



ABSTRACTS



6TH MEETING OF THE WORKED BONE RESEARCH GROUP / ICAZ AUGUST 27TH – 31TH 2007

ORGANIZED BY
ISABELLE SIDÉRA, EVA DAVID, ALEXANDRA LEGRAND

WITH THE COLLABORATION OF JEAN-FRANÇOIS-GORET AND CATHERINE SCHWAB

IN
MAISON DE L'ARCHÉOLOGIE ET DE L'ETHNOLOGIE RENÉ-GINOUVÈS
21 ALLÉE DE L'UNIVERSITÉ
92023 NANTERRE CEDEX

PARTNERS

SERVICE ARCHÉOLOGIQUE DE LA VILLE DE SAINT-DENIS & MUSÉE DE L'ARCHÉOLOGIE
NATIONALE

SUPPORTS

CNRS, UNIVERSITÉ PARIS-X-NANTERRE, UNIVERSITÉ PARIS-I, INRAP
ACADÉMIE DES INSCRIPTIONS ET BELLES LETTRES, SERVICE ARCHÉOLOGIQUE DE LA VILLE
DE SAINT-DENIS, LABORATOIRE PRÉHISTOIRE ET TECHNOLOGIE UMR 7055, LABORATOIRE
ARSCAN UMR 7041, MAISON DE L'ARCHÉOLOGIE ET DE L'ETHNOLOGIE RENÉ-GINOUVÈS,
SERVICE RÉGIONAL DE L'ARCHÉOLOGIE IDF

TECHNICAL STAFF

PÉNÉLOPE AMATO, DOROTHÉE DÉRIEUX, AUDREY GRANATA, GAËLLE LEDOSSEUR,
CHARLOTTE LEDUC, CHRISTELLE LERICHE, JEAN-MARC PÉTILLON, MICHAELA ZELINKOVA

MONDAY AUGUST 27TH

1- NATALIA BORISOVNA AKCHMETGALEEEVA

THE TECHNOLOGIC-TRACEOLOGICAL ANALYSIS OF THE NON-UTILITARIAN BONES
FROM THE UPPER PALEOLITHIC SITE OF BYKI-7

This work is dedicated to the manufacture technology and use-wear analysis of the non-utilitarian bones (ornamented artifacts, beads) from the Late Upper Paleolithic site of Byki-7(I). This site is located on left bank of Seim river of Desna basin (Russia). The date of Byki-7(I) was generated through analysis of horse and reindeer bones by L. Sulerzhitsky: 17,000 ± 90 BP. The article is devoted first truly figurative artifact from this station too. This is a large ivory ring with a sculptural top shaped like a horse's head. The zoomorphic figurine is significant in that it may provide certain information concerning the beliefs of the seasonal camps' dwellers. In the sites of the Desna basin of this period, works of figurative art are rare. The large ivory ring from Byki-7 with a top shaped like a horse's head is unique for the Upper Paleolithic of Europe. The uniqueness of this zoomorphic figurine reflects the uniqueness of the flint industry with geometrical mikrolithic of Buki-7 site.

Dr N. Borisovna Akchmetgaleeva — Regional State Museum of Kurchatov town — Kursk' province, - Molodeznaya street, 12 — 307251, Russia
achmetga@yandex.ru

2- MICHAELA ZELINKOVÁ

ARTIFACTS FROM HARD ANIMAL MATERIALS FROM DOLNÍ VĚSTONICE I (MORAVIA, CZECH REPUBLIC)

The upper paleolithic site of Dolní Věstonice I, located in the northwest slope of Pavlovské Hills (Moravia, Czech Republic), is one of the most important Pavlovian site.

Preliminary research of the Pavlovian (Gravettian) collection of osseous artifacts brought informations dealing with usance of raw material, its preferention, the way of its treatement and utilization, which all contribute to the reconstruction of way of life and strategies of then people. For the manufacture of Pavlovian osseous artefacts standartized high-level technics were used. Certain typological classes of artefacts were manufactured by the same methods, which can indicate carefully worked-out manufacturing system. From the typological point of view are represented classical Pavlovian osseous tools.

