Book reviews

Journey to the Copper Age: archaeology in the Holy Land by T E Levy. *San Diego Museum of Man, San Diego CA, 2007, 253x202mm, 112pp, 120 mainly colour figs, index, ISBN 978-0-9378-0883-2, £18.99, p/b.*

Masters of fire: hereditary bronze casters of south India by T E Levy, A M Levy, D R Sthapathy, D S Sthapathy and D S Sthapathy. *Deutschen Bergbau-Museums, Bochum, 2008, 230x215mm, 144pp, 111 colour figs, ISBN 978-3-937203-37-9, no price stated, h/b.*

It is most appropriate to review these volumes together as Levy (and colleagues) lead us along two paths that converge in the final chapters of each volume. One path takes us to the Copper Age of the Holy Land and the other ventures further east to meet the contemporary masters of fire, otherwise known as the hereditary bronze casters of South India.

Both volumes are notable for their convenient size, accessible language and the wealth of good quality colour pictures. Although produced by different publishers it is clear there is a common style adopted in their production which we presume is the result of Levy's direction and the importance he attaches to visual imagery in the reporting of archaeology and ethnography. This is not a trivial point as much of the value of these volumes lies in their rich photographic content. This value should be recognised before more staid academic readers dismiss these volumes as glossy coffee table publications solely for the general reader. After all, archaeology is a discipline which lends itself to visual representation and it is a pity that more volumes do not recognise the value of a publication format that acknowledges and facilitates this. For this alone Levy should be praised, and in no small measure.

In *Journey to the Copper Age* Levy begins with an outline of the extensive history of the Holy Land. To some there will be plenty to quibble about, his use of terms such as Neolithic Revolution and the metal revolution will jar many as will his claim that metallurgy was the first technological revolution. However, he does not simply state this but instead attempts to qualify his use of these terms in a way that is quite unusual in books of this genre. Chapter Two gives an equally concise account of the Neolithic the Levant and draws the readers' attention to the non-metallurgical use of copper minerals as pigments and beads. The application of mineral pigments is highlighted alongside evidence that indicates that the Neolithic was a time when communities refined their relationship with fire as is evidenced through the use of domestic hearths, aspects of food and plaster production and ceramic technology. In drawing our attention to these diverse factors Levy leads us to understand that it was during the Neolithic that the conditions were set for the inception of metallurgy. This is not ground-breaking stuff but it is done in a concise and accessible manner; whilst in some ways it could be construed as an evolutionary narrative it gives the reader a wider perspective on technological development and highlights the wider context of innovation.

Chapter 3, *Life during the metal revolution*, deals with the Chalcolithic. Keen to stress the revolutionary nature of metal, Levy parallels it with other societal changes including new ways of farming, settlement organisation and emerging religious institutions. A highlight is the finding of the famous Nahal Mishmar hoard. Levy reproduces some wonderful historic photographs of Bar Adon's expedition camp, preparations for the expedition to the cave and the discovery of the hoard itself. The expedition was in part inspired by the earlier discovery of the Dead Sea scrolls and an interest in similar finds. The sense of wonderment at the unexpected discovery of the hoard in 1961 is conveyed well; it is one of the most important metallurgical discoveries in the world. The chapter continues with a discussion of these objects accompanied by some useful photographs. Issues of provenance are raised alongside the role of such prestige goods in a Chalcolithic community. Then follows an account of a National Geographic sponsored donkey caravan which crossed the Levant from Faynan in Jordan to Shiquim in Israel. The text takes on a pleasing style almost akin to that of a travel writer at this stage, an interesting approach where the details of journeying are juxtaposed with metallurgical process from copper mining to smelting. It is a fascinating account which will be of interest to HMS members

and a wider readership alike; one of us thought it the highlight of the volume.

The remainder of the book turns to issues of social inequality, the control of prestige goods and their relation to metallurgy and metal objects. Storage is highlighted as an important point and the relative storage potential of metals and food contrasted. The discussion ranges widely and the pace of the narrative seems to have an ever-increasing momentum, to the point where the reader might feel a little breathless. We are rushed through the Bronze Age and on to the Iron Age and industrialization which is dealt with in a couple of pages. This turns into a journey that takes us well beyond the Copper Age and it is at this point that the reader might wonder if such an Odyssey was what the cover promised; there is a sense that there is another much weightier tome eager to emerge from Levy's keyboard, and he struggles to contain it at points in the latter part of this volume.

If chapters 7 and 8 have a dizzying effect then chapter 9 is more sobering and a welcome inclusion with its focus on what the future holds. It looks at how ethnographic work can be used to inform much of the archaeological inference made in the preceding chapters; it is here that Levy reports his experiences with working with hereditary bronze casters in southern India. He makes use of this opportunity to undertake a reconstruction of the Nahal Mishmar twin-headed ibex mace head and in doing so this volume connects with Levy's journey in Southern India working amongst the hereditary bronze casters (see below). In summary this is a volume with much value. As a general introduction to the subject it achieves much. It is clearly aimed at the general reader yet much of the text is referenced for the interested, more scholarly, reader to pursue further. Whilst many of Levy's perspectives are congruent with mainstream literature they are not without contention and the volume might have chosen to engage with some of these debates more actively rather than simply present a coherent narrative. Nonetheless this remains a beautifully illustrated book that rests with equal comfort on a coffee table as it would on an academic's shelf.

