

INDUSTRIAL ARCHAEOLOGY AND ARCHAEOMETRY NEWS

VOLUME 6 NUMERO 1 - SUPPLEMENT

APRIL 1988

EDITORIAL

The present issue of IAAAN is unfortunately delayed by technical reasons. We apologize our readers and want to assure them that this is not because Hungarian experts were not active enough in their archaeometrical and industrial archaeological activities.

On the contrary: Members of the Archaeometry Working Group shouldered big tasks, working on a collective volume representing actual archaeometrical research in Hungary, that will be hopefully published by July in English. You can find a detailed account on the coming volume on page 4.

Members of the Industrial Archaeology Working Group are busy in compiling a catalogue of archaeological relics and objects of industrial archaeological interest in Hungary. The information sheet has been distributed to archaeologists for completion. The evaluation and sorting of the data obtained is in progress.

Both committees have held scientific meetings - these meetings will also be accounted on here.

Last but not least, we wish further interesting and fruitful work for the participants of the 26th International Symposium Archaeometry '88.

The Archaeometry Working Group is planning to organize an international conference on archaeometry for 1990. Organizing this conference, we would like to join the memorial program devoted to the memory of king Mathias, outstanding personality of Hungarian history and arts, on occasion of the 5th centenary of his death.

The conference is intended to deal with the results of analyses of archaeological finds and pieces of applied art from Mathias' period and their comparison with pieces of art of his age from other parts of Europe. Inquiries and comments are welcome.



Buda in the 15th century

ARCHAEOOMETRY WORKING GROUP NEWS

There were two sessions of Archaeometry Working Group organized in 1987. In course of the spring session, 04/06/87, there were four lectures presented:

CSAPO J., KÖLTÖ L.: Archaeological dating on the basis of amino acid racemization
The authors summarized their results on a research started in 1986 in Kaposvár already mentioned in our previous issue.

WITTMANN Zs., ERDŐHALMI-TÖRÖK K., KISS-BENEFY M., VELLEDEITS L.: Investigation of painting materials on the picture 'Studio' by Mihály Munkácsy

As we have already mentioned, the investigation of the badly deteriorated paintings of our national painter Mihály Munkácsy has been started. After the first phase of the analyses, the members of the research team presented their preliminary report.

BORSZÉKI J., ILON G.: Results of the analyses of Late Bronze Age bronze objects from Western Transdanubia

In this account, we could hear the archaeologist speak about the Late Bronze Age metal objects analysed and circumstances of the excavations, as well as the chemist presenting the results of material testing.

JARO M., GONDAR E.: Investigation of production technology of metal threads on museum textiles. Metal threads of the 13-15th centuries

Membrane threads used for weaving and embroidery appeared in Europe in the 11-12th century. Their application spread in the 13-15th centuries. The lecture concentrated on evidences of production technology of these metal threads, performed mainly by scanning electron microscopy.

The autumn session of the Archaeometry Working Group, 30/10/87, seized the opportunity of the 'French Scientific Week' held in Budapest, in the frames of which excellent representatives of the most famous French archaeometrical centre, the Laboratoire de recherche des musées de France (LRMF) had a joint session with the AWG, facing a fairly large audience. In our Hungarian issue, we give a detailed account on what had passed in the frames of this very successful meeting as well as the activity of the LRMF in general. For our

English Supplement, we give a very brief account on the lectures presented.

LAHANIER C.: Science in service of arts: the protection and preservation of our cultural heritage

Scientific methods serve the protection and conservation of our valuable cultural heritage. The author gave an account of the practice followed in LRMF.

GONDAR E.: Application of scanning electron microscopy to the study of art objects

Experiences of the last few years show, that the range of materials investigated by SEM has essentially increased. Today SEM is used for the analysis of museum objects made of textile, paper, parchment, leather, glass, stone as well as corrosion products in the INNOVATEX Textile Engineering Co.

VELLEDEITS L., ERDŐHALMI-TÖRÖK K., WITTMANN Zs.: Investigation of painting materials used by Munkácsy in the light of recent research

Continuation of the work was reported on. The authors presented, apart from the scientific investigations, the results of a wide-scale help obtained for the sake of saving Munkácsy's paintings.

