**Gabrielite**

**Crystal Data**: Triclinic.  
*Point Group*: 1.  
Crystals are pseudohexagonal, prismatic to platy on (001), to 0.4 mm; as aggregates to 1 mm. Crystals show {001} dominant and are striated parallel to [100].  
*Twinning*: On (100).

**Physical Properties**: 
*Cleavage*: Perfect on {001}.  
*Fracture*: Uneven to conchoidal.  
*Tenacity*: n.d.  
*Hardness* = 1.5-2  
*VHN* = 18 (10 g load).  
*D*(meas.) = n.d.  
*D*(calc.) = 5.41

**Optical Properties**: Opaque.  
*Color*: Gray to black, white with red internal reflections in reflected light.  
*Streak*: Blackish red.  
*Luster*: Metallic.  
*Optical Class*: n.d.  
*Reflection anisotropism*: Weak.  

**Cell Data**: 
*Space Group*: P1.  
*a* = 12.138(3)  
*b* = 12.196(3)  
*c* = 15.944(4)  
*α* = 78.537(5)°  
*β* = 84.715(4)°  
*γ* = 60.470(4)°  
*Z* = 6

**X-ray Powder Pattern**: Lengenbach, Binntal, Canton Valais, Switzerland.  
15.631 (100), 3.143 (90), 3.531 (80), 2.911 (70), 2.978 (60), 2.520 (60), 3.263 (50)

**Chemistry**:  
<table>
<thead>
<tr>
<th>Element</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tl</td>
<td>37.30</td>
</tr>
<tr>
<td>Ag</td>
<td>8.47</td>
</tr>
<tr>
<td>Cu</td>
<td>12.60</td>
</tr>
<tr>
<td>As</td>
<td>18.90</td>
</tr>
<tr>
<td>Sb</td>
<td>1.79</td>
</tr>
<tr>
<td>S</td>
<td>20.64</td>
</tr>
<tr>
<td>Total</td>
<td>99.70</td>
</tr>
</tbody>
</table>

(1) Lengenbach, Binntal, Switzerland; average of 11 electron microprobe analyses supplemented by IR spectroscopy, corresponds to Tl<sub>1.98</sub>(Ag<sub>0.85</sub>Cu<sub>2.16</sub>)<sub>2</sub>Σ<sub>3.01</sub>(As<sub>2.74</sub>Sb<sub>0.16</sub>)<sub>2</sub>Σ<sub>2.90</sub>S<sub>7</sub>.

**Occurrence**: A late-stage mineral in vugs in a hydrothermally-altered dolomitic marble.

**Association**: Hutchinsonite, hatchite, edenharterite, trechmannite, tennantite, realgar, rathite.

**Distribution**: From Lengenbach, Binntal, Canton Valais, Switzerland.

**Name**: Honors Walter Gabriel (b. 1943) of Basel, Switzerland, a mineral photographer and expert on Lengenbach minerals.

**Type Material**: Natural History Museum and the Institute of Mineralogy, University of Basel, Switzerland (S113).