Stützite  \( \text{Ag}_{5-x} \text{Te}_3 \) \((x = 0.24 \text{ to } 0.36)\)

Crystal Data: Hexagonal.  \( \text{Point Group: } 6/m 2/m 2/m \). The only crystal known is the type, 2 cm, hexagonal, equant, and highly modified, with 14 forms; commonly massive, compact, granular.

Physical Properties:  \( \text{Fracture: } \text{Subconchoidal}. \)  \( \text{Tenacity: } \text{Brittle}. \)  \( \text{Hardness } = 3.5 \)  \( \text{VHN} = 73-90 \) \((25 \text{ g load})\).  \( \text{D(meas.) } = 8.00 \)  \( \text{D(calc.) } = 8.18 \)

Optical Properties: Opaque.  \( \text{Color: } \text{Dark lead-gray, tarnishes rapidly to a dark bronze to iridescence; in polished section, pale gray}. \)  \( \text{Luster: } \text{Metallic}. \)  \( \text{Anisotropism: } \text{Moderate, in gray reddish brown-blue}. \)

Cell Data:  \( \text{Space Group: } C6/mmm. \)  \( a = 13.38 \)  \( c = 8.45 \)  \( Z = 7 \)

X-ray Powder Pattern: May Day mine, Colorado, USA.  \( 2.16 \) \((100b)\),  \( 2.55 \) \((80b)\),  \( 3.03 \) \((70)\),  \( 2.62 \) \((70)\),  \( 3.56 \) \((60)\),  \( 3.52 \) \((60)\),  \( 2.11 \) \((60)\),  \( 2.62 \) \((70)\),  \( 3.56 \) \((60)\),  \( 3.52 \) \((60)\),  \( 2.11 \) \((60)\).

Chemistry:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
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<tbody>
<tr>
<td>Ag</td>
<td>57.1</td>
<td>59.8</td>
<td>58.49</td>
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<tr>
<td>Cu</td>
<td>0.1</td>
<td></td>
<td></td>
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<tr>
<td>Te</td>
<td>42.6</td>
<td>39.2</td>
<td>41.51</td>
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<tr>
<td>Total</td>
<td>99.7</td>
<td>99.1</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Red Cloud mine, Colorado, USA; by electron microprobe, corresponding to \( \text{Ag}_{4.76} \text{Te}_{3.00}. \)
(2) Bisbee, Arizona, USA; by electron microprobe, corresponding to \( (\text{Ag}_{5.41} \text{Cu}_{0.02})_{\Sigma=5.43} \text{Te}_{3.00}. \)
(3) \( \text{Ag}_{5} \text{Te}_{3}. \)

Occurrence: As replacement masses in hydrothermal deposits associated with other tellurides and sulfides.

Association: Sylvanite, hessite, altaite, petzite, empressite, tellurium, gold, galena, sphalerite, colusite, tetrahedrite–tennantite, pyrite.

Distribution: A museum specimen, probably from Săcărimb (Nagyág), Romania [TL]. At Kremnica (Kremnitza) and Byšta, Slovakia. From Glava, Värmland, Sweden. In the Kochbulak gold deposit, Chatkal-Kuramin Mountains, eastern Uzbekistan. On Temagami Island, Lake Temagami, Ontario; and at Lindquist Lake, Quebec, Canada. In the USA, in Colorado, at the May Day mine, La Plata district, La Plata Co.; from the Golden Fleece mines, Lake City, Hinsdale Co.; at the Empress Josephine mine, Bonanza district, Saguache Co.; from Buckeye Gulch, near Leadville, Lake Co.; and at the Red Cloud and other mines, Jamestown and Gold Hill districts, Boulder Co. In the Mayflower mine, Tobacco Root Mountains, Madison Co., Montana; from the Campbell mine, Bisbee, Cochise Co., Arizona. At the Moctezuma (Bambolla) mine, 12 km south of Moctezuma, Sonora, Mexico. In the Kawazu mine, Shizuoka Prefecture, Japan.

Name: To honor Andreas Xavier Stütz (1747–1806), mineralogist of Vienna, Austria.

Type Material: Vienna University, Vienna, Austria, 5808; Harvard University, Cambridge, Massachusetts, USA, 108098.