote mine, Kings Mountain district, North Carolina, USA; average of 8 electron microprobe analyses, H₂O calculated; corresponds to Mn_{0.97}Ca_{0.03}Fe_{0.02}Al_{1.87}(PO₄)₂(OH)_{1.62}F_{0.03}(H₂O)_{0.38}•6H₂O.
(2) Hagendorf Süd pegmatite, Hagendorf, Bavaria, Germany; average of 8 electron microprobe analyses, H₂O calculated; corresponds to Mn_{0.92}Ca_{0.06}Fe_{0.02}Al_{1.87}(PO₄)₂(OH)_{1.19}F_{0.42}(H₂O)_{0.39}•6H₂O.

Occurrence: A late-stage hydrothermal mineral in pegmatite as part of a complex suite of Al-rich secondary phosphates.

Association: Zwieselite-triplite, fluorapatite, nordgauite, whiteite-CaMnMn, members of the jahnsite group, morinite, fluellite, Al-bearing strunzite (Hagendorf); spodumene, mangangordonite, variscite, eosphorite, kastningite, paravauxite, beraunite, strengite, strunzite, cacoxenite (Foote mine).

Distribution: From the Hagendorf Süd pegmatite, Hagendorf, Oberpfalz, Bavaria, Germany and the Foote Lithium Company mine, Kings Mountain district, Cleveland County, North Carolina, USA.

Name: Honors German-American mineral collector Gabriella Kay Robertson (b. 1920) of Los Angeles, California, USA. Since the mid-1950s, Kay has been an ardent and sophisticated mineral collector, specializing in German minerals, and a valued resource for professional mineralogists.

Type Material: Museum Victoria, Melbourne, Australia (M53379, M53380, and M48795) and the Natural History Museum of Los Angeles County, Los Angeles, California, USA (65561 and 65562).

References: (1) Mills, S.J., I.E. Grey, A.R. Kampf, W.D. Birch, C.M. Macrae, J.B. Smith, and E. Keck (2016) Kayrobertsonite, MnAl₂(PO₄)₂(OH)₂•6H₂O, a new phosphate mineral related to nordgauite. *Eur. J. Mineral.*, 28(3), 649-654. (2) (2016) *Amer. Mineral.*, 101, 2780-2781 (abs. ref. 1).