

WOAM NEWSLETTER

No. 44

June 2009

ICOM-CC WORKING GROUP

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1. FROM THE COORDINATOR

Dear Colleagues

Hopefully, those of you who attended the ICOM-CC WOAM Conference in Amsterdam 2007 have received your heavy copy of the Proceedings. I am very pleased to see the result and I hope you found it worth waiting for. However, a few mistakes have passed through the editors fingers; please check the errata below. To manage the sales and distribution of the WOAM Proceedings, I am working to establish a special WOAM account. Hopefully, it will soon be arranged and as soon as this is settled, I will contact those of you who have already ordered the book.

Included in this Newsletter are calls for papers for the EU COST action on wood science for conservation of cultural heritage and the WOAM conference.

If you have news for the WOAM Newsletter, please forward it to me by the end of August 2009.

Best regards

Kristiane

ERRATA WOAM PROCEEDINGS AMSTERDAM 2007

In chapter 7.1, in the post-presentation comments after the paper on the Vasa salt problem by E. Hockers et al.: In the last line on page 481 the very important word NOT is missing, which changes the meaning of the whole discussion.

It should be read: The salt outbreaks "do NOT seem to be getting worse".

Anastasia Pournou has pointed out two other serious errors. Although accepted and revised, the manuscript of the poster "*Wet carbonized wood, a preliminary study of the material and its conservation treatments*" written by: Metaxia Triantafyllou, Panagiota Papachristodoulou and Anastasia Pournou has erroneously not been published in the Amsterdam 2007 Proceedings. Moreover, the abstract of the poster: "*Selective Reburial in the approach to In Situ Preservation*" by George Amendas and Anastasia Pournou is also missing from the Proceedings. This is extremely unfortunate and the editors sincerely apologize for these errors.

Kristiane Strætkvern
Hans (D.J.) Huisman

2. COLLEAGUES' CORNER

Anne Christine Helms, Denmark: Bacterial Diversity in Waterlogged Archaeological Wood.

PhD dissertation June 20, 2008,

Abstract

The steady increase in archaeological excavations over the past years has resulted in an increased number of archaeological artefacts requiring conservation. This has brought about the idea of *in situ* preservation or reburial of artefacts as a way of managing the cultural resource.

The best storage conditions for waterlogged archaeological wood are a completely waterlogged and anoxic environment. Practical experience has shown that wood, under these conditions, can survive for at least 10,000 years. In the past three decades it has, however, also been recognized that archaeological wood is degraded by microorganisms. Fungal attack, in aerobic conditions, is the primary threat. Under anaerobic conditions, where fungi are not a threat, it is the ability of bacteria to degrade wood that is of importance.

In this work the focus is on waterlogged archaeological wood and the results of bacterial growth in this. Wood is a natural organic material, which has naturally robust and durable characteristics. However, it is also a rich carbon source for microorganisms. Degradation on waterlogged archaeological sites is typically slow as it is only specialised organisms capable of lignocellulolytic degradation that can survive these conditions. The material analyzed in this project comes from Nydam Mose, a sacrificial Iron Age bog from which thousands of wooden objects have been excavated. Some of these have for some years been stored in temporary holding tanks at the National Museum of Denmark (standard storage method), and it has therefore been possible to compare wood still buried at the site with wood stored in tanks with running tap water.

The research succeeded in the following:

- characterizing some of the bacteria which are present in waterlogged wood using

molecular biological based techniques. Some of the bacteria belong to already known families, other (around 40%) are unclassified and may therefore be expected to belong to hitherto unknown families.

- "Genetic profiling" of the bacterial community of the wood from Nydam as well as from the wood which has been stored in the holding tanks. These experiments showed that the bacterial diversity is comparable, but there is a larger variation in wood stored in the holding tanks and the total DNA content is approximately 4 times larger. It may therefore be assumed that the bacterial content is larger in wood from the holding tanks compared to wood from the *in situ* site.

- Isolation- and growth experiments from the examined wood. This has partly succeeded, but several attempts did not result in an absolute isolation; only in a culture probably containing two different microorganisms. It is probable that this shows a symbiotic dependency of these.

