Bournonite

Crystal Data: Orthorhombic. Point Group: \( mm2 \). Crystals short prismatic to tabular, typically striated, as much as 11 cm across; commonly as subparallel aggregates. Also massive, granular to compact. Twinning: On \{110\}, commonly forming cross or cogwheel aggregates.

Physical Properties: Cleavage: \{010\}, imperfect; \{100\} and \{001\}, less perfect. Fracture: Subconchoidal to uneven. Tenacity: Brittle. Hardness = 2.5–3 VHN = 176–205 (100 g load). \( D(\text{meas.}) = 5.83 \) D(calc.) = 5.84


Cell Data: Space Group: \( Pn m2_1 \). \( a = 8.153(3) \)
\( b = 8.692(3) \)
\( c = 7.793(2) \)
\( Z = 4 \)

X-ray Powder Pattern: Neudorf, Germany. 2.74 (100), 3.90 (80), 1.765 (60), 2.59 (50), 4.37 (40), 2.99 (40), 2.69 (40)

Chemistry:

\[
\begin{array}{ccc}
\text{Pb} & 42.34 & 42.40 \\
\text{Cu} & 12.80 & 13.01 \\
\text{Zn} & 0.04 & \text{rem.} \\
\text{Fe} & 0.27 & 0.37 \\
\end{array}
\]

Total 99.84 100.00

(1) Herja (Kisbánya), Romania. (2) PbCuSbS\(_3\).

Polymorphism & Series: Forms a series with seligmannite.

Occurrence: In hydrothermal veins formed at medium temperatures.

Association: Galena, tetrahedrite, sphalerite, chalcopyrite, pyrite, stibnite, zinkenite, siderite, quartz, rhodochrosite, dolomite, barite.

Distribution: Numerous localities, even for fine crystals. In England, from Wheal Boys, St. Endellion [TL], and in exceptional crystals from the Herodsfoot mine, Laureath, Cornwall. At the Mogul mine, Silvermines, Co. Tipperary, Ireland. From the Georg mine, near Horhausen, North Rhine-Westphalia, and at Clausthal, Neudorf, and Wolsfberg, Harz Mountains, Germany. From Příbram, Czech Republic. At Baia Sprie (Felsőbanya), Cavnic (Nagykánya), and Săcărimb (Nagyag), Romania. In France, from Pontgibaud, Puy-de-Dôme; large crystals at St. Laurent Le Minier, Gard; and from Prunières [ck??Gard??also], Isère. In Bolivia, from Chorolque, Colquechaca, Pacuani, Machacamarca, and Oruro; at Cerro Rico, and as fine crystals from the Víboras mine, Machacamarca, Potosí. At the Quiruvilca mine, La Libertad, and from Pachapaque. Peru. At Park City, Summit Co., Utah, USA. In Mexico, in the Noche Buena mine, Mazapil, Zacatecas, and at Naica, Chihuahua. From Broken Hill, New South Wales, Australia. In the Chichibu mine, Saitama Prefecture, and the Nakaze mine, Hyogo Prefecture, Japan. At the Yaogangxian mine, Chenzhou, Hunan Provvince, China.

Name: In honor of Jacques Louis de Bournon (1751–1825), French crystallographer and mineralogist.


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