Book reviews

Scientific Analysis in Archaeology and Its Interpretation. ed. Julian Henderson. *Oxford University Committee for Archaeology. Monograph no. 19. UCLA Institute of Archaeology, Archaeological Research Tools 5. Oxford 1989. ISBN 0-917956-66-4. 313pp. £16.*

This book originated from a course of lectures held at the Institute of Archaeology in Oxford in 1986. Its stated aim is to present essays on archaeological problems and to concentrate on the interpretation of analyses rather than on the analytical techniques. That said, most of the chapters do include discussion of the techniques, as well as case studies in which analysis has been applied to specific archaeological problems. The areas discussed are soil phosphate analysis, glass, ceramics and metals.

The opening chapter reviews the historical development of soil phosphate analysis in archaeology and explains in some detail the mechanisms by which phosphorus occurs in soil. Its use as a prospection tool is discussed and the different techniques assessed, with a useful appendix of recommended methods.

The chapter on glass covers an ambitiously wide field, including analytical techniques, the raw materials, trade and production in the European Bronze Age of both glass and faience, Iron Age glass working, manufacture and trade, and an analytical study of Irish glass. It is followed by three pages of appendices in closely spaced type.

Ceramics are the subject of five chapters. They touch on the application of a range of techniques to specific assemblages of ceramics from all over the world. Some of the case studies presented here are the subject of postgraduate projects. Ceramics form a major part of the finds from most excavations and can be a very fruitful source of information on trade contacts and technology as well as a framework for dating. It is debatable whether the information offered would help an archaeologist to decide what to do with his excavated postsherds, especially when three of the chapters include in their conclusions phrases like 'Despite the inconclusive nature of the chemical results . . .' and 'From the perspective of applying instrumental techniques to the investigation of commodity distribution in archaeological contexts, the study was not successful.'

Five of the chapters are devoted to metals. The chapter on early mining and smelting is written from the vantage point of excavator as well as analyst. It includes sections on excavation strategy and sampling together with an outline of the information which can be retrieved by scientific investigation of ores, slags, refractories etc. and areas where archaeological work is still much needed. The chapter on non-ferrous metallurgy deals with British, mostly prehistoric bronze. It gives case studies of problems solved by metallurgical examination, experimental replication and analysis, emphasising the need for a large analytical data base of dated pieces if anything more informative is to be gained than a description for the excavation report.

A short and fascinating section on the use of the ancient texts in interpreting the metallurgical knowledge of the ancient smiths is followed by a chapter on the iron industry in Iron Age Britain. It in fact goes beyond this and gives a clear potted guide for the non-specialist to metal properties and the advantages and disadvantages of iron versus bronze. Perhaps because of the frequently poor state of preservation of iron from early sites, it often receives less attention than the more identifiable bronze finds. This chapter outlines the metallographic and analytical information which can be gained from study of iron, and emphasises the importance of quantifying the amount of slag excavated and identifying the process it was formed by.

The final chapter is devoted to lead isotope provenancing of metals. The theory and history of the technique are outlined. The problems of re-use and mixing of metals and the overlap in isotope composition between different sources is touched on, followed by a summary of the author's work on the Mediterranean Bronze Age.

This book provides a refreshing and much needed break from the usual format of books on science and archaeology, with emphasis on the interpretation of analyses rather than on the techniques themselves. Some sections are more successful than others, but, with a wealth of detailed information, this book is good value.

S. La Niece

A History of GKN. Volume II: The Growth of a Business. 1918–1945. By Edgar Jones. *245 × 190 mm. xxxvii + 389 pp. 126 plates. ISBN 0 333 44578 3. Macmillan Academic and Professional Ltd, Basingstoke. 1990. £35.*

In the early 1980s, the industrial giant GKN commissioned Edgar Jones to write the history of the company from its origins in 1759 to the 1970s. The initial plan was for two volumes, breaking the narrative at 1918, which not only marked the end of the First World War but also saw an important shift in the strategy of the company. GKN had been created in 1902 as an integrated metal-working

company specialising in the manufacture of fastenings (screws, nuts, bolts and the like) but with very important interests in iron and steel production, metal processing and coal mining. It was, in short, a classic case of a vertically-integrated company. After the First World War, GKN began to acquire subsidiary companies at a tremendous rate and began to act increasingly as a holding company. The subsidiaries remained in the coal, metals and engineering industries, but their markets were as likely to be outside the group as within it.

