

Book review

Metals make the world go round: The supply and circulation of metals in Bronze Age Europe edited by C F E Pare. *Oxbow Books, Oxford, 2000. 279pp, A4, 106 figs, 26 tables. ISBN 1 84217 019 8. £45-00.*

The foreword to these proceedings of a conference held at the University of Birmingham in June 1997 provides both a promise and a warning in the words 'this volume illustrates the remarkable variety of insights which research on metalwork can offer to Bronze Age studies'. This volume, in common with many edited volumes of conference proceedings, encompasses a relatively large number of quite disparate but often very detailed studies, each of which requires from the reader considerable background knowledge of a particular area, geographic or otherwise, of academically orientated archaeological study. This approach can leave the more general reader frustrated, especially when there is no introductory commentary bringing together the subjects of the papers and outlining the main themes covered. Although the papers are to some extent grouped, primarily by geographical context, this volume would most certainly have been improved by such an introduction.

The editor, in the first paper, raises some thought provoking questions concerning definitions and understandings of the meaning of the term 'Bronze Age'. However, a part of his solution to the ambiguities inherent in the diversity of definitions across a wide geographic area would appear to advocate abandoning a fairly well understood chronological term in favour of a metallurgically 'pure' definition, which would exclude areas where arsenical copper was commonly used for purposes elsewhere served by tin bronze. His very useful survey of the variations in the adoption and exploitation of tin bronze across Europe, largely derived from a numerical examination of the existing database of metal analyses, is followed by a discussion of some arguments for the early 'commoditisation' of the metal.

The next two papers extend the evidence provided by lead isotope analyses of Bronze Age artefacts and potential ore sources from the much studied Aegean data to mainland Greece (Kayafa, Stos-Gale and Gale) and the western Mediterranean (Stos-Gale), in the eternal quest to link mining areas with the eventual resting

places of metal artefacts. The chemical analyses of the artefacts included in the first paper are mainly used to explore the use of alloying. The number of analyses could not support the statistical rigour required to exploit the full power of combining the results of lead isotope and chemical analyses but the authors are to be commended for provision of both sets of data. The second paper covers a much wider geographic area and provides a comprehensive summary of the results of lead isotope analyses for each region therein.

Baboula's paper interprets the differing patterns of metal deposition in Late Minoan burials by focusing on 'what metal meant for them and their contemporaries in economic and social terms'. This approach acknowledges the importance of the social context of the material deposited and goes some way to escape the simple equation between deposition practices and economic processes which has marked many archaeometallurgical studies. In the following, well written, paper, Sherratt, with great clarity, applies a socio-economic analysis to the Bronze Age in the Eastern Mediterranean and, refreshingly, argues coherently for the end of the Bronze Age being the result of an excess of bronze.

Giardino follows this by using a traditional typological analysis of metal artefacts from Sicilian hoards to elucidate the change in Aegean and Western Mediterranean trading patterns over the period spanning the Late Bronze and Early Iron Ages. Pearce's paper, from which the volume derived its name, examines metal procurement patterns in northern Italy during the Late Bronze Age through observations of the changing status of certain mining areas and important craft production sites and proposes that the simultaneous availability of both copper and tin in the Tuscan area was the driving force behind the changes seen.

Diaz-Andreu and Montero present the results of a substantial survey of the chemical compositions of ores and artefacts in a part of Spain directly adjacent to the southeastern region, wherein it is held that there was independent invention of metallurgy. They combine these with survey results and other archaeological evidence to argue that metals were not the driving force

behind social change during the Bronze Age, at least until the final stages. Harrison and Martin continue this theme in the context of Atlantic Iberia during the Late Bronze Age by putting forward a model of patronage and clientship, initially based on surplus livestock, which developed into the militarily oriented society evidenced by the metalwork deposits of the period.

Winghart moves to the north in discussing the archaeological background to a series of questions concerning connections between hilltop/fort settlement, mining and ore processing, casting and scrap hoard deposition and burial practices in the northern Alps and Danube region. A forthcoming programme of chemical analyses will, the author, perhaps optimistically, propose, provide rather more answers than the existing archaeological evidence.

Nebelsick then roves through most of non-Mediterranean Europe in pursuit of ritual practices epitomised by deposits of mutilated metalwork. This is a subject eminently worthy of discussion and its removal from the realm of economic interpretations is most welcome. However, the author might have gained even more insight had he taken greater account of the different regional and social contexts in which the practices occur.

Huth returns to exchange networks in a European Late Bronze/Early Iron Age context in discussing 'rib and pellet' decorated axes, 'mass-fabricated' axe hoards and differential alloying in such hoards. Although he sees the distribution of the first as highlighting the extent of exchange driven networks of contact, he views it as strongly related to the changes in metal hoarding practices which he attributes to the break down of the 'functioning systems' of metal supply and recycling which produced those networks. Verlaeck's paper also deals with hoarding and metal circulation, concentrating this time on a well constructed analysis of the artefactual and quantitative make up of hoards in a socially coherent region. He, like Sherratt, sees excess bronze as a prime component of its demise, particularly, in this non-

producing area, as a status symbolism and proposes a hierarchical system of elite alliances as a model for a social system within which exchange of prestigious metalwork was confined. Mazarek restricts her attention to the west and north of Europe in examining some intriguing aspects of axe deposition, including certain regional preferences for numbers, typological combinations, condition and context. Her approach to the subject is very different but, like Winghart's Alpine study, it appears to be a work still in progress. Pydyn uses the Baltic metalwork evidence to demonstrate the growth of an exchange network reaching from the Nordic region across the whole of northeastern Europe. He argues most persuasively for a greater awareness of the geographical differences in the cultural approaches to 'metal production, exchange and consumption existing within the widespread contact network which epitomised the Bronze Age world'.

The final set of three papers deal with weight systems in the Bronze Age. Lassen's paper sets out in considerable detail the various known Bronze Age weight systems and the examples thereof, which provides a comprehensive introduction to the subject. Pulak provides a fascinating account of the analysis of the balance weight assemblage found on the Ulu Burun shipwreck, whereby the weights were divided into sets matching particular standards, giving considerable insight to the ways in which such trade was organised. Ruiz-Galvez takes the deductive process further by attempting to detect exchange networks via the use of known Aegean weight systems in central and western Europe, identified primarily by examination of the weights of gold objects and mass-fabricated axes found in these areas. The 'introduction' of these weight systems and the adoption in some areas of forms of writing are then seen as indications of 'the development of the processes of abstraction and rational systematic thinking, which are at the basis of complex, bureaucratic political systems'. Perhaps we should rue the day!

Sue Bridgford