Krupičkaite

$\text{Cu}_6[\text{AsO}_3(\text{OH})]_6\cdot8\text{H}_2\text{O}$

**Crystal Data:** Monoclinic.  
*Point Group:* 2/m.  
In rounded or grape-like aggregates, to 4 mm, composed of microcrystals each less than a few microns.

**Physical Properties:** *Cleavage:* None.  
*Tenacity:* n.d.  
*Fracture:* n.d.  
*Hardness:* = 2  
*D(meas.)* = n.d.  
*D(calc.)* = 3.123  
Soluble in dilute HCl.  
Non-fluorescent.

**Optical Properties:**  
*Translucent.*  
*Color:* Pale greenish blue, may show a gray tint.  
*Streak:* White.  
*Luster:* Vitreous.

**Cell Data:**  
*Space Group:* $P2_1/n$.  
*a* = 15.504(7)  
*b* = 18.144(7)  
*c* = 10.563(5)  
*β* = 103.30(4)°  
*Z* = 4

**X-Ray Diffraction Pattern:** Geister vein, Rovnost mine, Jáchymov, Czech Republic, 9.089 (100), 3.533 (1.03), 2.972 (0.93), 2.937 (0.54), 3.909 (0.51), 4.394 (0.48), 3.369 (0.47)

**Chemistry:**

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CuO</td>
<td>31.83</td>
<td>34.97</td>
</tr>
<tr>
<td>CaO</td>
<td>0.22</td>
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<tr>
<td>CoO</td>
<td>1.95</td>
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<tr>
<td>NiO</td>
<td>1.90</td>
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<tr>
<td>MnO</td>
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<tr>
<td>ZnO</td>
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<tr>
<td>FeO</td>
<td>0.06</td>
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<tr>
<td>SiO₂</td>
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<tr>
<td>As₂O₅</td>
<td>53.16</td>
<td>50.51</td>
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<tr>
<td>P₂O₅</td>
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<tr>
<td>H₂O</td>
<td>[15.35]</td>
<td>14.52</td>
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<tr>
<td>Total</td>
<td>105.40</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Geister vein, Rovnost mine, Jáchymov, Czech Republic; average electron microprobe analysis supplemented by Raman spectroscopy, H₂O calculated from structure; corresponds to $(\text{Cu}_{5.16}\text{Co}_{0.34}\text{Ni}_{0.33}\text{Zn}_{0.11}\text{Ca}_{0.05}\text{Fe}_{0.01}\text{Mn}_{0.01})\cdot6.01[\text{AsO}_3(\text{OH})]_{5.97}[\text{SiO}_4(\text{OH})]_{0.03}[\text{PO}_4(\text{OH})]_{0.01}\cdot8\text{H}_2\text{O}$.  
(2) $\text{Cu}_6[\text{AsO}_3(\text{OH})]_6\cdot8\text{H}_2\text{O}$.

**Occurrence:** As secondary crusts on cemented fragments with strongly altered relics of primary minerals.

**Association:** Tennantite, Bi-rich tennantite, galena, chalcopyrite, bornite, chalcocite, uraninite, quartz.

**Distribution:** From the Geister vein, 3rd Geister level of the Rovnost (Werner) mine, Jáchymov, Western Bohemia, Czech Republic.

**Name:** Honors Professor Jiří “George” Krupička (1913-2014), a polymath, linguist, geologist, and astronomer.

**Type Material:** Department of Mineralogy and Petrology, National Museum, Prague, Czech Republic (P1P 18/2020).

**References:** (1) Steciuk, G., J. Sejkora, J. Čejka, J. Plášil, and J. Hloušek (2021) Krupičkaite, $\text{Cu}_6[\text{AsO}_3(\text{OH})]_6\cdot8\text{H}_2\text{O}$, a new copper arsenate mineral from Jáchymov (Czech Republic). J. Geosciences, 66, 37-50.