

Eriksen, B. V., Ed. (2010). *Lithic technology in metal using societies. Proceedings of a UISPP Workshop, Lisbon, September 2006*. Moesgaard, Jutland Archaeological Society Publications Volume 67.

Graeme Warren, UCD School of Archaeology.

University College Dublin, Belfield, Dublin 4. IRELAND.

Graeme.Warren@ucd.ie

This handsomely produced volume presents 17 papers resulting from a UISPP workshop in 2006 which aimed to 'gather together lithic researchers working on pre- and protohistoric site and inventories in which lithic technology was of alleged subordinate importance to metal' (p7). The focus is primarily on the initial period of transition to metal use – with Bronze Age case studies dominating. It is unfortunate that little attempt is made to examine the longevity of lithic manufacture use and discard into the historic period, as this would provide valuable long term perspectives on the interesting interrelationships between stone and metal developed in the varied case studies. The main, but not exclusive, emphasis is on chipped/flaked stone – a fairly conventional definition of lithics. We will return to consider this focus below. Many researchers follow Eriksen's foreword in describing lithics of the Bronze Age as somewhat neglected, or the 'Cinderella' of lithic research (van Gijn, p. 45). One of the strengths of this volume is the demonstration that small and apparently underwhelming assemblages can provide important information.

The relationship between stone and metal technologies has, of course, been complicated by notions of progress and efficiency, with easy assumptions that the arrival of new metal technologies is an advance that leaves older routines obsolete. The archaeological record clearly demonstrates that reality is and was somewhat more complex, and the case studies presented here show the diverse ways in which stone and metal were linked at different times. Two broad themes are particularly apparent in these studies: how stone and metal influenced each other in terms of manufacture, and how the two materials were circulated .

Stone and metal objects clearly met during routines of manufacture. On the one hand, and often neglected in our accounts, are the stone tools that were required in order to manufacture metal objects (Armbruster; Freudenberg). These objects, including cushion stones, anvils, hammers, polishers and touch stones, as well as moulds, represent both continuity and change to traditions of coarse/polished stone tool manufacture. These artefacts have often been neglected and can present challenges to fieldworkers. For example, Mary Cahill has recently argued that '(T)he perceived absence in Ireland of stone tools which might relate to fine metalworking is probably related to a lack of study in this area rather than a lack of material evidence and also, perhaps, to the difficulty of dating uncontexted or unassociated finds' (Cahill 2009, 9). She describes four small stone pebbles that were recovered in a hoard with tin torcs from Kilsallagh, Co. Longford and that have XRF evidence of tin on their surfaces,

noting that 'if they had been encountered on their own in the peat or in any other circumstance, they might very well have been ignored' (ibid.).

Frieman offers a broader theoretical examination of skeuomorphs, arguing that these are likely to arise precisely at times that different material and technical traditions meet. She cites (p. 39) and sadly does not illustrate, a remarkable-sounding artefact from Rethal in the Ardennes; a bronze arrowhead manufactured from a bivalve mould, the mould having been formed from a flint barbed and tanged arrowhead : 'a conscious choice appears to have been made to make this metal arrowhead as much like flint as possible, perhaps so that it could embody the same meanings or social roles...' (p. 39). Similar themes are addressed by Honegger and de Montmullin's review of flint daggers in the Late Neolithic and early Chalcolithic in the Northern Alps. Here they argue that flint daggers lose their status to copper daggers over time and that a 'consequence of this is the transfer of certain metallurgical techniques to the sphere of stone working' (p. 140): specifically arguing that the increase in recycling and intensive bifacial retouch of flint draw upon the new ways of working metal. The emphasis here is not just on final forms, but on the processes by which objects are created and the fluidity of routines across different materials at this time. The use of copper punches in manufacturing stone tools is also documented in some regions (Raczek, p. 234) and creates new ways of working stone