- Identification of bacteria from a modern wooden sample, placed in a peat bog, Veksø, Zealand. Many of the bacteria are commonly found in soil and peat bog environments, and many belong to phylae also found in 1700 years old wooden samples from Nydam. A large fraction (48%) consists of unclassified bacteria

Georges Amendas and Anastasia Pournou, Greece:

Selective Reburial in the approach to *In Situ* Preservation

Poster 3A presented at the ICOM-CC WOAM conference in Amsterdam, 2007.

Abstract

Excavations at Dispilio, a lakeside Neolithic settlement in Kastoria, Greece, have revealed a significant number of wooden posts. All show advanced decay and are exposed to periodic drying as the water table fluctuates. Reburial cannot currently be implemented as excavation is still in progress. As an experimental trial, several posts were covered with plastic pipes and backfilled with the surrounding sediment.

This study aimed to investigate if this selective reburial is effective as an *in situ* preservation method. Fresh birch and pine samples were placed inside plastic pipes at 25cm and 35 cm depths and back filled with surrounding sediment. Samples were retrieved every three months and Eh, T, pH and water table depth recorded. Control samples were exposed to open excavation conditions.

Preliminary results indicate enormous fluctuations in environmental parameters and the considerable decay of control versus buried samples.

Assessment of physicochemical properties and morphology of retrieved samples is ongoing.

Charlotte G. Björdal, Sweden & David J. Gregory, Denmark:

Aggressive Shipworms eating underwater cultural heritage. New EU project to protect underwater cultural heritage from Shipworm in the Baltic.

Attacks by the wood boring mollusc, Shipworm on underwater cultural heritage is on the increase in the Baltic. At the bottom of the Baltic Sea lie up to 100,000 well-preserved shipwrecks and other maritime related constructions. These have so far been protected from the aggressive Shipworm because of low salinity water, but now it seems that they are spreading into the area, probably as a result of climatic changes. A new project Wreck Protect, which is funded by the European Commission, will now examine the growing spread of Shipworm into the Baltic Sea, and develop guidelines for protection of the submerged cultural heritage.

Unique and well preserved collection of Shipwrecks in danger

Is it necessary to worry about these Shipworms, given that the shipwrecks are underwater? Yes. The Baltic Sea is one of the few places in the world where historic wrecks are intact and accessible for historical research. This may not continue to be the case unless action is taken.

Shipworms must be fought

Low salinity water has so far protected wooden shipwrecks from Shipworm, but now it is starting to spread into the area. If the underwater cultural heritage is not physically protected, it will be destroyed by the shipworm in a relatively short period of time. The strategy to avoid this frightening scenario is to provide the archaeologists, conservators and museums responsible for the preservation of this heritage with tools to predict the spread of Shipworm and provide cost effective methods to protect these sites before they are lost. This work is being supported with funding from the European Commission's.

A team of experts come together against Shipworm

Wreck Protect is funded by the European Commission's Seventh Framework Program to provide efficient tools for prediction of potential decay areas in the Baltic and to deliver guidelines for protection of shipwreck. The project, which started on 1 May 2009 and extends over 2 years, includes marine archaeologists, biologists, archaeological conservators and wood scientists from Sweden, Denmark the Netherlands, Finland, France and Germany. Experts from these countries will, through meetings and networking, exchange knowledge and then summarize it into practical tools and methods. Wreck projects goal is to predict the spread and attack of Shipworm in and around the Baltic and to find cost effective ways to protect the underwater cultural heritage so that it can be preserved and safeguarded for posterity.

Additional information:

The overall project is coordinated by Dr. Charlotte Gjelstrup Björdal, SP Technical Research Institute of Sweden, and Charlotte.GjelstrupBjordan@sp.se

About the project / project partners in Denmark:

Senior researcher David Gregory, Nationalmuseet:

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Press Contact for the National Museum: Anni
Mogensen, 3347 3007

Other consortium members

Martijn Manders & Bertil van Os, The Dutch
Agency for Cultural Heritage, The Netherlands
Dr. Jon Havaland & Christin Appelkvist,
University of Gothenburg, Sweden

Advisory board

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Commission, German Archaeological Institute,
Frankfurt am Main, Germany

Dr. Giulia Boetto, Lab. for Naval Archaeology,
Centre Camille Jullian, Aix-en Provence, France.

