First International Symposium for Ancient Cadaver Protection and Research

Changsha, Hunan Province, China
16-20 September 2011

Minutes

Organizer: The Chinese Museum Association and CIPEG- ICOM
Operators: Hunan Provincial Museum
Central South University
Mawangtui Ancient Cadaver & Cultural Relic Preservation and Research Center

Organizing Committee
Co-chairpersons:
Prof. Chen Jianming, Vice-Chairperson of ICOM-China
Vice-president of Chinese Museum Association
Director of Hunan Provincial Museum
Standing Deputy Director of Mawangtui Ancient Cadaver & Cultural Relic Preservation and Research Center

Dr. Claire Derriks, Chairperson of CIPEG- ICOM
Curator Emeritus of Royal Museum of Mariemont (Belgium)
Committee Members:
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Wu Yanbo, Deputy Head of General Office, Hunan Provincial Museum
Zhang Bin, Deputy Head of General Office, Hunan Provincial Museum

General Topics:
1. Classification of Ancient Cadavers
2. Methodological Development for Preservation of Different Types of Ancient Cadavers
3. Significance of Ancient Cadaver Preservation and Research

Schedule:
Sep 16/2011: Registration
Sep 17: Conference Sessions
Sep 18: Site Investigation and Discussion
Sep 19: Excursion
Sep 20: Departure
Lecturers

Derriks Claire
Chen Jianming

Egyptian Mummies: More than 4000 Years of History.
In Life and Beyond: The Museum Repository Model for Protection and Inheritance of a Female Corpse Unearthed from Mawangtui Han Tombs of West Han Dynasty (in Chinese)

Gill-Frerking Heather

Analyzing Peat Bog Bodies from Northwest Europe

You Zhenqun

Reflection on the Staleproof of Miracle of the Ancient Corpse from Mawangtui Han Tomb and Key Technologies for Protection and Inheritance of the Corpse (in Chinese)

Antoine Daniel
Peng Longxiang

Human remains at the British Museum: Curation and Research
The Classification of Ancient Corpses & Feature of Mawangtui Corpses

Luo Xuegang

Assessment on 30-Year Preservation Status of the Mawangtui Ancient Corpse after Unearthed (in Chinese)

Warinner Christina, Shved Natallia, Papageorgopolou Christina, Haas Cordula, Rühl Frank

Archaeogenetic and Histological Analysis of Salt Mummification under Experimental and Natural Conditions

Huang Jufang

Study and Application of the New Model of Mawangtui Wet Corpse Protection (in Chinese)

Veiga Paula

What Science and History can Learn from Human Remains

Zeng Leping

A Method of Extracting DNA Remained in Special Hair shaft ( in Chinese)

See also:
http://www.hnmuseum.com/hnmuseum/eng/generallntro/introContent.jsp?infoid=0132a8494349402884833250eb6516c2
Abstracts

**Egyptian Mummies: more than 4000 Years of History**  
*Claire Derriks, Chair of CIPEG/ICOM, Curator Emeritus, Royal Museum of Mariemont (Belgium)*

Herodotus described a variety of techniques used during various periods to mummify bodies in ancient Egypt, suggesting a possible relationship with economics or with fashion. Certain mummification methods were preferred at certain points in time. Archaeological excavations helped enriching our understanding of these burial practices. The very beginning of these practices was revealed by the excavations at Hierakonpolis where a Pre-dynastic cemetery full of mummies wrapped in shrouds in swallow pits surrounded by grave-goods was found. The pottery dates of Nagada II (Nagada II: 3800-3300 B.C.), which is definitely the date of the first mummies found in Egypt.

The Egyptians believed that the body must be intact to ensure afterlife. Thus, the efforts to preserve the body became more elaborate exactly as the tombs, called “house of eternity”, became larger and more complex. Evisceration became popular during the Middle Kingdom and later in the New Kingdom the removal of the brain was regular. The use of natron, resin, linen, etc. contribute to a better preservation of the human remains. The body was carefully embalmed. It happened that mummies, when plundered, were restored and embalmed again.

The body preservation achieved his new heights during the Third Intermediate Period. Mummification was not abandoned during the occupation periods. Excavations demonstrated that the practice was adopted in Egypt by the Greeks and the Romans, although the quality of preservation decreased. For example, resin was used instead of the long and meticulous process of desiccation known previously. Despite this fact, the period gave probably the richest cartonnage mummy-masks, beautiful painted portraits and elaborated wrappings.

The Coptic Period is the ultimate step in the history of mummification. The practices came definitely to an end in the Christian Period. It is interesting to note that Islamic burials in Egypt go back to the Pre-dynastic Period.