The scientific investigation of these most valuable works of art received essential support from our institutions, among them, the Institute of Technical Physics.

KÖLTÖ L.: Complex elaboration of an archaeological site by archaeometrical methods

The excavation of an Avar cemetery was preceded by geomagnetic prospection. Bronze and precious metal objects were analysed by X-ray fluorescence analysis. Statistical evaluation of the data give a great help for a historical-sociographical study of the population buried here.



Poster of the "French Scientific Week"

CURRENT ARCHAEOMETRICAL RESEARCH

Microregions - the beginning of a long-term complex archaeological project

Following a period of several years devoted to collecting available data, the Archaeological Institute of the Hungarian Academy of Sciences launched a great project in the vicinity of the villages Gyomaendröd - Örménykút and Szarvas, SE Hungary.

Complexity means, that apart from routine field surveys and collecting existing topographical information, the detailed investigation of the area takes an advantage of very complex means of prospection including aerial photography and geophysical measurements: the excavations, aiming at a complete picture on the settlement structure and local history of the area are preceded by shallow-depth borings and minor sondage, and the evaluation of the data means not only traditional archaeological studies but archaeometrical investigations as well. There are several foreign experts involved in this work, too.

Pattantyús-A. M.

Coin analyses

The laser emission spectroscopy laboratory of the Veszprém University of Chemical Engineering can be regarded as the citadell of Hungarian numismatical material testing. They performed analyses on Roman and Byzantine gold coins as well as Greek and Transylvanian silver coins in 1987.

Bakos M.

Embroidery metal threads on Turkish horse blankets and Far-Eastern textiles

In the frames of the scientific examination of the Esterházy Collection of textiles in the Museum of Applied Arts (see our previous issue), morphological study as well as material testing has been performed on some outstanding pieces. Comparing Turkish metal threads to European ones examined, the former ones showed a much wider morphological variety than the threads made in Europe.

Based on the morphological analyses and material testing of Chinese, Japanese and Indian textiles with metal threads it was revealed that most of them were produced by gilding paper or parchment sheets, that were later cut into very thin (in some cases, 0.1 mm) strips. Layers of lacquer might be present under or over the metal.

The thin ribbons were used, subsequently, for weavings or wound around a silk core, for embroidery.

Gondár E. - Járó M.

Dyes on Anatolian carpets

Supported by the Hungarian Academy of Sciences, a series of layer-chromatographic and spectroscopic examination on 400 Anatolian carpets, stored in the collection of the Museum of Applied Arts, are currently undertaken in the National Centre of Museums. The results of the analyses will be published in the Carpet Catalogue of the Museum of Applied Arts, and hopefully will be representative enough for a statistical evaluation.

Batári F.-Timár-Balázsy A.

Analyses of painting materials in the Laboratory of the National Centre of Museums

In course of current work, there were pigment and ground samples of outstanding easel paintings analysed, as well as a 19th century icon painted on an iron support, a re-painted Baroque lambris and the painting materials from 19th century dolls. The structure of the paint layer was examined by microscope, the binding media were identified by staining technique on cross-section.

Erdőhalmi-Török K., Kiss-Bendefy M.



News of the Lithoteca

We are happy to inform our readers that the Lithoteca of the Hungarian National Museum has grown from a dream of some enthusiastic prehistorians to reality. The basic collection, comprising raw material samples of nearly 500 localities from Hungary and foreign countries as well is catalogued and is ready for inspection, investigation and analyses according to the general rules of any museal material in Hungary. The Lithoteca forms a part of the Palaeolithic Collection in the HNM, so the primary contact person for those who are interested in the samples themselves is Dr. Viola DOBOSI in the HNM.

At the same time, a complete catalogue and data base is being installed on the basis of the Specification forms, aiming at containing, in an interactive data base in dBASE system all available information on the lithic raw material samples. Acting on a step-by-step strategy, first we want to extend the database for raw materials not represented as yet in our collection - than, complete the collection ... It seems a long job, anyhow we are now happy to have a basic sample collection on Hungary and the most important raw material varieties of the neighbouring countries.

