POSTGRADUATE RESEARCH

Abstracts of Recently-Awarded Ph.D. Theses

K. Lambrianides. *The early Bronze Age communities of Lesbos and Altinova: exploring the origin and nature of settlement, culture and exchange on the Aegean coast of western Anatolia in the 4th and 3rd Millennia BC.* Ph.D.

In this thesis I examine the archaeological and modern interpretations concerned with the origin of settlement and socio-cultural change in the east Aegean and west Anatolia during the Late Chalcolithic and Early Bronze Age, *c.*5000-2400 BC. The prehistory of this region is complicated by its physical proximity and ideological involvement with the Aegean Bronze Age, and its symbolic role in the epic discourse of European civilization.

Origin, culture, exchange and the construction of human identity are central themes of the study (Chapter 1). These themes are examined with reference to the archaeological questions of colonization and settlement in early Bronze Age west Anatolia (Chapter 2), and on the island of Lesbos and its mainland neighbours at Altinova (Chapter 3).

The spatial and temporal frameworks of the study (pottery zones, ceramic provinces, and relative chronology) are based on the great ceramic traditions of west Anatolia: the Neolithic-Early Chalcolithic and Late Chalcolithic-Early Bronze Age (Chapter 2). The cultural sequence on the Aegean coast of Anatolia suggests that there was a long period of local development, *c.*5000-3000 BC, during which this pottery zone was in contact with diverse cultural groups and influences from the Balkans, Greece, the Aegean islands and inland Anatolia from at least the Neolithic onward, culminating in the emergence of the unique new culture of Troy and Thermi on Lesbos. By the time of Thermi, there is widespread settlement on Lesbos and on the mainland opposite (Chapter 3). The pattern of coastal and inland sites on Lesbos suggests that maritime and agricultural activities were of equal importance at the time of Thermi.

Different aspects of material culture (pottery, metal, figurines) tend to travel separately from each other, creating different zones of distribution, participating in different types of exchange and forming diverse social relations (Chapter 4). Early Bronze Age pottery zones are compact, perhaps reflecting close kiln realtions; metal objects form much wider zones of distribution and reflect exchange relations concerned with Early Bronze Age wealth and status strategies; female figurines reflect fluctuating diachronic attitudes and values attached to women; the evidence in total suggests that material culture does not travel as an ethnic unit and that a unilineal approach to the question of origin is doomed to failure.

M.L. Pena Chocarro. *Prehistoric Agriculture in southern Spain during the Neolithic and the Bronze Age: the application of ethnographic models.* Ph.D.

This study focuses on the plant remains from the Neolithic Cueva de los Murcielagos (Zuheros, Cordoba), and the Bronze Age site of Penalosa (Banos de la Encina, Jaen). The main aim of this research is to understand the patterns of plant exploitation during prehistoric times in southern Spain.

A review of the current state of research into prehistoric agriculture in Spain is presented. Methodology is discussed with particular emphasis on the retrieval of both

archaeobotanical and ethnographic samples. A major part is the ethnographic study of present-day cultivation of glume-wheats, einkorn, emmer and spelt. This study has allowed the recovery of a great amount of information on fast disappearing agricultural practices.

As the archaeological plant remains studied were made up of naked-wheat species and barley, data has been compared to other current interpretative models for naked wheats. Statistical analyses have been used to determine the variation among samples.

Finally, plant remains from both sites are interpreted and compared to other comtemporaneous sites.

Michael Still. *Roman Lead Sealings.* Ph.D.

This thesis is based on a catalogue of c.1800 records, covering over 2000 examples of Roman lead sealings, many previously unpublished. The catalogue is provided with indices of inscriptions and of epigraphic designs, and subsidiary indices of places, military units, private individuals and emperors mentioned on the sealings.

The main part of the thesis commences with a history of the use of lead sealings outside of the Roman period, which is followed by a new typology (the first since *c.*1900), which puts special emphasis on the use of form as a guide to dating.