**In Life and Beyond: The Museum Repository Model for Protection and Inheritance of a Female Corpse Unearthed from Mawangtui Han Tombs of West Han Dynasty** (in Chinese)  
*Chen Jianming, Hunan Provincial Museum, Changsha,*

As a cultural heritage for the whole world, Manwangtui female corpse of the Han dynasty is of special features in terms of its ways of preservation and inheritance. On the premise of protection of the cultural heritages from damage, it is a historical mission to shorten the distance between the heritage and the general visitors, to bring into full play the social values, to carry forth the history and the civilization for enlightenment of the people, to promote the social development and serve better the society. In the process of protecting and inheriting Manwangtui female corpse of Han dynasty, Hunan Provincial Museum has been sticking to its professional ethics and moral norms, attaching importance to the differences of historical and cultural background and humanistic concern, and striving to explore the best approaches to the preservation and inheritance of human remains.
Analyzing Peat Bog Bodies from North-western Europe
Heather Gill-Frerking, German Mummy Project of Reiss-Engelhorn-Musee, Germany

Bog bodies are naturally preserved mummies that have been found in acidic peat bogs in several north-western European countries: Denmark, Germany, Netherlands, England and Ireland. Most of the bodies date to the Iron Age in northern Europe, between 500BC and AD 800. To type of peat bods exist in north-western Europe: acidic and alkaline. The bog bodies are preserved through a very complex process of environmental mummification which is still not well understood. Experimental archaeological project, such as pig burial research discussed in this paper, provide the only means of attempting to replicate the type of mummification seen in the Iron Age bog bodies. The collection of bog bodies from western Germany that were discussed in this paper were examined with medical imaging, trace element and stable isotope analysis in an attempt to better understand the bioarchaeological context of each individual.

Reflection on the Staleproof Miracle of the Ancient Corpse from Mawangtui Han Tombs and Key Technologies for Protection and Inheritance of Corpse
You Zenqun, Hunan Provincial Museum, Changsha

To date, the female corpse from Mawangtui Han Tombs remains China’s earliest record of the discovery of the “wetted corps” (See the tomb excavation report for details). This paper, through analysis of the burial conditions of the female corpse, intends to disclose the mystery of the long staleproof effect, and summarizes the gradual shaping of some key preservation techniques for human remains, worthy of modern generalization on the basis of inheritance and development.

Human Remains at the British Museum: Curation and Research
Daniel Antoine, The British Museum, UK.

Human remains in the British Museum reflect the varied ways different societies have conceived of death and prepared the remains of the dead. They are a unique record of past human biology and add to our understanding of the people that produces the objects in the museum’s collection. Ranging across millennia and displaying different levels of preservation, the collection includes the remains of Lindow Man, a naturally preserved bog body from ancient Britain, mummies from Americas, Egypt and Sudan, as well as large assemblages of skeletal remains. Curating and displaying human remains is balanced with a duty of care and the British Museum has developed a policy that sets out the principles governing the holding, display, curation and study of human remains in its collection. It is based on the recommendations of the ‘Guidance for the Care of Human Remains in Museums’ and Code of Practice published by the Department for Culture, Media and Sport in October 2005. As part of the museum’s efforts to study and publish the material in its collections, the human remains are being actively researched. Their analysis is providing valuable information on human biology, ancient diseases, injury patterns, past activities and diet. The Department of Ancient Egypt and Sudan curates one of the largest collections of ancient human remains from the Middle Nile Valley, a substantial of which consists of skeletal remains and naturally mummified bodies recovered during the Merowe Dam Archaeological Salvage Project. The construction of the new dam at the Fourth Nile Cataract resulted in a major international rescue campaign in which the British Museum, in conjunction with the Sudan Archaeological Research Society, excavated burials from the
Neolithic to Medieval period. This unique collection is allowing us to investigate how changes in environment, living conditions, diet and culture affected the biology and health of the past inhabitants of the Middle Nile Valley.

The Classification of Ancient Corpses & Feature of Mawangtui-type Corpses
Peng Longxiang, Xiangya School of Medicine, Central South University, Changsha, Hunan

For the sake of our knowledge on varied features of corpses, is it necessary or not to categorize ancient corpse? This paper discusses and proposes a classification of ancient corpses - Mummies, Peat-tanned cadaver, Adipoceres, Mawangtui-type ancient cadaver, Skeleton in suspension coffin and Iceman- and describes the characteristics of the Mawangtui-type ancient cadaver.

Assessment on 30-Year Preservation Status of the Mawangtui Ancient Corpse after Unearthed
Luo Xuegan, Xiangya School of Medicine, Central South University, Changsha, Hunan

The purpose of this study is to assess the preservation status of the Mawangtui ancient corpse unearthed 30 years ago an identified rational technologies and methods in response to any small change possibly arising in monitoring the process of ancient corpse preservation. The technologies and methods, such as those in morphology, radiology, microbiology and analytical chemistry, are adopted for testing and analysis of the ancient corpse tissue samples and the in-coffin preserving fluid samples. As a result, it is found that the overall exterior of the ancient corpse has been well preserved, that the microstructure has been changed to some extent when compared with that just unearthed with high content of calcium and phosphorous concentration in coffin fluid, and that some amino acid has been tested out in the preservation liquid. Here is the conclusion: The ancient corpse from Changsha Mawang tomb is well preserved with some gradual change. Through chemical analysis and compositional adjustment of the preservation fluid can be probably an ideal technical means to monitor and control such changes.