Apart from the basic material catalogued, we have substantial amount of exchange material to offer. Exchange list and further information can be obtained either from Viola DOBOSI or Katalin BIRO on request.

The scientific information on the Lithoteca is also growing. Apart from trying to compile available information, we try to ensure a systematical and manifolded analysis of the material. In this, we have already got many help from Hungary and abroad as well. For the time being, since the foundation of the Lithoteca, four series of instrumental analysis were started. Neutron Activation Analysis of the samples were started in Manchester, in a representative series from two source areas: Prof. G.W.A. NEWTON has already informed us on some most valuable preliminary results. Apart from lithics, the Manchester research group also undertook the task of analysing lead ore samples and lead objects from the Roman period from the collection of the HNM, in frames of their Europe-wide research program.

Another series of NAA examinations were started on "grey flint" samples: macroscopically fairly similar pieces of different origin, geological age and facies. The relatively small sample was investigated by István VARGA, graduate student of the Eötvös Loránd University /Budapest/. Another series of samples is being investigated in the Netherlands, by Dr. Henk KARS of the ROB.

According to our modest possibilities, we also try to do what we can. Some of the samples from which we have, so far, no thin-section in our collection, are petrographically investigated: the obsidian collection of the Lithoteca is, to some extent, already analysed by EDS and XRF. Control pieces of existing petroarchaeological analyses are also placed in the Lithoteca.

Takács-Biró K.

Archaeometrical Research in Hungary

For the information of our readers we give the contents of the volume planned to be out of print by July. The circulation of the volume is realised abroad in frames of publication exchange. Contact person on behalf of the publishers is M. JARO (National Centre of Museums, H-1476 Budapest 100, POB. 54.)

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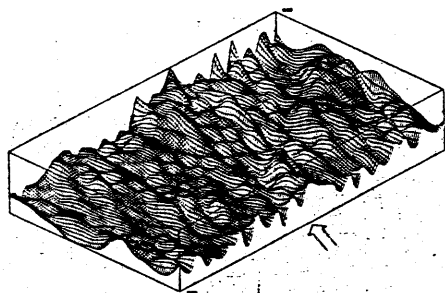
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From the volume

CURRENT INFORMATION

In this new column of the Industrial Archaeology and Archaeometry News we intend to give short information on events and publications concerning archaeometry from Hungary and foreign countries that are not directly related to conference accounts or literature reviews, like exhibitions and experiences of study trips.



Exhibition on the examination of art objects of the Laboratoire de recherche des musées de France in Budapest

As a part of the 'French Scientific Week' organized in Budapest, 1987, the activities of the LRMF were presented in the frames of an exhibition in the Hungarian National Gallery. The exhibition reflected on the manifold activity of this dynamically developing research centre, embracing all fields of museum activities, taking advantage of a very up-to-date instrumental basis. In the frames of the "Great Louvre" project, the Laboratory will get large, new workplaces where the first museum accelerator of the World will be installed.

Archaeometry on the Fair

On the Budapest Spring International Fair of Industrial Products, organized annually, not only results of industrial and technical firms are presented, but also the latest achievements of science as well. In the frames of this, the Hungarian Academy of Sciences had an exhibition hall on the Fair, in which the Archaeological Institute displayed a small exhibition. The exhibition covered the most important activities of the Institute, with special emphasis on the multidisciplinary approach of modern archaeology. The material presented was compiled by a small ad-hoc team lead by Dr. Erzsébet JEREM. The demonstration included archaeological objects, as well as posters on their scientific investigation, projected slides on excavations and different steps of the elaboration and conservation of archaeological finds.

Archaeology and Chemistry

'Pop' into the Past

The collaboration of German archaeologists and chemists has a tradition of nearly 200 years now. The first museum laboratory of the world was founded in Berlin, 1888, under the leadership of Friedrich RATHGEN. The research laboratory named after him is one of the most significant workshops of archaeometry even today.

The exhibition in the Dahlem Museum, West-Berlin is intended to present the current activities of this research laboratory. The catalogue of the exhibition is available under the title 'Archäologie + Chemie'.