M. Zelinková – Institute of Anthropology - Faculty of Science, Masaryk University Brno - Vlnářská 5, 603 00 Brno, Czech Republic
mickej@email.cz

3- PÉNÉLOPE AMATO

UPPER PALEOLITHIC CLOTHING

Although clothes direct evidences are almost absent from Prehistory, archaeological findings often reveal the existence material related to sartorial or domestic sewing since the Upper Palaeolithic. Numerous eyed or non-eyed needles, awls, pins and flatteners, all made of hard animal tissues have been found, often associated to assembling techniques. The composition of several ornaments found in burials also reminds us of the shape of clothes. Similar evidences have been found in some anthropomorphic representations. In parallel, the treatment of animal skins with lithic or bone-made tools has been well-recognized. Sewing must have been an important activity among communities of the Upper Palaeolithic as it offers protecting solutions against cold (homes, clothes), allows transportation and the making of storage artefacts while contributing to the group's identity.

In the context of my PhD research, I have decided to address this question through a functional study of sewing instruments of the Upper Palaeolithic in France. I will present the initial results of my ethnographical research on the response of arctic and sub arctic populations to extreme climatic conditions (cold, wind, humidity) through their assembling techniques. The objective is to understand the ergonomics of sewing instruments, how they are used, and on which materials.

P. Amato — UMR 7055 *Préhistoire et Technologie* — Nanterre
penelope.amato@free.fr

4- ALICE M. CHOYKE, MÁRTA DARÓCZI-SZABÓ

ACCIDENT OR DELIBERATE BURIAL: THE TAPHONOMY OF PREHISTORIC BONE TOOLS IN HUNGARY

Bone objects may come to light in a variety of conditions. Sometimes these tools and ornaments are broken, sometimes half-finished. Very often the surfaces of these objects display a roughened surface indicating that at one point they lay abandoned or lost, exposed to the effects of weathering. However, from time to time a small number of well-made, planned or even special objects are found that appear to have been buried quickly while they were still eminently usable. Such phenomena, although relatively rare in bone tool assemblages, occasionally display regular patterning related to the manner of their disposal in certain prehistoric periods in Hungary. Examples of what appears to have been deliberate burial of special bone objects will be taken from Early (bone spoons) as well as Late Neolithic (complete metapodial awls and beads) and Middle Chalcolithic contexts (complete metapodial awls and projectile points). Possible explanations may of course include the resistance of well-polished surfaces to weathering. However, deliberate burial of still useful objects may also be related to personalization of material objects, that is, objects taking on some personal aspect of the people who used them over long periods. Tools strongly associated with an individual may well be buried as offerings or removed from active use when the person associated with them leaves the community or dies. Analysis of the surface condition of bone tools will also be discussed as a useful methodological tool for the analysis of settlement formation processes.

Dr A. M. Choyke — Aquincum Museum, Zahony u. 4 — 1031 Budapest, Hungary

H13017cho@iif.hu or Choyke@ceu.hu

M. Daróczi-Szabó — Institute of Archaeology — Eötvös Loránd Univ., Múzeum körút 4/b, 1088 Budapest

Lea3@ciromail.hu

5- VIVIANA MITEVA

OBSERVATIONS ARCHEOZOOLOGIQUES ET TAPHONOMIQUES SUR LES ENSEMBLES OSSEUX DU PALEOLITHIQUE SUPERIEUR DE LA GROTTE KOZARNIKA, BULGARIE DU NORD : LA FRAGMENTATION.