Archaeogenetic and Histological Analysis of Salt Mummification under Experimental and Natural Conditions
Christina Warinner, Nathalia Shved, Christina Papageorgopolou, Cordula Haas, Frank Rühli,
Center for Evolutionary Medicine, Institute of Anatomy, University of Zurich, Switzerland,
Institute of Legal Medicine, University of Zurich, Switzerland

High-salt burial environment can lead to exceptional preservation of organic remains. In this talk, we present our research on natural and experimental salt mummification of human remains and discuss the long-term of salt mummification on the preservation of human tissues, cellular structures, and DNA.
Study and Application of the New Model of Mawangtui Wet Corpse Protection

Huang Jufang, Xiangya School of Medicine, Central South University, Changsha, Hunan

The Purpose of the study is to explore key technologies for relatively long preservation after the wet corpse was unearthed from the Mawangtui tomb and form a technical system possible for application and generalization. Regarding the methodology, in combination with the special requirements for deep burial environment prior to the unearthing and surveillance afterward, dynamic testing technologies for macro-environment factors were established, such as the temperature, humidity, cleanliness, static pressure differences, illumination intensity, and volumes; several conditions were controlled for improvement of the partial environment, including the glass coffin quality, noise damping, shock damping, extinction, air tightness, and transparency; several micro-environments were optimized, adjusted and controlled, for instance, ancient corpse preservation liquid compositional ratio, precision, solution granular size, and dynamic pH environment of the ancient corpse values. The findings include: after adjustment and control of the macro-environment and partial environment for the ancient corpse, the general shape was kept; then after adjustment and control of the micro-environment for preservation of the ancient corpse, the amino acid content in the solution and the variety were prominently decreased, with marked decrease of calcium ions, and the pH value fluctuation range was narrowed. In conclusion, the three –in-one ancient corpse preservation-purposed adjustment and control system in the macro, partial and micro environment can help realize the “entirety-tissue-molecule” three level preservation model for the Mawangtui ancient wet corpse.

What Science and History can Learn from Human Remains

Paula Veiga, Health and Medicine in Ancient Egypt, Lisboa, Portugal

In Egypt, the extreme dry climate favours a natural body desiccation. Mummification started to happen naturally, spontaneously, as we can observe at The British Museum, in London, when we look at ‘Ginger’ (fig.1). The buried bodies of deceased became mummified, although most of the findings from ‘natural’ mummification result in skeletized bodies. Most of those findings are already disarticulated bodies; groups of bones that are not placed in their original anatomical position. Besides religious and social significances, the procedures around mummification rituals may give us a broader spectrum of data. The materials used, the techniques employed and the objects that accompany the body are also important. This could not be studied in detail if there was not such an extraordinary myriad of technology that can be applied to mummy studies. Since the 1800’s some scholars have started by unwrapping mummies at dinner parties portraying this performance as a cultural and intellectual event. Less respect was involved on the human though. Nowadays, we can scan a human body or any human remains without touching them. Contemporary computerized software and hardware allow scientists and historians to dwelve into the depths of a 3000 y.o. body without destroying it, or with minimal impact. From the specimens I studied so far, I can say that, as a researcher in ancient medicine, much can be learned from an ancient body. How he/she lived, suffered, died and what kind of materials were used to preserve the body. Many forensic techniques can be used to examine body parts, such as histology, serology, radiology, aDNA research, Osteology, and other paleopathology techniques such as chemistry, isotope and carbon tests, and never forget the macroscopic examination, prior to all laboratory tests. We can learn about ancient civilizations’ diet, diseases, such as: plagues infesting their crops, climate changes translated into famines, as shown in bone markers, bacteria causing hemorrhagic fevers, animals bites and stings, inflammation processes from trauma, genetic disorders, when comparing aDNA samples, hair lice, blindness caused by sand, wind or stone quarrying, water worms in the Nile waters, etc.

We can also compare the texts describing medical and magical prescriptions’ ingredients with plant remains recovered from excavation sites now or housed in museums. And then compared those with
the plant remains found in tombs next to the body or their chemical components detected by technology. Ancient bodies with ancient diseases might get answers for contemporary ailments and result in the conclusion that ancient diseases are still present today among us. The way ancient civilizations dealt with their afflictions, their disturbances of natural order and health, might help the research of pharmacological substances, chemically altered from plants' natural active substances, to find more accurate cures. In alliance with genetic research, mummy studies might teach contemporary scientists about direction; on how to aim their research to find new medicines. In exception for the unidentified plants and other ingredients and the few which have disappeared from Egypt, the majority of the flora still exists, thus permitting a closer encounter between science and history.

Next meeting: Xin Jiang (China North-West province)  
Date: to be planned  
Titel of the Symposium: could mention “Ancient human remains” in the future

Claire Derriks  
Chair of CIPEG-ICOM  
October 2011