



Review

Nils Anfinset

METAL, NOMADS AND CULTURE CONTACT: THE MIDDLE EAST AND NORTH AFRICA

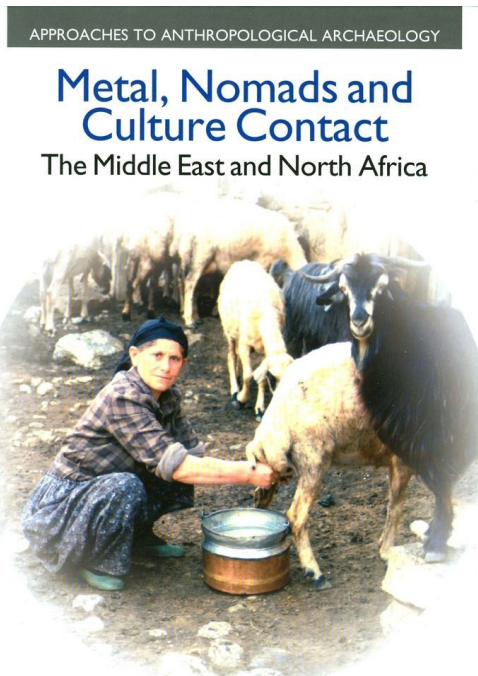
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Abstract

The last decade has seen publication of a flurry of important studies on the earliest metallurgy in the southern Levant, between ca. 4200-4000 and ca. 3500 cal BCE. The abundance of new data has generated much debate on the social roles of copper objects at this time. The volume reviewed here is the first to set these finds in much broader context by linking the sequence to contemporary developments in northern Levant, Sinai, Egypt and Nubia. The author suggests that the advent of specialized pastoral nomads is directly connected to the initial dispersion of metal ores and metal objects throughout the broader region.

The discovery in 1961 of the Nahal Mishmar (Cave of the Treasure) trove of copper alloy castings created a sensation because both the artistic sophistication, the technique (lost-wax casting) and the compositions (including alloys with antimony, arsenic and nickel) were unprecedented for the period (the mid-fourth millennium cal BCE, by most reckonings). Fifty years later, Nahal Mishmar is still not fully understood, but the archaeological and archaeometallurgical research that was stimulated by this find does allow us to situate this corpus of castings squarely within the regional development of metallurgy in the southern Levant. In the 1970's and 1980's Beno Rothenberg led teams that explored the Timna copper district at the head of the Gulf of Aqaba. These expeditions had a huge impact on the emergence of archaeo-



Nils Anfinset

metallurgy, as many of the founding figures in this discipline were or are alumni of the Timna project. From the 1980's a team from the Deutsches Bergbau Museum in Bochum, led by Gerd Weisgerber and Andreas Hauptmann, made technically superb studies of mining and metallurgy in the copper deposits of Wadi Feynan. Archaeological excavations during the 1980's in the Chalcolithic sites of the Beersheba area, southwest of Nahal Mishmar, have also turned up much evidence of the use and the smelting of copper in the Chalcolithic. The excavations of Thomas Levy and colleagues at Shiqnim are particularly important, yielding unequivocal evidence of smelting, as are the remains from Abu Matar, excavated from the mid 1950's by Perrot, but not subjected to full archaeometallurgical examination (by Aaron Shugar and Ian

Golden) until the 1990's.

The consensus that has emerged from work in field and laboratory is that in the Beersheba region, southwest of the Dead Sea, the crucible smelting of copper began between 4200 and 4000 cal BCE. The textures and lead isotopic ratios of the copper ores indicate that most were mined at Feynan (150-200 km from the Beersheba sites). The relatively pure copper produced was made into a limited range of objects, mostly awls, chisels and axes. But among the later remains from the Beersheba are a few cast mace-heads and standards similar to those from the Nahal Mishmar trove, and sundry lost-wax castings alloyed with arsenic and antimony. As there are no ores in the region that could have produced these complex alloys, they appear to have been imported. The source(s) are still unknown - Syria, Anatolia, Armenia and even Azerbaijan have been suggested. The Nahal Mishmar metals are now seen as a late expression of Chalcolithic metallurgy, and interpreted as either a communal burial site or as the contents of a shrine that were hastily hidden and never recovered. With the start of the Early Bronze Age in the southern Levant, ca. 3500 BCE, the production of the elaborate lost-wax objects ceased and copper production in the Beersheba area seems to have ceased.