La grotte Kozarnika, Bulgarie du Nord, a livré une séquence du paléolithique inférieur au paléolithique supérieur. Le matériel dont il sera question ici provient de deux niveaux du début du paléolithique supérieur, datés d'environ 25.500 ans BP pour la couche 5b (niveau archéologique VI) et entre 36.000 et 39.000 ans BP pour la couche 5c (niveau archéologique VII). Les niveaux sont riches en outils de silex et matière dure animale, les traces anthropiques ou non anthropiques (laissées par des animaux) ne sont pas fréquentes et les associations fauniques de ces deux couches sont peu différentes. En ce qui concerne l'activité cynégétique, nous proposons une chasse non spécialisée. La fragmentation est très importante et présente des différences entre des couches ce qui renvoi à la question de la formation des ensembles archéologiques et du type de site.

V. Miteva — New Bulgarian University — 1000 Sofia, 64 rue Graf Ignatiev - Bulgarie

viviana_bg@yahoo.com

6- CRISTINA SAN JUAN-FOUCHER

MANUFACTURING BONE IN THE SOLUTREAN: TECHNICAL AND MORPHO-TYOLOGICAL PATTERNS OF PYRENEAN COLLECTIONS

A recent research on the Pyrenean worked bone material enable us ones to highlight manufacture sequences involved in the blank production of the hunting (throwing spears) and domestic (awls and needles) equipment. R. and S. de Saint-Périer excavations (1912-1950) at Rideaux and Harpons caves at Lespugue (Haute-Garonne), as well as Isturitz cave (Pyrénées atlantiques), yielded series from Solutrean layers. With help of new AMS dates on faunal remains and waste of debitage, the whole material has been considered here. Focussed on stratigraphical data, analysis of morpho-typological criteria of the considered equipment, with a critical comparative purpose, brings to better characterize regional *facies*. First absolute chronocultural sequence concerning the North face of the Pyrenean is thus available for the Solutrean.

C. San Juan-Foucher — SRA Midi-Pyrénées / UMR 5608, UTAH, Toulouse-le-Mirail

cristina-sanjuan@culture.gouv.fr

7- MARTINA LÁZNIČKOVÁ, STÉPHANE PÉAN

NON-UTILITARIAN TRANSFORMATION OF MAMMAL MANDIBLE. MAGDALENIAN EXAMPLES FROM PEKÁRNA (MORAVIA, CZECH REPUBLIC) AND LA VACHE (ARIÈGE, FRANCE)

Mammal mandibles were used for food purpose and also were shaped into non-utilitarian items of 'art mobilier'. Two different ways of working mandibles into 'art mobilier' artefacts were observed, differing in the level of bone modification. The established "chaînes opératoires" show how important this raw material is, and which selection criteria were used in relation to the mammal. It brings to reconstruct possible ways of mammal hard material selection for non-utilitarian purposes, in two Magdalenian sites from distinct geographical contexts.

Martina Lázničková-Galetová — Department of Anthropology - Faculty of Philosophy & Arts
University of West Bohemia in Pilsen — Tylova 18 - 30125 Plzeň CZECH REPUBLIC
laznicko@yahoo.fr

8- CAROLE VERCOUTÈRE

THE EXPLOITATION OF OSSEOUS RAW MATERIALS AT THE BEGINNING OF THE EUROPEAN UPPER PALAEOLITHIC - EXAMPLE OF MAMMOTH IVORY AT THE ABRI PATAUD (DORDOGNE, FRANCE)

The abri Pataud (Dordogne, France) is well known for the important exploitation of Reindeer by Aurignacian and Gravettian people. But, recent studies about bone industries and body ornaments show that Mammoth also played a significant role, maybe more symbolic, within the human populations that lived there at the beginning of the Upper Palaeolithic.

No Mammoth bones have been discovered, whatever the level. This species is only represented by raw ivory fragments and ivory artefacts. So ivory always corresponds to an imported raw material. What is the origin of this Mammoth ivory?