Whilst a hint of Levy and his colleagues' work in South India is given in the concluding chapter of *Journey to the Copper Age*, the volume dedicated to the subject contains much more than a simple ethnographically-led experiment to make the ibex mace head. *Masters of Fire* presents a detailed account of the practices of the Sthapathis of Swamimalai, a patrilineal class of craftsman in the Indian state of Tamil Nadu with expertise in bronze casting. Ethnographic studies of craft production have long provided valuable insights for archaeologists researching ancient craft activities and the value of this particular case for Levy's work in the Levant is clear.

The Sthapathis are engaged in the traditional manufacturing of religious metal statuary for temples and to some extent the tourist trade. The technique of choice is the lost wax method. For religious objects, the process of casting follows carefully prescribed stages from sacred texts known as the Shilpa Shastras. That said, textual detail is not always comprehensive which leaves room for individual founders to make specific choices and this is something the authors take time to detail.

In the hereditary family-owned manufactory examined by the authors we are provided with a meticulous step-by-step account of the casting process. Though exhaustive, the account is useful but for the most part not particularly surprising. Aside from some differences in equipment and the religious embellishments accompanying many of the stages of the process, the lost wax method is typical. The more interesting technical aspects of the Sthapathis' practices, in particular the sunken furnaces and buried tuyères and moulds, could provide fascinating implications for the excavation of archaeological metalworking facilities, yet are not elaborated on by the authors. Emphasis is given to the importance of studying the bronze casters and their organisation, yet it is at times difficult to follow the individual roles of the craftsmen in the process as well as the spatial differentiation of tasks. This is one aspect of the study which we wish was clearer as it could add real detail to our understanding of both prehistoric and historic metalworking sites. Only one rather small scale plan of the manufactory is presented. Architectural detail is included as are the positions of furnaces and mortars but there is little else, for instance the discard area for mould fragments, detail of all storage areas.

Despite these criticisms (or desires for more information) the book provides a fascinating insight into the technical detail and social context of the casters. One of the most valuable portions of the text is the chapter in which the role of the 'mud cleaner' is resented. This is truly valuable stuff; this individual carefully recovers bits of metal from slag, vitrified crucible linings and the manufactory floor for remelting into ingots. This is a character who uses specific tools for scraping floors and cleaning crucibles and is not

previously reported in ethnographic or archaeological studies. The practice of scrupulously cleaning the accoutrements in the arena of metalworking to prevent the waste of metal reveals to the observer how debris can even be kept out the archaeological record whilst perhaps providing some insight to odd abrasion marks noted on some crucible fragments. This section is of considerable value and would be well served by being republished as an article so it reaches a wider audience.

The final sections of the book send us on a return journey to the Copper Age of the Holy Land. Here Levy and colleagues undertake a reconstruction of the Ibex mace head. The chapter is an expanded version of the final chapter in *Journey to the Copper Age*. Much more detail is added and it is a valuable addition to the book. However, this is not to suggest that the outcome of the project is solely an insight in to Chalcolithic Levantine practices. Much of this volume will have wide interest and has implications far beyond the case study presented. It might therefore have been better to expand the case study in the earlier volume and omit it here.

Together the two volumes present us with a wealth of archaeological, archaeometallurgical and ethnographic data. This is relayed in a very digestible form and is augmented by some stunning photographs, both contemporary and historic. The luxury of such rich imagery should not be seen as an indulgence but rather pointing to the way in which archaeology and ethnography should be reported. The authors have ambitiously aimed to contribute to our understanding of the organization of bronze casting. They attempt to provide a detailed account of lost wax casting, conduct experiments relating this to archaeological material from the 5th-4th millennium BC Levant, discuss the role of metal recycling and comment on the fate of traditional crafts. To a large degree the authors have been successful in this, but the reader is left wanting more. Perhaps this is the result of academics reviewing something intended for a more general readership but it does raise the issue that the book frustrates and impresses in almost equal measure. Whilst the production quality and effort to tell a story in pictures is impressive, the text does have a surprising number of errors as well as a tendency in places to be somewhat repetitive. However, such criticisms are minor and should not serve to dissuade the reader from reaching for these volumes.

Overall, reviewing these books has been a pleasure. Their sum is greater than the parts and the clear relation between them is a recommendation for them to be read simultaneously. There are omissions and points to be debated but there is also much value in this and it is hoped that fuller accounts, especially of the ethnographic and experimental work, will be forthcoming.