We must beware assuming that the appearance of metals necessarily led to a replacement of lithics as a key symbolic media. Metals and lithics also appear to have moved along similar networks linking prehistoric communities (many contributors) and it appears that high status stone tools and high status metal objects were in circulation at the same times. Druart reviews the changing character of Mycenaean arrowhead production, arguing that 'the symbolic and prestigious character of these stone arrowheads seems to be reinforced, as if they were born from this confrontation with metal. The limitation of the stone arrowheads to the symbolic sphere could then be explained by the progressive usurpation of the utilitarian function by bronze arrowheads' (p. 154). The encounter of the different materials appears to have led to very varied outcomes. Van Gijn argues that exotic flint, obtained from great distances was 'a viable alternative to bronze for the maintenance of the long distance social networks that seem to have been so important for Bronze Age society' (p. 58). Again here the key appears to be that stone, as manifest in lithic technologies, and metal are mutually transforming and that we cannot understand one without considering the other.

As noted above, many of the assemblages discussed in this volume are comparatively small and prosaic in character. The value of good samples and rigorous analysis is well demonstrated. In general the most successful approaches are detailed technological analyses of the chaîne opératoire, backed up by refitting (e.g. Gilead et al.) and/or functional analyses (e.g. van Gijn; Bronowicki & Masojć). These models demonstrate clearly the dangers of reliance on typological and morphological analyses for understanding the subtleties of our data.

Given the geographical scope of the volume it is inevitable that some areas are covered in more depth than others. The papers on India (Raczek), the Near East (Rosen; Gilead et al.) and Cambodia (Haidle et al.) are interesting, but in isolation, hard to compare to the regions with more in depth discussion especially given the broad differentiations in technical routines between these areas. One of the best

represented regions is northern Europe. Here a number of papers overlap, and offer an important regional perspective (van Gijn; Högberg; Eriksen; Bronowicki & Masojć). Stone technologies in this region can be caricatured as being characterised by two traditions: a utilitarian, or mundane, technology associated with settlement, and high status circulation of objects. Van Gijn reviews this in Holland, noting that the recycling of fragments of sickles and daggers cuts across these two networks and that the mundane flint use includes complex routines of curation and deposition. Högberg's focus on Southern Scandinavia identifies significant hybrids between elaborate blade knife manufacture and domestic evidence. Variation with regions, as well as the importance of broad trends is attested by papers examining Britain (Ballin) and Greece (Kourtessi- Philippakis); the former stressing that different raw material regimes may be important. The collection of papers on Greece is especially interesting: Kourtessi- Philippakis (p. 171) note that there is little tradition of lithic research in Greece and the four papers on this region include two papers by archaeologists based in Greece (Karimali ; Kourtessi- Philippakis) one in France (Druart) and one in Scandinavia (Sørensen). This diversity of research traditions is evident in the papers and is in some contrast to the northern European papers which are less diverse in terms of geographical background and, possibly as a consequence, more consistent in terms of the models presented.

The volume is well edited and structured. An overall thematic introduction or conclusion would have been helpful, allowing for critical overview of the papers and the identification of key problems moving forward. The slight geographical patchiness is an almost inevitable outcome of conference, but suggests that focused regional studies, in a comparative framework, would be a very important area for future development. The main emphasis on chipped stone is unsurprising, but a greater focus on coarse, ground and polished stone tools in future research would be interesting. This would, of course, incorporate a focus on the use of stone tools in the manufacture of metal objects, but also the significant changes in long important artefact classes such as the polished stone axe at this time, as well as the use of stone for personal adornment: stone beads (and related materials such as jet and amber) continue in use through the transition to metal technologies but their character sees significant changes.

Gabriel Cooney (2009) has recently argued that for the Neolithic communities of western Britain and Ireland stone was not just a useful material for manufacturing varied kinds of tools, but a 'focal material resource', a central symbolic reference point that structured behaviour much more widely: in the manufacture of buildings, monuments, artefacts, movement around the landscape – in all aspects of life. This implies that if we are to understand the impact of how and why metal and lithic technology co-existed for varied periods of time, we must consider stone more broadly. This volume is an important step towards this task. The challenge for further research in this area is to continue to think beyond the usual archaeological boundaries.

#### **References cited:**

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