Ivory objects were discovered mainly in three levels: level 11 (Early Aurignacian), level 5 (Early Gravettian) and level 2 (Final Gravettian). Among these objects are beads and pendants, the production of which appears to be standardized. Moreover, these body adornments seem to be culturally characteristic. For the level 11, basket-beads are typical artefacts of the Early Aurignacian of southwest of France. For the Gravettian, some pieces similar to those from the abri Pataud were discovered in Central and Eastern Europe. Therefore, it implies the question about how to characterise a culture thanks to bone industries and body ornaments, the sharing of same cultural codes between human groups and the geographical extension of cultural traditions. These issues were actually hardly debated especially to better understand the emergence of modern behaviours in Europe at the beginning of the Upper Palaeolithic.

Dr C. Vercoutère — Muséum National d'Histoire Naturelle — USM 103 du Département de Préhistoire
UMR 5198 du CNRS — IPH, 1 rue René Panhard, 75013 Paris, France
cvercout@mnhn.fr

9- CHRISTIAN KÜCHELMANN, JÖRG SCHIBLER, PETAR ZIDAROV

PRESENTATION OF THE WEB SITE WBRG

C. Küchelmann — Brême, Germany — info@knochenarbeit.de
Pr Dr J. Schibler — Institut für prähistorische und Naturwissenschaftliche Archäologie), Basel, Suisse joerg.schibler@unibas.ch
P. Zidarov — University of Tübingen, Germany — topetar@yahoo.com

TUESDAY AUGUST 28TH

10- MARCIN DIAKOWSKI AND BERNADETA KUFEL

THE ANTLER TINES FROM POBIEL 10

The large group of bone and antler artifacts were discovered during the archaeological excavations of the Mesolithic site Pobiel 10, Lower Silesia, Poland in the eighties. The artifacts were described by the supervisor Z. Bagniewski. The finds were deposited in the peat level dated to 8450±50 BP (GrN-13857). The flint assemblage of Komornica Culture was discovered on the slope adjacent to the former river bed with mentioned peat level.

The antler tines of red deer (*Cervus elaphus*) are the most numerous among the whole group of artifacts. Six tines Bagniewski defined as the waste products, further eleven as the daggers. The new preliminary analysis of the artifacts led us to draw the different conclusion concerning technological and functional aspects of the seventeen tines. Such antler tines could have been used as wedges, tools for digging, billets used in indirect percussion or hafts. The experimental method and the microscopic analysis were applied to determine function and manufacture process. We believed that the new investigation will provide more information about antler processing, predetermination depending on antler tool use and technique of flintknapping used by the Mesolithic hunter – gathers identified with Komornica Culture.

M. Diakowski and B. Kufel — Institute of Archaeology University of Wrocław ul. Szewska 48 — 50-139 Wrocław, Poland

bernadeta.kufel@wp.pl, bonetool@wp.pl

11- NATACHA BUC

BONE BI-POINTS: TESTING FUNCTIONAL HYPOTHESIS

Bone bi-points are tools found in archaeological contexts from the entire world, but their function is extremely controversial. While some authors define them as hafted implements used as spears, others believe they represent fishhooks, fish gorges or elements of composite toggling harpoons.

Several bone bi-points were recovered from Late Holocene archaeological sites from lower Paraná's river wetland (Argentina). In this context of societies based on hunting (small to large preys as *Cavia aperea*, *Myocastor coypus*, *Ozotoceros bezoarticus* and *Blastoceros dichotomus*), gathering and fishing (primarily *Prochilodus lineatus* and *Pterodoras granulosus*), each functional alternative for bi-points would be crucial. Mainly, if we consider the general characteristics of the archaeological record: scarcity of lithic raw material (not only in the area but in the archaeological assemblage); low representation of lithic points; high variability of bone tools, including different types of bone points and absence of hooks (despite the great number of fish remains).

For that reason, we encourage the functional study of bi-points testing the main cited hypotheses, through various analytical lines of evidence. First of all, we present morphological and metrical data, related to physical structure of the assemblage and selection of bone raw material in terms of their mechanical properties and availability. Finally, we present, maybe the most crucial line: the results of microscopic analysis.

