

INDUSTRIAL ARCHAEOLOGY AND ARCHEOMETRY NEWSLETTER

EDITORIAL

ARCHAEOLOGY '98 - ANOTHER CHANCE

It is not for the first time in the "life" of our Newsletter that we are considering chances of organising the greatest event of international archaeometrical research, the Archaeometry Symposium. Already after the Heidelberg meeting in 1990 there was an intention of Hungarian students of the subject to bring the conference and the "main streamers" to Hungary, to learn and to seek for encouragement in our daily struggles. In Hungary, archaeometry is still homeless: the profession exists more in spite of than with the support of established branches of arts and sciences. We have no institutions, no dedicated laboratories, no regular publication media. Archaeometry still exists as the free-time hobby of some devoted analysts and maniac archaeologists. The role of the Archaeometry Working Group of the Veszprém Regional Branch of the Hungarian Academy of Sciences in this field is invaluable for us, offering frames of a voluntary interdisciplinary collaboration. Also, we do appreciate the hospitality of the Hungarian National Museum and other organising institutions, especially the Hungarian Academy of Sciences and its Institutes which finally allowed us to host this important event.

This conference may offer another chance to think over current practice, with its benefits and drawbacks. We can unite our efforts to collect results of Hungarian archaeometrical research and try to make up for the deficiencies. For this purpose, we are organising an archaeometry conference on national level in 1997, prior to the Budapest Archaeometry Symposium in 1998, prepare publications and database completion by the time of the international meeting.

At the same time, we have to pay special attention to invite colleagues involved in archaeometrical research from our region. This fact was emphatically mentioned by the Standing Committee of the Symposium as well.

Therefore we would like to spread information on the coming 31th Archaeometry Symposium and try to find means to invite specialists from "post-communist" countries for this conference, which is fairly expensive compared to our means.

Katalin T. Biró
Editor, head of the LOC

NEWS OF THE ARCHEOMETRY WORKING GROUP

The 1995. Session of the AWG was mainly consecrated to the possibility of organising Archaeometry '98. Apart from this, members of the AWG gave an account on their annual activities. In our Hungarian issue, we publish the account submitted in written form by J. Csapó and K.T. Biró.

NEW PHD DISSERTATIONS OF ARCHAEO-METRICAL INTEREST

Erzsébet Jerem: *Application of environmental archaeological and archaeometrical methods in the study of settlement history*

10.03.1996

The main topic of the dissertation is a new branch of archaeology, i.e., environmental archaeology. Similar to historical ecology, this discipline deals with the complex study of environmental factors and the interaction between Man and the environment. Its main perspective is the reconstruction of the contemporary environment.

Márta Járó: *Analysis of museum textiles with metal threads and the reconstruction of their production technique with scientific methods*

23.04.1996

The dissertation pays special attention to chronological implications, determination of provenance, reproductions and fakes.

ARCHAEOMETRICAL INVESTIGATIONS IN THE LABORATORY OF THE HNM

In the chemical and microscope laboratory of the Hungarian National Museum we have the possibility for simple wet chemical analyses, microscopic structure analyses and the study of binding materials.

By collaboration with other institutes, the range of scientific analyses can be essentially enlarged. Collaboration with the Kaposvár Somogy County Museum (L. Költő, XRF) and the Institute of Technical Physics of the HAS (A. Tóth, EDS), the Institute of Criminology (L. Kriston, XRD) as well as the Research Reactor of the Budapest Technical University (M. Balla, NAA and XRF) is most valuable and fairly regular.

In the past few years, analyses of Roman mortar, Roman wall paintings, Medieval and ethnographical metal threads were performed. Other metal studies included pearls and belt fittings from the Migration Period as well as various objects for the master's thesis of the students of the Conservator's High School.

Márta Járó

NEW RESULTS IN THE ESTIMATION OF THE AGE OF FOSSIL BONES BY AMINO-ACID RACEMISATION

The author has been involved in AAR studies since 1987. It was found that the main sources of uncertainty with this method is the high number of unknown parameters influencing amino-acid racemisation. To get better results, some 100 bone samples of known age (dated by C-14) were analysed by complex AAR. Both D- and L-amino acids were fully investigated as well as their ratio in the samples.

