

THE MINING AND SMELTING OF COPPER IN  
ENGLAND AND WALES  
1760 – 1820

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## ABSTRACT

This thesis traces the development of the copper industry, mining and smelting, located mainly in Cornwall and South Wales respectively, between 1760 and 1820, and the interaction between them. It is especially concerned with the impact on the mining industry of new sources of ore, technological change, and the regionalisation of copper smelting. Whereas previous work has tended to regard mining and smelting as two regionally distinct quasi-independent industries, they are here treated as interdependent, exemplified by a complex web of collusion, cartel and monopoly.

The thesis is in four main sections. Initially, it examines the geology and geography of the two industries to establish the reasons for their segregation. This is followed by a chapter explaining the structure and economics of mining. The third chapter explores the growth of the smelting industry, examining the early regional distribution of the industry, and its ultimate consolidation in South Wales. The fourth chapter opens with a brief overview of the demand for copper, continuing with an extended discussion on the marketing of ore and metal. The effect of Boulton and Watt's patent in respect of the improvements made to the steam engine is examined.

To date our understanding of the copper industry in the eighteenth and early nineteenth centuries has been derived largely from studies of the late nineteenth century. This thesis argues that it is misleading to reach conclusions about an earlier period on the conclusions of later studies. Available statistical evidence for the period from 1760 to 1820 is examined, notably that contained in the 'Report from the Committee Appointed to Enquire into the State of the Copper Mines and Copper Trade of this Kingdom', published on 7th May 1799. This provides the basis for an evaluation of productivity, and of company and shareholder profits. It is also shown that there was a correlation with the output of tin, many mines being producers of both ores.

In relation to the marketing of ore in this period it is argued that the value of the copper content was not the only determinant of market price, as previous accounts have suggested. Instead, the value based on an assumed constant yield appears to have been a key factor in the early years.

Finally, collusion emerges as an important theme. Previous work has pointed to the tendency of the South Wales smelting companies to collude for the purpose of price fixing. It is also argued that they also sought through collusion to achieve an optimum mix of ore to facilitate efficient smelting. Other restrictive practices are identified, notably those relating to Boulton and Watt's monopoly in the imposition of their engine patent, and the emergence of a short-lived marketing cartel in the form of the Cornish Metal Company (1785 – 92), which sought to counter the dominant influence of the South Wales smelting companies. For much of the fourth quarter of the eighteenth century, the industry was dominated by Thomas Williams, managing director of the Anglesey mines, associated smelters and other manufacturing interests, whose opposition to the South Wales smelting companies resulted in him achieving a total monopoly of the copper trade in the late 1780s and early 1790s.