Nils Anfinset's book *Metals, Nomads and Culture Contact* is the first to place these findings in much wider context. To this point almost all discussion of external contacts from this region has looked to the north. Anfinset directs our attention instead to Egypt. He is particularly interested in the means by which first metals, and then metallurgy, came to Egypt, and thence to Nubia. The central argument of the book is that pastoral nomads were the main agents for the transmission of metallic minerals and metal objects from the southern Levant to Egypt and Nubia. He traces a trajectory in which the development of specialized pastoralism in both the southern Levant and Nubia before 4000 BCE allowed transhumant pastoralists to supply all kinds of scarce goods desired by the agriculturalists of the southern Levant and the Nile valley - turquoise from Sinai, copper ores from Feynan and perhaps Timna, ivory and gold from Nubia, obsidian from Anatolia and perhaps Ethiopia, and even lapis lazuli, which is generally assumed to have come from Afghanistan via Mesopotamia. By 3000 BCE, he argues, the emerging complex societies of the Nile Valley became the main magnet for these exotic materials, and also for non-perishable agricultural products of the Levant, such as dried figs, olive oil, wine and raisins. He sees transhumant pastoralists as the agents responsible for the initial distribution of most or all of these materials.

It requires a scholar with unusual range to undertake so extensive a project. This book derives from the doctoral thesis completed by Anfinset in 2005 at the University of Bergen under the direction of Randi Haaland, the foremost authority on the development of pastoralism in northeast Africa. Anfinset has also undertaken ethnoarchaeological studies of contemporary

Bedouin pastoralists in Jordan, and also of village-level production and trade of copper in Nepal. His command of the literature on pastoralists, archaeometallurgy, and of the archaeology of Predynastic Egypt and the Levant is most impressive; the references cited occupy twenty-six pages of single spaced small type. The origins of the book as a doctoral thesis are however evident in the paucity and poor quality of the computer-created maps and figures. Most of the latter are basic Excel-generated bar graphs showing the relative abundance of various types of metal artifacts in the regions and periods discussed. These would have been more intelligible as tables. I often wanted to see illustrations of representative examples of artifacts, especially when comparisons were made between the Levant, Egypt and Nubia, but none are provided.

The second chapter of the book is a very brief canter through a wide expanse of archaeological theory - another clear indication that this book began as a doctoral thesis. The likely readers of this book will have little need for back-of-an-envelope introductions to world systems theory, middle-range societies or material culture, so the series editor should have cut this chapter. The third and fourth chapters are where the author gets down to serious work. These are summaries of the archaeological sequences and major developments in the southern Levant and northeast Africa during the fifth and fourth millennia BCE. These provide the contexts for the arguments to follow, and I was glad to have so clear a guide through the chronological minefield of the southern Levantine Neolithic, Chalcolithic and Bronze Ages, in which it often seems that every archaeologist is working with periods of his or her own definition.

The fifth chapter begins with an excellent discussion of the literature on modern pastoralists in Eurasia and Africa, featuring especially the work of Khazanov, Barth and Barfield. Anfinset then turns to the vexed question of identifying pastoralists in the archaeological record. He argues convincingly that specialized pastoralism did not exist in the Near East until strains of sheep and goats were bred that produced wool and milk, a development that he places in the 6th-5th millennium BCE. There is a very interesting discussion (pp.100-101) of the apparent absence of large pack animals in the Levant. Sheep and goats can be pressed into service as pack animals, but an alternative possibility is that donkeys were used. Since donkeys were rarely eaten, they are under-represented in archaeological faunal assemblages. (Readers of this journal will know that the same problem applies with camels). In the Sahara and Nubia pastoralism took a different turn from that in the Levant, being based upon cattle rather than sheep/goat, but with specialized pastoralism only possible once agricultural communities were established (with Near Eastern cultigens) in the Nile Valley. With both cattle and donkeys as pack animals, Saharan and Nubian pastoralists were, Anfinset argues, able to engage in bulk transport to and from the settled fringes of the Nile.