Changes occurred most dramatically in 1919–20, when GKN decided that two of its main nut and bolt works had fallen into such a state of neglect that it would be cheaper to acquire new companies (F. W. Cotterill and Bayliss, Jones & Bayliss) than to modernise existing factories. Immediately thereafter GKN merged with the west-country based metal working firm of John Lysaght Ltd. These changes took place against the background of a severe inflationary boom and the estimated market value of GKN rose from approximately £6m. to something closer to £14m.

This policy of growth by merger is hell for the company historian. Not only must the decisions of the parent company be chronicled, but the histories of the new constituent parts must be worked into the narrative without any loss of clarity, direction or analytical insight. The problems for Jones might be best understood by appreciating that despite the length of this volume, he has had to hive off the whole period since 1945 into a separate, third volume. Despite the problems, Jones has produced a *tour de force*. The reader is prepared from the first for the 'digressions' into the history of the new additions to the group, but the strategic direction of the GKN board is never allowed to fade from view. Jones charts very clearly GKN's foray into Welsh coal mining, under the influence of vigorous directors who joined the board from John Lysaght, and the need to hive off these coal interests and heavy steel into separate companies outside the group in the early 1930s to protect the financial position of GKN. He is also very good in charting GKN's first steps towards multi-national status. In only one respect, but an important one none the less, is it possible to question the author's judgement. He portrays the company's performance in the interwar years as something of a triumph in adverse trading conditions. It is possible, however, to see GKN as a good example of what went wrong with British industry in the present century. Its strategic decision making was awful. It diversified into the wrong industry (coal) at the wrong time and lost much money in the process. The business was effectively saved by one core business (woodscrews) and one acquisition (Sankeys). However, the woodscrew business was starved of investment for much of the period but held a monopoly supply position. Indeed, the resources which might have gone to investment went instead to buy out potential competitors. Sankeys was not starved of investment but was acquired only indirectly (in the merger with Lysaght), so the GKN board takes little credit for its performance. GKN prospered almost despite the strategic decisions of its board. Finally, one cannot ignore the production quality of the book. It enjoys lavish illustration, sufficient length to cover the various themes in the depth they deserve and very generous footnoting. It is an extremely handsome volume.

Alan Booth

Obituaries

Dr Norman Swindells

Dr Norman Swindells was an Honorary Member of The Historical Metallurgy Society and one of the earliest members. Always an active supporter he attended most of the Annual General Meetings and Conferences. Although not a committed administrative man, he sat on Council and in 1972 was elected Chairman. His handling of Council was exemplary, always allowing members to express their opinions, yet courteously restraining unnecessary talk; he ran meetings precisely and exactly, to the agenda. His summing up was incisive, effective and acceptable; the work was well done and to time.

A few years after his Chairmanship he became President. At Conferences he greeted members warmly with a presence that helped to weld the Society together. In this he was warmly supported by his wife Marjorie until her death a few years ago.

Educated at Manchester Grammar School he went on to Cambridge where he qualified as a physical chemist and pursued his higher degree in metallurgy. Here he studied the phase relationships in certain alloy steels. His first industrial post was at Pressed Steel Company and sometime later in 1946 he moved to ICI Metals Division. After a brief spell in the Research Department he joined Production, being particularly associated with extrusion of brass and copper alloys in rod and sections. Here he learnt the technical and practical details of the extrusion process. This experience enabled him to move to McKechnie Bros. where he first exerted his authority in technical matters later becoming Chief Executive of McKechnie plc.

Whilst keenly interested in historical metallurgy, Norman had many other interests. He was a Friend of Ironbridge Gorge and a Life Member of The National Trust. Birds were his main hobby and he was an expert in bird identification: much time was spent on holidays abroad and in the Shenstone, Staffordshire area watching birds. Dedication to the history of Shenstone and local affairs led to him being the first