N. Buc —National Institute of Anthropology and Latin American Thought (INAPL)

National Council of Scientific and Technical Research (CONICET) — Argentina.

natachabuc@gmail.com

12- CHRISTIAN GATES ST-PIERRE

THE IROQUOIAN BONE TOOL KIT: CHARACTERISTICS AND PROBLEMS

The Iroquoian populations living in Northeastern North America at the end of prehistory (Late Woodland period, AD 1000-1550) are renowned for the quality and beauty of their ceramic productions, but they were also gifted makers of bone tools and other bone objects (ornaments, game pieces, etc.). This paper will first present a detailed description of the various functional categories of bone tools typically found in prehistoric Iroquoian bone tool kits. The major similarities and differences between the bone tool assemblages of the various Iroquoian sub-groups (the Iroquois, Hurons, St. Lawrence Iroquoians, etc.) will be highlighted. This will be followed by a discussion of some important problems frequently encountered when studying

Iroquoian bone artifacts, regarding morphological standardisation, functional identifications and geographical distributions, for example.

Dr C. Gates Saint-Pierre — Ethnoscop — Montreal, Canada
cgates70@yahoo.fr

13- MIKHAIL ZHILIN

MESOLITHIC ANTLER STAFF HEADS FROM UPPER VOLGA AND EASTERN URALS

Antler staff heads are rare finds at Mesolithic sites of Eurasia. They can be divided into two groups. The first one includes staff heads made from a single piece of elk antler in the shape of an elk head with a long neck without any perforation for a wooden handle. The pronounced polishing of the neck indicates that it was used as a handle. So they can be described as short intact staves. These artifacts come from a late Mesolithic cemetery at Olenii Ostrov in Onega Lake in Southern Karelia. They were published several times and are more or less well known.

The other group unites elk antler figurines with a perforation for a wooden handle in the middle, indicating their use as staff heads. Three elk antler figurines come from Upper Volga region. The first one was found in the terminal Mesolithic layer of Ivanovskoye 7 site and is dated to the early Atlantic period by pollen and about 7500 – 7300 BP uncalibrated by C-14. This artifact is an image of a fantastic creature combining features of different animals, birds, probably some features of a snake or lizard.

Two others also with perforations come from Zamostje 2 site. One was found in the late Mesolithic layer, dated to early Atlantic period by pollen and about 7400 – 7300 BP uncalibrated by C-14. The other is a stray find. Both are heads of fantastic creatures, combining features of some mammal and a bird of prey.

The last one comes from the famous Shigir collection of Sverdlovsk regional museum. It is a stray find discovered during gold mining at Shigir peat bog in late XIX century. Stylistic peculiarities and some other data indicate its most probable dating to the Mesolithic. It is also an image of a fantastic creature combining features of a wild pig and wolf or other beast of prey.

Detailed description, illustrations and analysis of these perforated staff heads will be given in the paper.

Dr Mikhail Zhilin — Institute of Archaeology, Russian — Academy of Sciences
Dmitri Ulyanov street 19, Moscow 117036 Russia
mizhilin@yandex.ru

14- CORNELIU BELDIMAN & DIANA-MARIA SZTANCS

BONE ARROW HEADS IN THE MESOLITHIC OF THE IRON GATES, ROMANIA: A PALEOTECHNOLOGIC APPROACH

The Mesolithic in the South-Western region of Romania, the Iron Gates of the Danube and immediately adjacent area (middle 10th millennium – middle/second half 8th millennium BP; end Pre-Boreal – Boreal – beginning Atlantic) is archaeologically associated with Schela Cladovei culture. The left bank of the Danube is a peripheral area, marking the North-Eastern limits of this Mesolithic culture that seems to have spread over a large area including the North-Western regions of the Balkan Peninsula (the present days territory of Montenegro and Serbia; see the well-known sites from Lepenski Vir I-II, Padina, Vlasac, Crvena Stijena etc.).