His grasp of the archaeometallurgy of the southern Levant is excellent. Although his chapter was written before the recent synthesis by Jonathan Golden¹, the two treatments agree on almost all significant points. His argument that the lost-wax castings were imported from far away (pp. 186-187) is however mistaken; petrographic analysis of the ceramic cores in a sample of 75 cast objects from Nahal Mishmar and several Beersheba sites shows that almost all are from geological formations in the southern Levant.² The metals were imported, but the pieces were locally cast. Anfinset is however less interested than Golden in Nahal Mishmar, focusing instead on other issues. The first of these is that many of the ores from the Beersheba sites derive from Feynan (150-200 km away), and the second is the relative timing and uses of the earliest metals in the southern Levant, Egypt and Nubia. Both of these, in his account, reflect the role of specialized pastoralists.

Unfortunately the state of development of archaeometallurgy in Egypt and Nubia is primitive when compared to that in the southern Levant. The scientific techniques employed in the latter region - metallography, chemical and mineralogical analysis, lead isotope ratios - have barely begun to be applied to the record of mining and metallurgy in Egypt or Nubia. Nor has there been significant field excavation of metallurgical production sites (whether early or late) in recent decades. As far as archaeometallurgy is concerned, only south-east Asia is less developed than north-east Africa. Given the vast amounts of money and labor that has been invested over the last century and a half in the archaeology of Egypt and Nubia, it is astonishing that we still know so little about the origins and development of mining and metallurgy in either region.

Given the lack of scientific data, Anfinset's treatment of early metals in these regions is based upon comparison of the types of copper objects and copper minerals in the three areas. He has done an excellent job of sifting the literature for sparse nuggets of information, but his analysis of the chronology is hindered by the fact that radiometric dates are still relatively scarce for the Egyptian Predynastic.

He notes that in lower Egypt copper minerals (mostly malachite) are frequently found in sites of the Maadi period (ca. 3750-3200 BCE). One piece has been linked chemically to Feynan, but the sources of the others are unknown. (There are no copper deposits in lower Egypt itself). Nearly one hundred small copper objects, among which awls are most numerous, have been found. These are mostly in habitation contexts, rarely in graves. Others have pointed out that there are numerous indications of southern Levantine imports, such as pottery, at Maadi and contemporary sites, so Anfinset reasonably suggests that copper and malachite have been among the commodities brought from the Levant to lower Egypt by pastoralists in the course of their migrations. No lost wax castings or exotic copper alloys like those of Nahal Mishmar have yet been noted in Egypt.

In middle Egypt copper minerals and copper objects are very rare indeed in contexts contemporary with the earliest metallurgy in the southern Levant. Anfinset finds only four copper artifacts from the Badarian (ca. 4500-3800 BCE) and only five from Naqada I (3800-3650 BCE). Since no archaeometallurgical analysis has been done we do not know whether these are native or smelted copper, nor do we know their region of origin. More than 200 copper objects are however known from Naqada II (3650-3300 BCE), which is contemporary with the terminal Chacolithic and the earliest EB I in the southern Levant. There is no evidence at all of the smelting of copper on the middle Nile in these periods. About a quarter of the metal objects are awls, very similar to contemporary examples from the southern Levant. Naqada II has also produced objects of silver and lapis lazuli, both certainly imported from Eurasia, and both gold and copper minerals, sources unknown. The absence of lead isotopic analyses of these materials is deeply frustrating, particularly in light of loose speculation that the earliest gold in the southern Levant (from Nahal Qanah, early 4th millennium BCE) is of Egyptian origin.³

