Roscherite

Ca(Mn$^{2+},Fe^{2+}$)$_2$Be$_3$(PO$_4$)$_3$(OH)$_3$•2H$_2$O to Ca(Mn$^{2+},Fe^{2+}$)$_3$Be$_2$(PO$_4$)$_3$(OH)$_3$•2H$_2$O

Crystal Data: Monoclinic or triclinic. Point Group: 2/m or T. Crystals, to 2 cm, are short prismatic [001] or flattened on {100} or {010}, with {010}, {110}, {111}, with several other forms; in spherical to botryoidal aggregates and crusts, internally fibrous; powdery massive.

Physical Properties: Cleavage: On {001}, good; on {010}, distinct. Hardness = 4.5
D(meas.) = 2.90–2.97 D(calc.) = 2.77–2.94

Optical Properties: Semitransparent. Color: Greenish gray, olive-green, sage-green, dark brown, reddish brown, orange; yellowish green to brown in transmitted light, may show abnormal interference colors.

Cell Data: Space Group: C2/c with a = 15.88–15.95  b = 11.90–11.95  c = 6.62–6.66 β = 94°42′–94°50′. Z = 4, or Space Group: C1T with a = 15.921(5)  b = 11.965(4)  c = 6.741(1)  α = 91°04′5′  β = 94°21′(5′)  γ = 89°59′.5(5.0′). Z = 4

X-ray Powder Pattern: Greifensteine, Germany; close to zanazziite.
5.95 (10), 9.51 (9), 3.17 (8), 2.788 (6), 4.84 (4), 2.644 (4), 3.08 (2b)

Chemistry:

<table>
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<th>(3)</th>
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<tbody>
<tr>
<td>P$_2$O$_5$</td>
<td>38.01</td>
<td>37.60</td>
<td>34.12</td>
<td>BeO</td>
<td>13.74</td>
<td>12.58</td>
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<td>Fe$_3$O$_4$</td>
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<td>CaO</td>
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<td>FeO</td>
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<td>6.26</td>
<td>30.40</td>
<td>H$_2$O</td>
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<td>11.56</td>
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<td>MnO</td>
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<td>10.04</td>
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<td>Total</td>
<td>[100.00]</td>
<td>99.80</td>
<td>98.33</td>
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</table>

(1) Greifensteine, Germany: BeO originally determined as Al$_2$O$_3$. (2) Sapucaia mine, Brazil.
(3) Gunnislake Clitters mine, England: BeO may include some Al$_2$O$_3$; corresponds to Ca$_{1.20}$(Fe$_{2.64}$Mn$_{0.04}$)$_{\Sigma=2.68}$Be$_{2.51}$(PO$_4$)$_3$(OH)$_3$•2.58H$_2$O.

Occurrence: In cavities in granite or complex zoned granite pegmatites.

Association: Morinite, lacroixite, eosphorite, apatite, tourmaline (Greifensteine, Germany); frondelite, faheyite, beryl, muscovite, quartz (Sapucaia mine, Brazil).


Name: Honoring Walter Roscher, mineral collector, Ehrenfriedersdorf, Germany.