Stefan Wessman, Curator, National Board of
Antiquities, Maritime Archaeology Unit,
Helsinki, Finland

Facts

Shipworm are a group of wood boring marine molluscs, which can usually destroy wood exposed to sea water within a very short period of time; years or even months. However, they require a relatively high level of salt for their activity, and therefore the Baltic Sea with its low salinity, has afforded natural protection of the underwater cultural heritage for centuries. Degradation of Shipwrecks in the Baltic has until now only been caused by microorganisms, fungi and bacteria, and these processes are very slow and much less harmful.

3. CONFERENCES AND COURSES

**Workshop of COST Action IE0601,
Wood Science for Conservation of Cultural Heritage
INTERNATIONAL CONFERENCE ON WOODEN CULTURAL HERITAGE:
EVALUATION OF DETERIORATION AND MANAGEMENT OF CHANGE
Hamburg, Germany, 7th -10th October 2009**

The Workshop will be hosted jointly by the Institute of Wood Technology and Wood Biology (HTB) of the Johann Heinrich von Thünen-Institute (vTI), and the University of Hamburg, Department of Wood Science (Organiser: Dr. Uwe Noldt)

The conference programme is organised around three main themes:

- 1. Non Destructive methods at various scales: techniques, instrumentation, case studies;**
- 2. Evaluation of past intervention and re-treatment;**
- 3. Aspects of wood science relevant to conservation.**

Each theme will be allocated about 1/3rd of the Workshop.
Contributions should provide innovative approaches or present state-of-the art aspects relevant to the above themes. Given the nature of the conference, perspective contributors should strive to submit contributions targeted at the mixed audience (wood scientists, conservationists, ...). Oral and Poster presentations will be selected on the basis of relevance to the themes, scientific quality and ability to reach a mixed audience.

Deadlines

Extended abstracts of contribution(s), oral presentation or posters, should be one or two pages long.

Abstracts should be submitted by **May 31st, 2009** by e-mail to:

Luca Uzielli (Chairman of COST Action IE0601; e-mail: luca.uzielli@unifi.it) or to:

Joseph Gril (Vice-Chairman of COST Action IE0601; e-mail: jgril@lmgc.univ-montp2.fr).

Submitting authors will be notified of acceptance/ rejection and oral presentation/poster by **July 6th, 2009**. Authors will be required to confirm that they accept to present their contribution at the Workshop (oral or poster) and to send a full paper of their presentation by **September 27th, 2009**.

Abstracts will be reviewed by the Steering Committee of the Action.

As a matter of policy, if accepted presentations (oral/poster) are not received on time as written papers, the Organising Committee reserves the right to cancel the presentation at the Workshop.

For further information see www.woodculther.org



CALL FOR PAPERS - SUBMIT AN ABSTRACT

The 11th ICOM-CC WOAM (Wet Organic Archaeological Materials) WG conference in:

Greenville, North Carolina May 24 – May 28, 2010

The conference will be hosted jointly by:

North Carolina Department of Cultural Resources and East Carolina University

Local organizers:

Sarah Watkins-Kenney, NC Dept. Cultural Resources Queen Anne's Revenge and
Emily Williams, Colonial Williamsburg Foundation

We invite you to give a presentation or present a poster at this conference.

The conference deals with all subjects concerning wet organic archaeological materials. During WOAM 2007 in Amsterdam we agreed to concentrate on the following main topics:

- In-situ preservation and reburial
- Degradation and conservation of leather and other organic materials
- Conservation of very large timbers
- Impregnation agents and drying methods
- Post conservation care, including problems of wood re-treatment – practicalities, ethics & risks
- Sulphur/iron acid formation in organic materials
- Analytical techniques for organic materials
- Reports on ongoing conservation projects

As in the 2007 WOAM conference, a distinction will be made between reviewed and non-reviewed papers. Thus; there will be different deadlines for submission:

Reviewed papers for WOAM 2010

Participants who want to have their papers reviewed (a requirement for some scientists) will need to send in an abstract first; a scientific committee will review this. The abstract should not exceed 800 words. After acceptance, the authors are required to submit a paper that will be reviewed and sent back to the authors with comments. Finally, the authors are required to send in their revised papers. These papers will be published in a separate "reviewed" section in the conference proceedings.

