Thunderbayite  

**Crystal Data:** Triclinic.  
*Point Group:* 1.  
As anhedral grains to 70 μm in rims on aurostibite.

**Physical Properties:**  
*Cleavage:* None.  
*Tenacity:* Brittle.  
*Fracture:* Irregular.  
*Hardness = ~3*  
*D(meas.) = n.d.  
*D(calc.) = 5.693*

**Optical Properties:**  
*Opaque.*  
*Color:* Black.  
*Streak:* Black.  
*Luster:* Metallic.  
*Optical Class:* Anisotropism: Weak, bluish to light blue. Weakly bireflectant.  
*Pleochroism:* Faint, gray-blue to slightly greenish gray-blue.  
*R1 - R2:* (471.1) 37.9-38.4, (548.3) 35.3-36.0, (586.6) 33.9-34.4, (652.3) 32.0-32.5

**Cell Data:**  
*Space Group:* P1.  
*a = 8.088(3)  
b = 7.854(3)  
c = 20.078(8)  
α = 92.52(3)°  
β = 93.71(3)°  
γ = 90.15(4)°  
Z = 2

**X-Ray Diffraction Pattern:** Hemlo gold deposit, ~35 km east of Marathon, Ontario, Canada.  
4.04 (100), 3.92 (80), 2.815 (50), 2.566 (45), 2.727 (40), 5.63 (30), 3.60 (30)

**Chemistry:**

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag</td>
<td>14.91</td>
<td>14.96</td>
</tr>
<tr>
<td>Au</td>
<td>27.40</td>
<td>27.31</td>
</tr>
<tr>
<td>Tl</td>
<td>9.37</td>
<td>9.45</td>
</tr>
<tr>
<td>Sb</td>
<td>39.80</td>
<td>39.39</td>
</tr>
<tr>
<td>S</td>
<td>8.61</td>
<td>8.89</td>
</tr>
<tr>
<td>Total</td>
<td>100.09</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Hemlo gold deposit, ~35 km east of Marathon, Ontario, Canada; average electron microprobe analysis; corresponding to Tl1.00Ag3.01Au3.03Sb7.12S6.84.  
(2) TlAg3Au3Sb7S6.

**Occurrence:** In a metamorphosed, stratiform, hydrothermal gold deposit in volcano-sedimentary rocks near a shear zone.

**Association:** Aurostibite, stibarsen, biagioniite, native gold, calcite.

**Distribution:** From the Hemlo gold deposit, ~35 km east of Marathon, Ontario, Canada.

**Name:** For the Thunder Bay district, Ontario, where the Hemlo gold deposit is located.

**Type Material:** Natural History Museum, University of Florence, Italy (46582/G).

**References:**  