Archäologie + Chemie Einblicke in die Vergangenheit



Study trip

Dr. Tamás BIRO, physicist, gives an account on his study trip to Great Britain for the Hungarian readers. He summarizes his experiences in Oxford and London, with special regard to the activity of the British Museum Research Laboratory.

INDUSTRIAL ARCHAEOLOGY WORKING GROUP NEWS

The last session of the Industrial Archaeology Working Group, held in December 1987, was consecrated to the problem of the material testing of archaeological relics of metallurgy. Actual problems concerning the Register for Sites and Monuments of Industrial Archaeology were discussed as well.

EXCAVATION NEWS

New furnace found in the Mecsek Mts

The Mecsek Museum of Mining and the Central Museum of Mining started joint operations for prospecting existing remains of ancient iron ore mining and metallurgy. In course of archaeological field survey, a new furnace was found in June 1987. To date the find precisely, however, further investigations are needed.

Iron smelting furnaces from the Arpád-age (Early Medieval Period) at Röjtökmuzsaj

The excavations on the site lying by the stream Ikva at Röjtökmuzsaj-Zsebedomb, NW Hungary, were started at the spot where Arpád-age sherds were scattered densely on the surface. A little bit further from the stream, a rich deposit of slag was found, which may be attributed to workshops of the nearby Roman villa.

The excavations, however, unearthed three workshops arranged in a row, of a smelting plant from the 10-11th century A.D.

Excavations of the Avar-age smelting plant near Zamárdi, started in 1986, were continued. The excavations unearthed the service utensils of the furnace.

In the frames of the scientific program of the Industrial Archaeology Working Group and the Central Museum of Mining, Dr. Gerhard SPERL /Leoben/ of the Institute of Solid State Physics of the Austrian Academy of Sciences gave a lecture in Sopron on the results of Styrian and Carinthian archaeological investigations of iron furnaces.

MEETINGS CONFERENCES

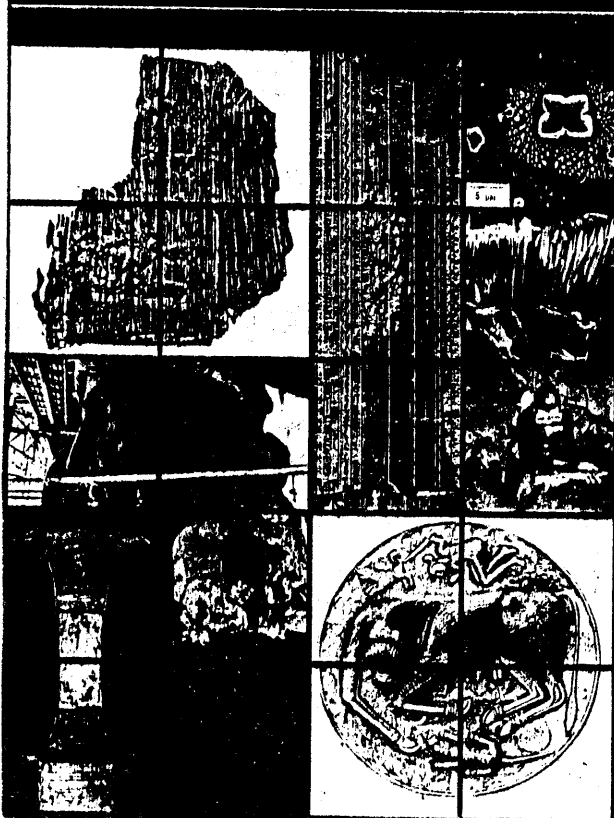
International conference accounts are mainly compiled for the information of the Hungarian readers. For the readers of the Supplement, however, results of the Hungarian colleagues and studies concerning Hungarian materials are summarized.



University of London
Institute of Archaeology

On the Jubilee Conservation Conference of the Institute of Archaeology, London, Hungarian archaeometrical research was represented by a lecture on the examination of paints of wall paintings. The Proceedings, with the same title as the conference ('Recent Advances in the Conservation and Analysis of Artifacts') contains several papers on the examination of pieces of art.