At present the repertoire of discoveries from Romania includes 8 sites situated along a 150 km long stretch of land including the Iron Gates, on the left first terrace or on some islands in the Danube, from Pescari (up-stream) to Ostrovul Mare (down-stream).

The paper is the first detailed synthesis of the systematic analysis of 25 arrow heads made out of fragments of long bones of bovids, red deer and roe deer. The artifacts are recovered between the 1960s and the 1980s during extensive field research from 4 open air sites: Ostrovul Banului (2), Ostrovul Corbului (1), Ostrovul Mare Km 873 (4), Schela Cladovei (18). These come from isolated discoveries as well as from graves found within the sites, under or between huts.

Taking into account the morphology of the section of the proximal part (oval, sub-oval, convex-concave, triangular, rectangular) a typology including 5 types is proposed.

Using the low power microscope analysis, the main attention is focused on the traces related to the technology of manufacturing and to the traces of use (mainly the fractures). Of particular interest are the artifacts discovered *in situ* and associated with or fixed in human skeletal elements e.g. calvarium, vertebra, femur etc. We therefore have the unique opportunity to study and compare the traces of use in a clear context and to estimate the parameters and efficiency of the bow used by the Mesolithic people here.

The traces of manufacture show the use of different techniques of debitage and faconnage: splitting and transverse sawing; intense longitudinal scraping; superficial sawing in order to obtain oblique and transverse grooves that allowed a

better axial fixing by binding of the arrow head in the wooden splitting haft. There is no clear evidence for the employment of adhesive-like substances.

Fractured pieces (proximal parts) suggest the current extraction of the damaged arrow heads from hafts in order to fix a new fully functional one; some of them are reshaped probably fixed in the haft (see the significant reduced length). The mesio-distal parts recovered from the sites are probably recuperated from animal targets.

The current use of bow and arrow in the Mesolithic of the Iron Gates allowed the earliest documentation of prehistoric warfare in Romania and southeastern Europe.

Dr C. Beldiman — *Christian University Dimitrie Cantemir, Faculty of History, Bucharest, Romania*

D.-M. Sztancs — *Lucian Blaga University, Faculty of History and Cultural Heritage Nicolae Lupus, Sibiu, Romania*
cbeldiman58@yahoo.com

15- EVA DAVID

ANATOMICAL PARTS AND SPECIES USED BY LAST PREHISTORIC HUNTER-GATHERERS IN EUROPE.

Numerous species have been used during the Early Mesolithic (ca. 9100 to 7000 BC). They concern mainly large ungulates and carnivorous. Besides species with shells have been used, birds and rodents also retained attention. Of anatomical parts, antlers and limb bones were most appropriate to manufacture tools and arms. Together with other anatomical parts, like labials, they delivered large set of forms judiciously used to manufacture all kind of objects. One will focus on comparisons between faunal species left on archaeological sites and anatomical parts/species used as raw material for the industry. Moreover, comparisons between types of anatomical blanks and types of objects will hopefully unearth cultural choices of last prehistoric hunter-gatherers in Europe.

Dr E. David — CNRS – UMR 7055 *Préhistoire et technologie*

21 Allée de l'Université – 92023 Nanterre cedex

eva.david@mac.u-paris10.fr

16- SVETLANA SAVCHENKO

TECHNOLOGY OF THE MANUFACTURE OF MESOLITHIC SLOTTED ARROWHEADS FROM EASTERN URALS AREA

In summer 2006 the author together with Mikhail Zhilin carried out an experimental manufacture of a flat slotted asymmetric arrowhead with a wedge-like base from elk metapodial bone. Such arrowheads are specific for the Mesolithic of the Urals area and are not met anywhere else.