The next group of chapters examine the evidence for use of the different categories of sealings, i.e. Imperial, Official, Taxation, Provincial, Civic, Millitary and Miscellaneous. This includes evidence from impressions, form, texture of reverse, association with findspot and any literary references which may help. The next chapter compares distances travelled by similar sealings and looks at the widespread distribution of identical sealings of which the origin is unknown.

The first statistical chapter covers imperial sealings. These can be assigned to certain periods and can thus be subjected to the type of analysis usually reserved for coins. The second statistical chapter looks at the division of categories of sealings within each province. The sealings in each category within each province are calculated as percentages of the provincial total, and are then compared with an adjusted percentage for that category in the whole of the empire.

The final chapter is based on the iconography found in the impressions on the sealings. This includes the styles of imperial portraits, deities, animals, inanimate objects, designs which may come from outside of the empire, similar impressions on other items, epigraphic styles and possible examples of matrices.

A.S. Hobley. *An Examination of Roman bronze coin distribution in the Western Empire AD 81-192.* Ph.D.

From AD 81-192 almost all bronze coinage circulating in the western Roman Empire was minted in Rome. This thesis examines, in some detail, the distribution by date and reverse type of coins. The coins come from excavations and collections and comprise those from these sources identified by *Roman Imperial Coinage* numbers.

The volume of production is shown to be variable, with an exceptionally large production under Nerva. The change in the ratio of the different denominations is examined, and the reign of Trajan pinpointed as the start of the rise of the *sestertius* as

the main bronze denomination.

The supply to each province by reign is examined, and the provinces are seen to fall into two groups, civilian and military, the supply to the military areas falling over time. There are supply peaks in several provinces, especially in the Germanies in the 80s and 90s AD. Britain has three particular peaks in AD 86, 87 and 155. The volume of coins sent to the province in these years is enormous compared with that supplied to other areas in their periods of high supply.

The coins found in the provinces of Britain, the Germanies, Gaul, Belgica, Raetia, Pannonia and Italy are examined, and the differing circulation patterns identified. It appears that the coins do not travel very far once put into circulation, and that the distribution by date, denomination, and reverse type is very uneven, each area having its own pattern.

Individual sites also have their own patterns, which are largely a reflection of the provincial pattern. Hoards are also examined, and the pattern of coinage in them bears little relation to the provinces they are found in, thus demonstrating a high degree of selection for the hoards.

S. Srinivasan. *The enigma of the dancing Pancha-Loha (Five-metal) icons: archaeometallurgical and art historical investigations of South Indian bronzes.* Ph.D.

The problems with dating South Indian bronze images, which are ranked by scholars and art connoiseurs as amongst the most important and prolific artistic expressions of the subcontinent, are discussed. The usefulness of technical investigations (such as compositional analyses and lead isotope analyses) in better contextualising the bronzes and understanding the history of technology is argued. Thus over 125 artefacts were sampled and analysed for major, minor, and trace elements by spectro-chemical analyses (such as ICP-OES) and 60 for lead isotope ratios (using TIMS) to give a significant number of analyses to compare trends. The art historical criteria for dating South Indian bronzes are explored and a chronological framework for stylistically dating the bronzes is developed, based on a wide study of published material and a visual comparison of bronzes sampled with published photographs. Then the archaeometallurgical evidence of compositional and lead isotope analysis is compared with the stylistic evidence to corroborate, modify or revise existing dates. It is found that technical studies help to ratify previously identified stylistic groups, to increase the understanding of the attributions of specific examples of South Indian statuary and thus the uncertain attributions of over half the sampled collection have been revised.

Comparisons between slags, ores, and artefacts from ancient minig sites in South India have also been made using EPMA analysis, to explore the possible sources of metal along with lead isotope analysis. Ethnographic studies of continuing metalworking traditions in South India are also reported, which were undertaken to better understand metallurgical features of ancient bronzes and high tin bronzes as compared to recent ones. Thus, this study has also in the process uncovered new data on the history of metallurgy of the region.