

New Views of Early Mining and Extractive Metallurgy

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Summary. The technology of mining and smelting metals in antiquity had received little serious study until quite recently. Now archaeological excavation coupled with detailed scientific examination from production sites all over the world is building up a comprehensive picture of the development of one of human society's key technologies. Mining and smelting sites present very different problems and potentials from most ancient sites, and in this lecture some of the archaeological and scientific methodology will be described. There will also be an outline of the development of metallurgy based on this approach, exemplified by sites in Britain, the Mediterranean and India.

The subject matter of this lecture is well-covered in the following publications:

General

- Craddock, P. T. 1989: The scientific investigation of early mining and metallurgy. In Henderson, J. (editor), *Scientific Analysis in Archaeology* (Oxford, Oxford University Committee for Archaeology Monograph 9) 178–212.
- Craddock, P. T. and Hughes, M. J. (editors) 1985: *Furnaces and Smelting Technology in Antiquity* (London, British Museum Occasional Paper 48).
- Freestone, I. C. 1989: Refractory materials and their procurement. In Hauptman, A., Pernicka, E. and Wagner, G. A. (editors), *Old World Archaeometallurgy, Der Anschnitt Beiheft 7* (Bochum, Deutschen Bergbau-Museum) 155–163.

Britain

Crew, P. and Crew, S. (editors) 1990: *Early Mining in the British Isles* (Maentwrog, Plas Tan y Bwlch Occasional Paper 1).

Mediterranean

Rothenberg, B. (editor) 1990: *The Ancient Metallurgy of Copper* (London, Institute of Archaeometallurgical Studies, University College London).

India

Craddock, P. T., Freestone, I. C., Gurjar, L. K., Middleton, A. and Willies, L. 1989: The production of lead, silver and zinc in Ancient India. In Hauptman, A., Pernicka, E. and Wagner, G. A. (editors), *Old World Archaeometallurgy, Der Anschnitt Beiheft 7* (Bochum, Deutschen Bergbau-Museum) 51–70.