Anfinset's compilation of data from Nubia shows that copper appears later still in this region, dating to the Terminal A-Group period (3100-2900 BCE). Almost all finds are from burials, and again awls are the most common category. Awls are often associated with adult female burials, often placed with stone palettes near the face (p.156). The southernmost A-Group find of a copper artifact is at Kerma. Gold is present but rare; silver is absent, and there are no objects cast by the lost-wax process. There is no evidence for metallurgy in Nubia before the Fourth Dynasty, but absence of evidence is not necessarily evidence of absence. Anfinset's frustration with the lack of the most basic archaeometallurgical data for Nubia led him to commission chemical and lead isotopic analyses of three A-Group artifacts, all of which proved to be nearly pure copper, but with different isotopic ratios (p.164). Interpretation of these must await the completion of an adequate isotopic survey of potential Egyptian and Sudanese copper sources.

In the seventh and eighth chapters, Anfinset argues that these patterns are best understood as a regional system in which the agricultural populations of the southern Levant and lower Egypt were connected by transhumant specialized pastoralists, who supplied each region with products that lay beyond their reach. These included copper minerals. With the onset of copper metallurgy in the southern Levant, metal objects and minerals were carried to Egypt. In the absence of relevant evidence, Anfinset sensibly refrains from speculation about the beginning of smelting in lower Egypt.

He argues (pp. 176-180) that by Naqada II the middle Nile had become the major magnet in the entire region for all sorts of exotic goods. From both the southern Levant and Sinai, wool, copper, silver, turquoise, lapis lazuli, olive oil and wine passed to

lower Egypt, and thence upriver. From Nubia came, at minimum, gold and ivory. The earliest copper in Nubia appears, he suggests, to have been traded on from the middle Nile during the Terminal A-Group. From 3000 BCE, he thinks that the emerging states of the middle Nile turned increasingly to direct procurement of exotic goods like gold and copper, and so the role of pastoralists in the supply chain for exotic materials was greatly diminished.

In summary, this is an impressive attempt to integrate archaeological data across the boundaries of the usual geographic and topical areas of specialization. Given the great range of his argument and the gaps in the available data, his arguments for the

role of specialized pastoralists in the spread of metals are not conclusive, but they do clearly identify priorities for future research. Although he does not refer to it, there is a parallel interest emerging in central Asia on the role of horse pastoralists in the transmission of copper metals (and copper metallurgy) across the steppes from Lake Baikal to China.⁴ His comparison of the differences between pastoralists in Nubia and in the southern Levant has proved equally prescient.⁵ This book clearly shows the potential relevance of archaeometallurgy to the study of ancient Egyptian interconnections, and I hope that it will stimulate research on this topic.

Notes

¹ Jonathan Golden, "New Light on the Development of Chalcolithic Metal Technology in the Southern Levant", *Journal of World Prehistory* 22 (2009):283-300.

² Yuval Goren, "The Location of Specialized Copper Production by the Lost Wax Technique in the Chalcolithic Southern Levant", *Geoarchaeology* 23(2008):374-397.

³ Avi Gopher and Tsvika Tsuk, *Ancient Gold: Rare Finds from the Nahal Qanah Cave* (Jerusalem: Israel Museum, 1991).

⁴ Katheryn M. Linduff and Jianjun Mei, Metallurgy in Ancient eastern Asia: Retrospect and Prospect. *Journal of World Prehistory* 22 (2009):265-281.

⁵ For a much more detailed comparison of the differences between African and Near eastern pastoralists, and on the necessary connection between specialized pastoralists and agriculturalists, see Veerle Linseele, "Did Specialized Pastoralism Develop Differently in Africa Than in the Near East? An Example from the West African Sahel." *Journal of World Prehistory* 23(2010):43-77.