Deadline for abstracts of reviewed papers:

September 1, 2009

Deadline for submission of reviewed papers:

January 1, 2010

Please indicate at the top:

WOAM Review

Non-reviewed papers and poster presentations for WOAM 2010

Other participants that want to give a presentation or present a poster are also requested to submit an abstract. If accepted, they will need to submit their final paper 2 weeks before the conference starts. This will be published in the conference proceedings. If no copy is received before the conference starts, the paper will not be published in the conference proceedings.

Deadline for abstracts of non-reviewed papers/presentations/ posters:

November 1, 2009

Deadline for submissions of non reviewed papers/presentations/ posters:

May 14, 2010

Please indicate at the top:

WOAM Non-review and Presentation or Poster

Send your abstract to the WOAM co-ordinator: Kristiane.straetkvern@natmus.dk.
We are looking forward to receiving your contributions and meeting you at the next WOAM conference.
Best regards, Sarah, Emily & Kristiane

The WOAM 2010 website (<http://www.woam2010.com>) is now fully online!

4. ANNOUNCEMENTS

New publications:

Degradation of Archeological remains

D.J. Huisman (ed.)

The archaeological record is the most invisible, intangible and hidden part of our entire cultural heritage. Most of it (the subsurface archaeological record) is buried in the soil, or submerged under water. However, archaeological sites can be studied only by destroying at least part of them by excavation. This makes existing, unexcavated sites extremely valuable for present and future archaeologists, since these are the only locations where new archaeological questions can be properly researched, or where new techniques can be applied. However, this subsurface archaeological record is under threat from physical, biological and chemical processes, most of which are also invisible.

What degradation processes can occur?

In order to protect our subsurface

archaeological heritage, we need to know what degradation processes can occur, and what their relationship is with the burial environment. Moreover, we need techniques and research methods that make it possible to assess the state of preservation of an archaeological site, to assess the burial environment and to predict future developments with as little damage to the site as possible.

About the book

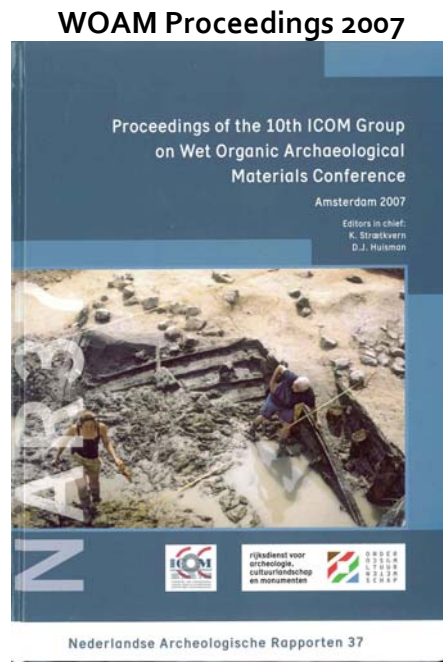
Degradation of Archaeological Remains outlines the current state of knowledge on degradation and in situ protection of the most relevant types of archaeological remains. The final chapter contains an overview of approaches and methods for the assessment and monitoring of protected archaeological sites in situ, with a particular focus on the way in which various potential monitoring parameters correlate with each other and with decay processes.

Practical approaches

Degradation of Archaeological Remains provides basic information for people concerned with the preservation of archaeological sites in situ. Basic technical information is presented, as well as practical approaches. It is suitable for use as course material for students of archaeology, archaeological science and archaeological heritage management. It can also be used as a basic source book for professionals engaged in archaeological heritage management, in activities such as the setting up of assessment and monitoring projects at archaeological sites.

The book – 240 p. full-colour, is published by SdU Den Haag in May 2009 (49.75 EURO incl. VAT), and can be ordered through their website:

<http://www.sdu.nl/catalogus/9789012130950>



*The book – 772 p. (black & white), is published by Rijksdienst voor Archeologie, Cultuurlandschap en Monumenten, Amersfoort, 2009.
ISBN/EAN: 978 90 5799 139-4*

The book can be purchased for 50 Euros incl VAT + postage by contact to:

Kristiane Strætkvern
Kristiane.straetkvern@natmus.dk

If purchased from Kristiane, please be aware that owing to change in the administrative procedures, the book cannot be shipped until August 2009.

Impatient? You may also contact:

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