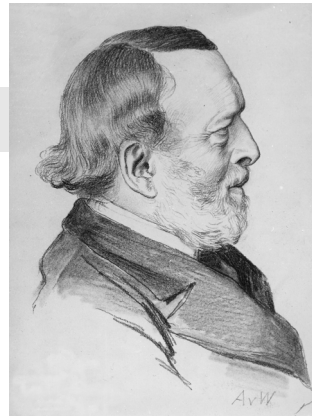


Jordanite



Type locality:

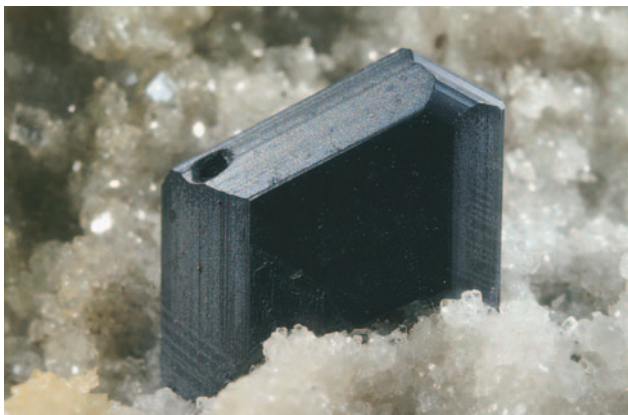
Lengenbach quarry, Binn, Binntal, Valais.

Occurrence:

Occurs as lead grey, tarnished or shiny, pseudohexagonal ($\beta \approx 120^\circ$) crystals (up to 7 cm in diameter!). They are either tabular, showing occasional iridescence or “dipyramidal”; the latter are usually smaller and are mainly found in the new quarry. A fibrous red form has also been reported. Polysynthetic twinning is often pronounced and clearly visible. Rare cases of well developed epitaxies of jordanite on sphalerite have been reported. While it has been found all across the quarry, jordanite is more frequent in the As-poor zones where it is typically associated with lengenbachite, dufrénoysite, galenite and sphalerite.

Name:

To honour Hermann Jordan (1808-1887), physician in Saarbrücken (D). P. Groth wrote that *as a young man with a lung disease [Jordan] looked for an high altitude place in Switzerland, free of tourism and found it in the small village of Imfeld* [manuscript quoted in 9], close to the Lengenbach quarry. Every summer he used to spend a few weeks there. Interested in mineralogy he built up a small but very fine collection of Swiss minerals – according to Groth, who bought it for the Strasbourg University (where it still resides), the best of its kind after Wisner’s collection. Directly or indirectly through Groth, many mineralogists, like vom Rath, Sartorius von Waltershausen or Baumhauer, developed an interest in the Lengenbach minerals after having examined specimens from the Jordan collection. Jordan was also fascinated by the Carboniferous and Permian fossils from the Saarland. His rich fossil collection is now in the Humboldt University in Berlin.



Jordanite crystal. Field width: 9.5 mm. Coll., photo and courtesy: R. Cannon

Monoclinic, $2/m$, $P2_1/m$

$Pb_{28}As_{12}S_{46}$

$a = 8.918$, $b = 31.899$, $c = 8.462$, $\beta = 117.79^\circ$ [7]

IMA number: GF

Distribution:

While the Lengenbach jordanite shows only small amount of Sb, Sb-rich jordanite has been found at four other dolomite localities in the Binnental [6,MLS]. Worldwide it has been found in a large number of localities but the size and beauty of Lengenbach jordanite crystals remain unchallenged.

Remarks:

As Solly already suspected [3], jordanite builds a solid solution series with the isomorphous Sb-bearing analogue geocronite. Three of the four As sites in jordanite can be expanded to accommodate a total of eight Sb atoms in the structure. However, one site is not able to incorporate Sb, thereby limiting the extent of solid solution to an As/(As + Sb) value of 0.33 [8]. The structure of jordanite is a distorted galenite structure [7]. The morphological studies of the early mineralogists [2, 3, 4] revealed more than 125 forms. Their indices can be transformed to modern [7] indices using the transformation matrix $101 / 020 / 00\bar{2}$.

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Jordanite modified after [3]. The crystal is drawn on the basis of the modern unit cell [7]. Left: rotated so as to match the original drawing; right: clinographic orientation.

