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ONGOING AND RECENTLY PUBLISHED DOCTORAL THESES AT THE STOCKHOLM UNIVERSITY ARCHAEOLOGICAL RESEARCH LABORATORY

Research at the Archaeological Research Laboratory over the last years has focused on three main themes: A. Ancient metallurgy and technology. B. Diet and nutrition in ancient times. C. Settlement and settlement structure in central Svealand. Most of the doctoral theses are produced within the framework of these themes:

Theme A. Ancient metallurgy and technology

In 1991, Gustaf Trotzig published his thesis *Vikingatida gravkärl av koppar och kopparlegeringar från Birka och Gotland. Tillverkning, användning och sociala förutsättningar* based on his studies "Gefässe aus Kupfer und seine Legierungen", in *Birka II:1* (1984) and *Craftmanship and Function. A study of metal vessels found in Viking-Age tombs on the island of Gotland* (The Museum of National Antiquities, Stockholm. Monographs 1) (1991). In 1992, Helena Forshell published her thesis *The Inception of Copper-mining in Falun. Relation between element composition in copper artifacts, mining and manufacturing technology and historic development with particular emphasis on copper from the Falu mine*. An ongoing thesis is Johan Anund's study of the technology of copper casting in medieval times. His subject matter is a foundry discovered during archaeological excavations in Uppsala as well as a bell-foundry complete with bell-pit at present being excavated at Vendel Church in northern Uppland. Another project within theme A is the study of weights and balances from Sweden by Dr Erik Sperber. In this study, which now is almost complete, Dr Sperber has been able to reconstruct the original weights of corroded weight-fragments, and also to prove that the weight-system used in Sweden in the Viking Age originally emanated from Islam. A quite novel aspect of stone-carving, concentrating on Viking-Age rune-stones, is the subject of a study by Henry Freij who by detailed measurements with a computer-directed laser scanner can discern the hands of the actual engravers at work. Two studies in textile archaeology are in progress: Brita Stenberg-Tyrefors is examining the spinning qualities of the textiles found in medieval Lödöse, and Anita Malmius is investigating textiles from

Vendel and Valsgärde. Finally, Lars Henricson is working on ancient glass technology with special reference to the glass material found on the settlement of Helgö, Lake Mälaren.

Theme B. Diet and nutrition in ancient times

This is the subject of three ongoing theses. Ann-Marie Hansson is concentrating on vegetable proteins from macrofossil evidence in archaeological remains. In connection with these studies she has made a detailed examination of the bread found in Viking-Age Birka and elsewhere. Kerstin Lidén is working with nutritional problems in connection with the transition from a Mesolithic to a Neolithic culture in the Baltic area and is using stable isotopes and heavy metals as diet-indicators in her analyses of human skulls. Finally, Sven Isaksson has just started a project analysing lipids (fats) from storage-pits and other cultural deposits from prehistoric times. It appears that fatty acids can be traced in cultural deposits and that although altered by age they can provide evidence on which material they originate from.

Theme C. Settlement and settlement structure in central Svealand

This was the impulse behind the excavations at Birka which Lena Holmquist Olausson uses in her thesis published last autumn: *Aspects on Birka. Investigations and Surveys 1976-1989*. Michael Olausson is nearing completion of his thesis on the enclosed hill-settlements from the Late Bronze and Early Iron Ages, being a part of his larger study of hillforts in Svealand. Radiocarbon dating as well as thermoluminescence dating are important elements in both of the above-mentioned studies.

Not directly linked to theme C, but of great principal value for that theme is the ongoing work by Agneta Åklerlund on the complex relationship between shore displacement and settlement location. A further ongoing study running parallel to the above themes is the study of mollusc assemblages in archaeological deposits by Birgitta M. Johansson.