Recent Advances in the Conservation and Analysis of Artifacts



On the conference Science and Archaeology organized in Glasgow 1987, there were two Hungarian colleagues present. The conference covered practically all branches of archaeometry, including methodology and computer technics as well. Hungarian contributions focused on lithic analyses and investigation of archaeozoological material.

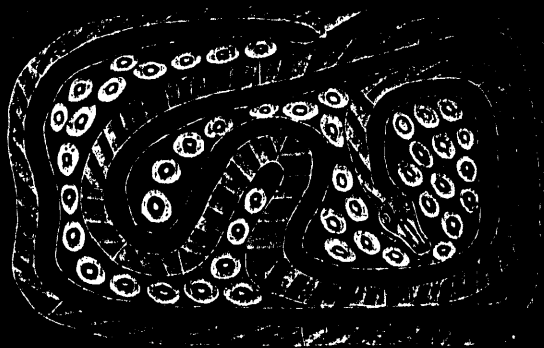


COMMITTEE FOR CONSERVATION

On the 8th Triennial Meeting of the ICOM/International Council of Museums/Committee for Conservation, Sidney, the lectures on archaeometry were presented in a separate workgroup /Working Group 1, Scientific Examination of Works of Art/, similarly to the practise of the former conferences. The three volumes of the conference contain 19 papers on archaeometry /among others a Hungarian one/, and several other papers publish results of examination of pieces of art as well.

ICOM COMMITTEE FOR CONSERVATION

8th Triennial Meeting
Sydney, Australia
6-11 September, 1987



COMITÉ DE L'ICOM POUR LA CONSERVATION

We give a short information on the conference Zerstörungsfreie Prüfung von Kunstwerken /Nondestructive Analysis of Works of Art/ organized in West Berlin in November, 1987, and on the session of the Gesellschaft Deutsche Chemiker, Arbeitskreis 'Archäometrie' /Archaeometrical Working Group of the Analytical Chemistry Division of the Association of German Chemists/ in March, 1988, where two Hungarian colleagues represented Hungarian research.



ASSOCIAZIONE ITALIANA PROVE NON DISTRUTTIVE

On the 2nd International Conference on Nondestructive Testing in Perugia, April 1988, the joint research of the National Centre of Museums and the Institute of Technical Physics will be presented under the title 'Electron beam microanalytical examination on the samples of Mihály Munkácsy's paintings'.

1988



University of Toronto

INTERNATIONAL SYMPOSIUM ON ARCHAEOMETRY

The Archaeometry'88 international conference will be held in Toronto, in May, 1988.

The next International Archaeometry Symposium will be organized in Heidelberg in 1990.

The Archaeometry and Industrial Archaeology Working Groups organize a two-day conference in May 1988 in Veszprém, with the central topic of material analyses of Hungarian copper and bronze objects, and information will be presented on the recently discovered finds of industrial archaeological importance.

The XIII. Internationales Kongress für klassische Archäologie will be organized in West-Berlin in July, 1988. Posters on archaeometry are welcome.

The 3rd Australian Archaeometry Conference will be held in Adelaide, in September, 1988.

The International Colloquium on Archaeometallurgy will be organized in Bologna, October, 1988.

The program of the European University Centre for the Cultural Heritage for 1988:

Patrimonium Librorum	Cours européen European cours Corso europeo	7-20.III.1988 Ravello e Roma
Histoire de la préparation alimentaire des céréales History of alimentary cereals processing Storia della preparazione alimentare dei cereali	Table ronde Round table Tavola rotonda	Printemps 1988 Ravello
Nouvelles méthodes en numismatique New methods in numismatics Nuove metodologie in numismatica	Atelier européen European workshop Atelier europeo	Printemps 1988 Ravello e Orléans
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The editors want to thank the Archaeological Institute of the Hungarian Academy of Sciences for the possibility of utilizing computer facilities for the preparation of the English Supplement of the Industrial Archaeology and Archaeometry News.

Edited by Márta JÁRÓ and Katalin T. BÍRÓ
Published by the National Centre of Museums
200 copies Publisher: Csikai László