

A NOTE ON COPPER PRODUCTION AT ALDERLEY EDGE, CHESHIRE

by

Trevor D. Ford

The revival of interest in metal mining in Britain has caused a number of companies to look into the possibilities of reopening Alderley Edge Mines, amongst many others up and down the country. One of the first preliminary investigations in such a project is the assessment of the nature of the original ore and the amounts worked. For many old mines the production figures are no longer available, if indeed they were ever kept. Alderley Edge is no exception and only partial records can be traced, even these being inconsistent. Full analysis of old account books would help if they could be found. At present most works on Alderley Edge quote the following:-

1867 - 1877 Copper ore output 168,269 tons yielding about 4,000 tons of copper metal, i. e. about 2.1% of the ore mined.

In 1867 alone the copper ore mined was 15,152 tons yielding 301 tons copper metal, i. e. about 2%. Valued at £22,570 (£75 per ton).

From 1877 to 1902 the mines were idle, and the ensuing lessees only managed to extract 35 tons of ore rock by 1915! No lead production figures appear to have been published.

Recently I came across some notes of the late Sir Arthur Russell which fill in some of the gaps, and which indicate that the above mining period should have been from 1857 not 1867!

Sir Arthur Russell's figures indicate a lower total production, though figures for some years are missing. They also show an average copper metal yield of 1.8%, with the yield apparently falling from 3% in 1857 to a little over 1% in 1877. Lead production is only given for three years and the lead metal content seems to have been both high and variable. A little silver was extracted. Several attempts were apparently made to extract lead from cerussite-bearing sandstone without success, and Russell notes that this was due to it being lost as fine slimes on crushing the quartzose sandstone.

Cobalt was worked on a separate lease for a time in the mid 19th century but no figures are available, and it is doubtful if it would have been economic without having copper to support it.

PRODUCTION AT ALDERLEY EDGE MINES ACCORDING TO SIR ARTHUR RUSSELL

<u>Year</u>	<u>Tons of Copper ore</u>	<u>Fine Copper</u>	<u>Average value of standard Copper per ton</u>	
1857	820 17 cwt.	24	£123	
1858	?	100(estimated)	£107	
1859	10271	172 15	£108	Year 1859
1860	?	155 8	£105	160 tons lead ore yielding
1861	?	215 2	£100	69 tons 17 cwt. of lead and
1862	?	204 1	£ 99	15 oz. of silver.
1863	?	200	£ 93	
1864	14696	205 14	£100	Year 1860
1865	14904	207 9	£ 90	6 tons 17 cwt. lead ore
1866	15040	189 10	£ 78	yielding 3 tons of lead
1867	15152	182 7	£ 77	and 45 oz. silver.
1868	15016	165 4	£ 76	
1869	13240	260	£ 75	Year 1861
1870	6836	135	£ 69	106 tons 17 cwt. lead ore
1871	8608	172	£ 74	yielding 25 tons 10 cwt. of
1872	6248	130	£ 95	lead and 95 oz. of silver.
1873	8128	162 10	£ 91	
1874	8184	89 9	£ 86	
1875	8336	85	£ 88	
1876	7328	78	£ 81	
1877	6283	73 9	£ 74	
1878	nil	nil		
	<u>159,090 tons</u>	<u>3206 tons 18 cwt.</u>		

Prior to 1857 the mines had a long history of mining back to prehistoric days, and this, taken with rough estimates of the total volume of the workings after allowing for exploration and development drives etc., suggests that the total yield throughout mining history may have been double that of the 1857 - 1877 period.

Since modern mining companies are accustomed to think in terms of hundreds of tons production per week at least, it does not look as though Alderley Edge would have been a very attractive proposition even if virgin ground today; but then, no systematic exploration of the immediately surrounding ground has been attempted, and as Mr. Warrington has showed, the means of ore deposition is still not fully understood.

Trevor D. Ford, B.Sc., Ph.D., F.G.S.,
Department of Geology,
The University,
Leicester