

STANNITE IN TASMANIA

The occurrences of stannite in Tasmania are limited to a portion of the Zeehan field. It was first discovered in Clarke's lode on the Silver Queen (later the Zeehan Queen) mine. The largest occurrence is, however, in the Oonah Mine.

Clarke's Lode. This lode is a large pyritic one, striking at 30° and dipping S.E. at 60°. The lode consists of pyrite, galena and stannite, with a little quartz, the minerals being arranged in bands or irregular bunches. It was worked chiefly for the galena, but later small quantities of stannite were marketed.

A picked sample of the stannite ore was assayed, the results being shown in Column 1 below. Column II gives the results of assay of 20 tons of the stannite ore.

	I.	II.
Tin	8.5 per cent	14 percent.
Lead	6.0 " "	
Copper	8.9 " "	16 " "
Silica	7.0 " "	
Silver	57 ozs per ton	78 ozs. per ton.

Partial records of production are as follows:-

Silver Queen - quarter ending Dec. 1901 - 16 tons.
 " " March 1902 - 7.25 "
 Zeehan Queen - " " March 1905 - 21 tons.

The lode has been opened up by an adit level; 44 feet level from Mace's shaft which equals the 28 feet level in the Queen Shaft; the No. 1 level (110' depth) from the Queen Shaft. At the 44 feet level it had been driven on for 600 feet, while other workings to the north proved it 200 feet longer. In 1904, it had been driven on for 210 feet at No.1 level, and this drive was being extended, but the results are not known.

The width ranges up to 4 or 5 feet, but the portion mined was less.

It is impossible with the information available to state the proportion of Stannite in the lode and the prospects of the mine as a producer of Stannite.

Oonah Mine. This mine was opened as a silver-lead mine and a lode containing Stannite was discovered parallel to and some 250 to 300 feet west of the galena lode.

Attention was later devoted to this Stannite lode as soon as markets could be found for clean Stannite ore.

The lode was opened up by four adit levels. The three

upper ones had a depth of 40 feet between them and represented work along a length of 400 feet. The lowest adit level was also the No. 1 level of the shaft or main workings. Levels 3, 4, 5 and 6 were driven from this shaft which had a depth of 450 feet. The Stannite lode was driven on for the respective lengths indicated at the following levels:-

No. 1 or adit level	600 feet
No. 3	450 "
No. 4	400 "
No. 5	320 "
No. 6	250 "

The lode contained a number of shoots along this length. It ranged in width from a few inches up to 4 feet, the usual width being 2.5 feet. In the southern part, the reef has a N. & S. strike until at its northern end it cuts a "slide" bearing N. 75° W. The lode follows the slide for 150 feet, and then leaves it and assumes its N - S strike on the northern side. The three upper adit levels were on the north side of the slide, but the levels from 1 to 6 were driven both north and south of the slide.

The lode is a banded one and consists of Stannite, pyrite and chalcopyrite with lesser amounts of galena, tetrahedrite and bismuthinite, the gangue being quartz and siderite, and some fluorite. In a microscopic examination of specimens of Stannite, Dr. F.L. Stillwell determined the following minerals - stannite, chalcopyrite, pyrite, arsenopyrite, cassiterite, tetrahedrite, bismuthinite and galena.

Analyses of the ore are given below:-

	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.
Silver. Ozs per ton)	63.0	22.0	97.3	84.0	50.0	63.0	59.6	75.5	60.5	68.0
Copper. per cent	10.7	5.5	26.77	11.5	10.3	13.8	12.0	13.5	12.25	11.5
Tin as sulphide))	4.5 }	23.27)		16.0		9.73		8.7	9.0
as oxide)	9.2)		0.64)							
Arsenic "	4.4		Trace							
Bismuth "	Trace	0.4-								
		0.45	2.27							
Antimony "	Trace		0.505							
Zinc "	N.D.	N.D.	0.475							
Iron "	N.D.	26.0-								
		27.0	12.11							
Sulphur "	29.75	29.0	32.10							
Silica "	23.00	22.0-								
		27.0	1.40							
Alumina "	2.20	4.0-								
		5.0								
Oxygen			0.14							

- I. Bulk assay of 70 tons sold in 1903.
- II. Bulk analysis of ore as mined in 1909.
- III. Analysis of apparently pure mineral, J.H. Levings.
- IV.-X. Assays of parcels of ore (from II to 81 tons in each) sold during 1901 - 03.

The lode was worked mainly by tributors from 1899 on to about 1905, when all the ore above the No. 1 level had been stopped out. An option was granted to an English Company and after tests the option was exercised and the Oonah Mines Ltd. formed, and this company mined the ore from Nos. 4, 5 and 6 levels. Apparently the extraction of known ore from these levels was nearing completion, as it was reported in 1910 that arrangements were being made to deepen the shaft. The company had smelters at Silver Bell, and produced two products, viz. a copper silver matte and a copper-tin alloy.

Complete records of the production of Stannite are not available, but the following partial records give some idea of the amount.-

Year	Quarter ending 31st Mar. Tons	Quarter ending 30th June Tons	Quarter ending 30th Sept. Tons	Quarter ending 31st Dec. Tons
1898			1	
1899				35.5
1900		173.22		
1901		122.5		76) Waller reports
1902	165		469.47 for last year	250) 1227 tons from July 1901.
1903	81 (2 mos.) 244.55 sold for last 6 months	137	120	119)
1904	73	94	112.25	47)
1905	26.5			
1906				150 tons stacked.
1907				
1908			500 tons sent to England.	
1909		1269	1230 firsts 477 seconds	1027
1910	1191	723.5 matte.	9157 (567 matte)	369 (matte)

The above figures give a total of 16862 tons of Stannite mined. Allowing for the tonnage of Stannite when only matte was reported and when the production was not recorded the total amount of Stannite mined was probably between 20,000 and 25,000 tons. A fairly large tonnage has, therefore, been mined from the Oonah Mine and it would appear that all the ore above the No.6 level has been removed. The future of the mine, therefore, depends upon the extension of the lode in depth and its development by further sinking of the shaft cross-cutting and driving.

(Signed P.B. Nye)
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