Eldragónite

\[ \text{Cu}_6\text{BiSe}_4(\text{Se}_2) \]

**Crystal Data:** Orthorhombic.  *Point Group: 2/m 2/m 2/m.* As irregular grains and polycrystalline aggregates to 100 mm.

**Physical Properties:**  
*Cleavage:* None.  
*Fracture:* Conchoidal to uneven.  
*Tenacity:* Brittle.  
*Hardness = 3.5*  
*VHN = 225 (15 g load).*  
*D(meas.) = n.d.*  
*D(calc.) = 6.76*

**Optical Properties:**  
*Opaque.*  
*Color:* Brownish to light maroon.  
*Streak:* Brownish black.  
*Luster:* Metallic.  
*Optical Class:* n.d.  
*Pleochroism:* Distinct, light grayish brown to cream.  
*Anisotropism:* Strong, orange to blue-black, with undulose extinction.

**Cell Data:**  
*Space Group:* Pmcn.  
*a = 4.0341(4)*  
*b = 27.056(3)*  
*c = 9.5559(9)*  
*Z = 4*

**Chemistry:**

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cu</td>
<td>35.9</td>
<td>35.84</td>
</tr>
<tr>
<td>Fe</td>
<td>1.25</td>
<td></td>
</tr>
<tr>
<td>Ni</td>
<td>0.35</td>
<td></td>
</tr>
<tr>
<td>Bi</td>
<td>20.3</td>
<td>19.64</td>
</tr>
<tr>
<td>Se</td>
<td>42.5</td>
<td>44.52</td>
</tr>
<tr>
<td>Total</td>
<td>100.3</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) El Dragón mine, Quijarro Province, Department of Potosí, Bolivia; average of 24 electron microprobe analyses; corresponding to \((\text{Cu}_{5.98}\text{Fe}_{0.24}\text{Ni}_{0.06})_{\text{2.02}}\text{Bi}_{1.03}\text{Se}_{5.70}\).  
(2) \text{Cu}_6\text{BiSe}_4(\text{Se}_2).

**Occurrence:** Forms inclusions in compositionally zoned krut’aite masses, in a low-temperature hydrothermal vein-type deposit.

**Association:** Krut’aite, clausthalite, klockmannite, umangite, tiemannite, watkinsonite, petrovicite.

**Distribution:** At the El Dragón mine, Quijarro Province, Department of Potosí, Bolivia.

**Name:** For the locality that provided the first specimens.

**Type Material:** Canadian Museum of Nature, Ottawa, Canada (CMNMC 86154) and the Department of Materials Engineering and Physics, University of Salzburg, Austria (M17.001, M17.002, and M17.003).

**References:**  