Roger C P Doonan and Jessica Slater

Saugus Iron Works. The Roland W Robbins Excavations, 1948-1953 edited by William A Griswold and Donald W Linebaugh, *US National Park Service, 2011, 285x223mm, 440pp, 174 figs, ISBN 978-0-615-39084-0, h/b, $40.*

Saugus Iron Works was established in 1646 by the Massachusetts Bay Colony: the 'Company of Undertakers of the Iron Works in New England' was required to construct an integrated ironworks as a condition of its 21-year monopoly on iron production. The Saugus complex consisted of a blast furnace, forge and slitting mill. Workers were imported from England, with some friction between these 'coarse and unruly' ironworkers and the 'staunchly Puritan' Colonists. The ironworks reached its peak under the management of John Gifford in the 1650s, when it was producing over 250 tons of iron and iron goods per year. Over-investment resulted in debt, and despite new ownership in the 1660s the site never fully recovered; it was abandoned in 1670.

Saugus is an icon in the story of American historic places preservation. The 'Iron Works House' became the focus of attention when it came onto the market in 1911; after various vicissitudes (including some imaginative 'restoration') the First Iron Works Association (FIWA) was formed in 1943 to take it on. The Bethlehem Steel Corporation was approached for funding, but vice-president Quincy Bent became more excited by the slag heap and the below-ground potential of the site. As a result the FIWA formed a Reconstruction Committee in 1947, and in 1948 the FIWA president, J Sanger Attwill, appointed Roland W Robbins to undertake a programme of excavation.

Robbins had no vocational or academic training in archaeology, and he was snubbed by a later generation of American historical archaeologists who characterised his approach as crude, clumsy and inappropriate. However Robbins' methodology and recording systems were robust by the standards of the day.

Archaeology at Saugus did not always proceed smoothly. Some of Robbins' difficulties were caused by the enthusiasm of Bent, Attwill and others for reconstruction without waiting for archaeological results. Land ownership was another issue – the FIWA did not own the entire site, and there were several delays whilst permissions were sought for access on adjoining plots (which was not always forthcoming). In some cases there was barely enough time to excavate and vital information was not recorded. The thoroughness of Robbins' excavations were also constrained by the FIWA's requirement that he should locate and expose 'only the major features' of the ironworks; consequently ancillary but significant structures such as a charcoal warehouse and another forge were only briefly investigated.

Gradually these and other frustrations took their toll on Robbins. Attwill repeatedly failed to pay Robbins or his workers on time. Bent regarded himself as the main driver of the FIWA project, and saw Robbins as a mere 'technician'. Robbins felt that the architects were not up to the job. Increasingly stressed by the workload and personality clashes, Robbins resigned in the summer of 1953; no final report on the archaeological work was ever produced.

This lavishly-produced book attempts to provide that report, as well as setting the work in the context of the reconstruction programme and the political battles of the time. The book is largely illustrated with contemporary black-and-white photographs by the project photographer Richard Merrill; these are firmly within the post-war 'Picture Post' tradition, and some are truly excellent images.

The book opens with an overview of European ironworking in the 17th century, and Chapter 2 gives the history of the Saugus site using the extensive contemporary documentation. Chapter 3 provides the background to the establishment of the FIWA and the reconstruction project; Robbins' wider contribution to archaeology is considered in Chapter 4. Chapters 5-9 provide a detailed account of the excavations, taken from Robbins' extensive field notes, journals and drawings. Chapters 10 and 11 examine conservation and curatorial work on the artefacts, which involved some quite innovative scientific approaches. The role of Robbins as an educator and researcher is examined in Chapter 12. Chapter 13 describes and evaluates the reconstruction – both in terms of its faithfulness to the known archaeology, and as a representation of a complex of this type and date. Finally, Chapter 14 considers the history of the site after Robbins' departure. Most of the financial support for the FIWA came from the American Iron and Steel Institute; when this ceased the Saugus site was taken over by the US National Parks Service (NPS) in 1969. Relations between Robbins and the NPS were strained, and deteriorated in the 1970s.

This book is an admirable account of a very interesting episode, but there are some problems. The opening chapter is based on a limited number of quite dated sources. Illustration using contemporary photographs and copies of field notes is appealing and stylish, but modern drawings are really needed to help the reader understand the archaeology better. There is no site plan, and only a limited attempt to explain broader geological and topographical contexts. Perhaps most seriously, there is not enough critical reflection on the results of the excavation – a modern archaeological perspective is desperately lacking, in particular relating these pioneering excavations to more recent work both in the US and elsewhere.

In short, the book falls between two stools. On one hand it is trying to provide a report on Robbins' excavations, and on the other it is trying to provide an overview of the project and its personalities. It is at its weakest when explaining the archaeology and putting it in the context of current research into the 17th century iron industry. It is much stronger when looking at the fascinating story of Robbins' work and his numerous battles with other individuals and organisations. Nevertheless, with high production values and a compelling narrative about a famous early example of industrial archaeology and heritage management, this volume is well worth its $40.

Paul Belford