**Castellaroite**

**Crystal Data:** Monoclinic.  
*Point Group:* 2/m.  
As bladed crystals, flattened on [001], striated and elongated parallel to [100] that display {110}, {012}, and {001}, to 2 mm. Typically in radial aggregates to 5 mm.

**Physical Properties:**  
*Cleavage:* Perfect on {001}.  
*Tenacity:* Flexible.  
*Fracture:* Curved.  
*Hardness = 2.5*  
*D(meas.) = 3.14(2)  
*D(calc.) = 3.164  
*Soluble in dilute HCl.*

**Optical Properties:**  
*Transparent.*  
*Color:* Colorless.  
*Streak:* White.  
*Luster:* Vitreous to silky.  
*Optical Class:* Biaxial (-).  
*α = 1.644(1)*  
*β = 1.662(1)*  
*γ = 1.667(1)*  
*2V(meas.) = 57(1)°*  
*2V(calc.) = 55°*  
*Orientation:* Y = b, Z = a.  
*Dispersion:* Moderate, r < v.  
*Pleochroism:* None.

**Cell Data:**  
*Space Group:* P2_1/n.  
*a = 8.7565(8)*  
*b = 13.4683(13)*  
*c = 18.652(2)*  
*β = 94.876(7)°*  
*Z = 8*

**X-ray Powder Pattern:** Monte Nero mine, Rocchetta Vara, La Spezia, Liguria, Italy.  
10.90 (100), 3.043 (87), 2.656 (85), 9.27 (67), 3.323 (47), 2.165 (46), 6.97 (42)

**Chemistry:**

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MnO</td>
<td>41.62</td>
<td>40.63</td>
</tr>
<tr>
<td>As_2O_5</td>
<td>43.35</td>
<td>43.89</td>
</tr>
<tr>
<td>P_2O_5</td>
<td>0.82</td>
<td></td>
</tr>
<tr>
<td>H_2O</td>
<td>[15.69]</td>
<td>15.48</td>
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<tr>
<td>Total</td>
<td>100.48</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Monte Nero mine, Rocchetta Vara, La Spezia, Liguria, Italy; average of 28 electron microprobe analyses supplemented by Raman spectroscopy, H_2O from stoichiometry; corresponds to Mn^{2+}_{3.02}(As_{1.94}P_{0.06})_{2-2.00}O_{12.5}H_{8.96}.  
(2) Mn^{2+}_{3}(AsO_4)_2·4.5H_2O.

**Occurrence:** A secondary mineral precipitated from oxidizing hydrothermal fluids.

**Association:** Coralloite, manganohämsite, rhodochrosite, sarkinite, sterlinghillite, strashimirite, walkkildellite (Monte Nero mine); braccoite, hematite, manganberzeliite, orthoclase, tiragalloite (Valletta mine).

**Distribution:** In Italy, from the Monte Nero mine, Rocchetta Vara, La Spezia, Liguria, and the Valletta mine, near Canosio, Cuneo, Piedmont.

**Name:** Honors Fabrizio Castellaro (b. 1970), an Italian mineral collector specializing in the minerals of Liguria, who discovered the first specimens.

**Type Material:** Natural History Museum of Los Angeles County, Los Angeles, California, USA (65603 and 65604) and the Natural Science Museum, Torino, Italy (M/U 16950 and 16951).

**References:**  
(2) (2017) Amer. Mineral., 102, 917-918 (abs. ref. 1).