The following amino-acids were found useful for dating:

Name	Range
His	2-12 kyear
Phe	3-20 kyear
Asp	5-35 kyear
Ala	10-80 kyear
Isoleucin	<30 kyear
Valin	< 55 kyear

D/L ratios below 0.1 or over 0.7 were not used because accuracy of analysis is not satisfactory beyond these boundaries. Calibration curves were constructed for all compounds. The archaeological age is calculated as the average for each compound. The method was found promising on Hungarian samples.

János Csapó

AGE DETERMINATION OF WOOLLEN CARPETS BY AMINO ACIDS

AAR dating experiences suggested that bone samples younger than 2.000-3.000 years are generally not suitable for study. After this negative experience, we started to work on possibilities of dating woollen textiles of known age on the basis of the following compounds (cistin, cistein acid, metionin, tyrosine)

Coptic textiles and woollen carpets were selected from the collection of the Hungarian National Museum and the Museum of Applied Arts, using some 20-100 mg of material without damaging the original piece. Hungarian merino wool was used as reference sample.

By the advance of time, the quantity of cistein acid is growing and cistin is decreasing. Changes of the

above components were measured in function of time. Accuracy and limitations of the method are being tested.

János Csapó

NEWS OF THE INDUSTRIAL ARCHAEOLOGY WORKING GROUP

The current session of the IAWG is taking place in the days of the publication of our Newsletter (6-7.10.1996.) at Somogyfajsz, at a new site of reconstructed furnace. We shall give a detailed account on the proceedings in our next issue.

BRONZE AGE IN WESTERN TRANSDANUBIA

In memoriam Sándor Mithay
26-28.08.1996. Pápa

Conference dedicated to actual problems of the period, organised by Gábor Ilon. Problems related to industrial archaeology and archaeometry were touched upon by several speakers as well as the general discussion.

From the program:

- Figler, A.: Bronze-age cultures around Győr
Bartosiewicz, L.: Bronze-age animal husbandry
Füleki, Gy.: Environmental reconstruction of the Kisalföld in the Bronze Age
Kiss, V.: Observations on the technique of pottery ornaments in the Middle Bronze Age
Maclean, P.: New analyses on the Carpathian antimony bronzes
Költő, L.: Scientific study of LBA bronzes
Szabó, G.: Metallurgy of the Urn-field Culture in the light of experimental archaeology
Gyulai, F.-Torma, A.: Plant finds from Gőr.
G. Ilon and K.T. Biró gave an account on the complex study of the LBA Németsbánya site.

OTHER EVENTS OF ARCHEOMETRICAL AND INDUSTRIAL ARCHAEOLOGICAL INTEREST

M&M CONFERENCE

In June 1996, the 3rd International Conference on Museums and Minerals was organised by the Budapest University, the Hungarian Geological Survey, the Museum of Natural History and the Herman Ottó Museum. Among the papers presented on the conference, a petroarchaeological study of special importance is summarised below.

PETROGRAPHICAL STUDIES OF NEOLITHIC STONE TOOLS FROM HUNGARY

Almost 50 prehistoric stone tools of different raw materials from the Neolithic sites of Bicske, Méhtelek, Szarvas and Endröd were selected for petrographical investigations. The aim of the work was both to describe the rock material of the tools and to give the possible source. The raw material of instruments is very variable. The aim of the use determined the type of raw material of the tools of prehistoric man. So for tools like axes and similar implements the basic material must have been resistant and hard. Such rock types are the fine-grained fresh rocks, for example greenschist, hornfels, basalt, amaphitic andesite, or the siliceous rocks, like fine-grained sandstone, quartzite, metasandstone and siliceous magmatite.

There are some rock types occurring close to the sites and other ones which do not occur in their surroundings. There are at least three possibilities to explain how there latter reached the sites. One is the exchange of instruments by prehistoric peoples: in this case the material may have originated from far away and it is difficult to say something about the original locality. The second - we suppose this is usually the case - the coarse sediment load of a nearby river transported the raw materials of the tools. The third, that the rocks of the instruments were collected from natural outcrops in the environs of the sites. We think this last case occurs, but not as significantly as the second one. The original locality of the studied rock types could be identified quite exactly in some cases. Generally these rock types can be found near the sites or they originate from far away, but because their petrographical characters they can be attributed to the source. The source of the other group of rock types cannot be localised so exactly as the previous one. Usually these rocks do not occur in the surroundings of the sites. We suppose that most of them originate from a sediment deposit of the close rivers. Some of them may be found in other parts of the Carpathian Basin or the Carpathians or the Alps and the prehistoric man acquired them through an exchange system. Finally there are a few rock types for which we cannot give any exact information on their source. These rock types, especially the quartzites, are in fact widespread in the Alps and Carpathians and in the Carpathian Basin.

