Cornetite

Crystal Data: Orthorhombic. Point Group: 2/m 2/m 2/m. As crystals, short prismatic on [001], {210} rounded, also showing large {021}, {221}, with a number of other forms known, to 1 cm; as flat radial aggregates and crusts. Twinning: On {h0l}.

Physical Properties: Hardness = ~4.5 D(meas.) = 4.10 D(calc.) = 4.14


Cell Data: Space Group: Pbca. a = 10.854(1) b = 14.053(3) c = 7.086(2) Z = 8

X-ray Powder Pattern: Bwana Mkubwa, Zambia. 3.04 (10), 4.29 (9), 3.17 (8), 3.68 (7), 2.06 (7), 5.07 (6), 5.48 (5)

Chemistry:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
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</thead>
<tbody>
<tr>
<td>P₂O₅</td>
<td>19.81</td>
<td>21.08</td>
</tr>
<tr>
<td>CuO</td>
<td>70.78</td>
<td>70.89</td>
</tr>
<tr>
<td>H₂O</td>
<td>9.41</td>
<td>8.03</td>
</tr>
<tr>
<td>Total [100.00]</td>
<td>100.00</td>
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</tbody>
</table>

(1) Bwana Mkubwa, Zambia; recalculated after deduction of Fe₂O₃ 0.53% and insoluble 4.03%.
(2) Cu₃(PO₄)(OH)₃.

Occurrence: A rare secondary mineral in the oxidized zone of some hydrothermal copper deposits.

Association: Copper, brochantite, pseudomalachite, libethenite, malachite, atacamite, chrysocolla, heterogenite.

Distribution: From the Star of the Congo mine, near Lubumbashi, and at the Kalabi and Lukini mines, Katanga Province, Congo (Shaba Province, Zaire). From the Bwana Mkubwa mine, Ndola, and Kansanshi, Zambia. At the Alaska, Mangula, and Molly mines, Lomagundi district, Zimbabwe. In the USA, in the Blue Jay and Empire-Nevada mines, Yerington district, Lyon Co., Nevada; at Tyrone, Santa Rita, Grant Co., New Mexico; on Saginaw Hill, Pima Co., Arizona. From Cerro Verde, Sonora, Mexico. In Chile, at Chuquicamata, Antofagasta; the Manto Ruso mine, about 85 km north of Copiapó, Atacama; and the Brillador mine, La Serena, near Coquimbo. From the Blockade mine, 60 km east of Mount Isa, and at Ravenswood, Queensland, Australia.

Name: To honor Jules Cornet (1865–1929), Belgian geologist.

Type Material: University of Liège, Liège, Belgium, 9.130 and 9.133.