György Szakmány - Elisabetta Starnini

INTERNATIONAL ARCHAEOLOGICAL CONFERENCE

3-7. 10.1996. Százhalombatta

Problems of the LBA and EIA were also discussed at another conference, organised by the Matrica

Museum. One of the sections was consecrated to problems of experimental archaeology. As this field is one of the topics selected for special interest ("theme session" for the coming Archaeometry '98 conference, in our Hungarian issue a more substantial article by P. Reynolds is included.

From the program of the Conference:

P. Reynolds /UK/: Celtic round house, the Birth, the Life and the Death

H. Herdits /Austria/: Archeometallurgical work done by the Arbeitskreis Experimentelle Archäologie at Vienna University.

J. Happ /France/: Paléometallurgie du cuivre

A.M.Özer-S.Demirci-A.Turkmenoglu-A. A. Akzol /Turkey/: Archeometric studies of the samples from Ortakoy archaeological site

D.Todtenhaupt /Germany/: Teermeiler oder Teergrube

A. Kuryweil /Germany/: Doppeltopverfahren

C. Eibner /Germany/: Cleanshaved in Late Bronze Age, an illusion. Experiments with a replica of a razor from the National Museum Budapest

J. Weiner /Germany/: Altneolithische Holzbearbeitung am Beispiel des linearbandkeramischen Brunnens aus Erkelenz-Kückhoven, Deutschland.

J.Kovarnik /Czech R./: Die Technologie der vorgeschichtlichen Keramik mit Rücksicht auf ihr Brennen

Gy. Füleki /Hungary/: The role of geomorphology in the study of prehistory.

J. Blouzek /Czech R./: Die Probleme der klimatischen Entwicklung in der Hallstattzeit in Mitteleuropa

H-P.Stika /Germany/: Landwirtschaftliche Grundlagen der frühen Kelten im mittleren Neckarland in Südwestdeutschland aufgrund archäobotanischer Funde

S.Kadrow - M. Litynska-Zajac /Poland/: Ecological determinations of the evolution of the Early Bronze Age settlement microregion at Iwanowice in south-east Poland.

A.M.Choyke-L.Bartosiewicz /Hungary/: Bronze Age animal exploitation in Western Hungary

N.I.Shishlina /Russia/: Animals and birds in the Bronze Age culture of the Ancient Steppe Nomads

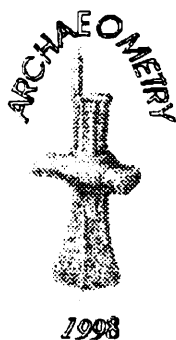
F.Gyulai /Hungary/: Einkorn as the living part of ancient landscape

K.B.Forsov /Russia/: Nomadic pasture system of Kalmyks and Sarmatians

Zs. Medzihradsky /Hungary/: The reconstruction of the 2nd millennium BC environment based on Palynological investigation

Vi.Jankovská /Czech R./: Pollenanalysen und Archäologische Erforschungen im der Tschechischen Republik

Erzsébet Marton



31th INTERNATIONAL SYMPOSIUM ON ARCHAEOMETRY

27. April- 1. May 1998
HUNGARIAN NATIONAL MUSEUM, BUDAPEST, HUNGARY

PRELIMINARY APPLICATION FORM

Copper age tool-kit from Szeged-
Szillér, ca. 3. mill. B.C.

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Yes, I would like to receive further information on the Archaeometry '98 Symposium because:

- I will probably attend the Symposium
- I would like to present a paper / poster
- I would like to receive further information

Name _____

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Address _____

City _____

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If you are interested, complete the form and send to:

ARCHAEOMETRY '98

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Industrial Archaeology and Archaeometry News - English Supplement of the Iparrégészeti és Archeometriai Tájékoztató -
Published by the financial support of the OTKA T-013638 project in the Hungarian National Museum

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