Technology of the manufacture of such artifacts from the famous Shigir collection was studied with the help of optical microscope MBS-10 with magnifications from 5x to 56x in Sverdlovsk regional museum and in the State Hermitage. This collection is composed of stray finds made during gold mining in late XIX – early XX centuries. Its earlier part is dated to the Mesolithic. Arrowheads of this type were made from long narrow blades cut from diaphyses of tubular elk bones. The preform was roughly modeled with a burin and a scraper, than slots for inserts were cut. The next stage was accurate planing of the tool surface with a knife. After it the majority of arrowheads were carefully polished. Ornamentation was carefully engraved with a burin with a very sharp edge, most probably a broken blade or a flake. Arrowheads were ornamented after planing but before polishing. Rounding and polishing of edges of engraved lines indicate this. Inserts were put into slots of arrowheads and fixed with dark glue, made, probably from coniferous pitch. The glue was probably put in the slot and heated before mounting inserts, as observed on Mesolithic slotted arrowheads from Eastern Europe. The inserts still preserved in slots of such arrowheads are regular unretouched microblades, obtained by pressure technique. Many of them display edge damage typical for inserts of projectile heads.

All modes of bone treatment, observed on arrowheads from the Shigir collection were used during our experiment. The chain of operations was also the same. Results of these experiments will be presented in the paper.

Dr S. Savchenko — Sverdlovsk regional museum — Malysheva street 46, Ekaterinburg 620151 Russia

mizhilin@yandex.ru

WEDNESDAY AUGUST 29TH

17- VIVIAN SCHEINSOHN

DOWN TO THE BONE: BONE TECHNOLOGY IN ARGENTINIAN PATAGONIA

Nowadays, the many sites (which includes Monte Verde, Los Toldos, Piedra Museo, Cerro Casa de Piedra among others) dated before 10.000 BP in Patagonia; the region located at the Southern tip of South America, allowed to archaeologists working there to reach an agreement about the peopling of that area, established since at least that date. Bone technology was developed since then onwards, reaching a high degree of elaboration and abundance in the archaeological record of coastal sites. By the contrary, in continental Patagonia there were few bone tools but they were recorded almost in every site. In spite of that situation bone tools were neglected in the history of archaeological research with most researchers only mentioning its presence. In the hope to change this situation and departing from previous works (Scheinsohn 1992, Nami and Scheinsohn 1993, Scheinsohn 1997, Scheinsohn 2002, Scheinsohn and Lucero 2006) in this paper I intend to explain how bone materials were exploited in that region. Spatial scale was set to the Argentinean Patagonia, considering tools from Northern (Piedra Parada Locality) and Southern Patagonia (Cerro casa de Piedra locality and Tierra del Fuego) as well as bibliographic sources.

Dr V. Scheinsohn — Instituto Nacional de Antropología y Pensamiento Latinoamericano (INAPL) — Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET)
3 de Febrero 1370 (1426) Buenos Aires — Argentina.

18- CORNELIU BELDIMAN & DIANA-MARIA SZTANCS

PERFORATED ADORNMENT IN THE PREHISTORY OF ROMANIA: ANIMAL TEETH AND THEIR IMITATIONS

The poster presents the conclusions of a systematic analyze of 282 pieces of adornment made on animal teeth as well as some of their imitations in bone. The artifacts are recovered in 1950s – 1980s during extensive field research from 24 sites all over the country and belong to the 8 Upper Paleolithic, Epipaleolithic, and Neolithic cultures dated along over 10 millennia (between ca. 30/25 kya and 3 kya B.C.).

The repertory includes isolated discoveries coming from open air and cave sites (almost all pieces dated in the Upper Paleolithic and Epipaleolithic known today), as well as some discoveries in the inventory of the graves in necropolis (Cernica – Neolithic) and in deposits of “prestige artifacts” (Brad, Habasesti, Izvoare – Cucuteni culture).

The teeth were procured from different hunting species: beaver, bovids, cave bear, fox, red deer, wild boar, wolf; the single domestic species represented is the dog. The most of teeth are bovid incisors, wild boar’s tusks and especially red deer canines. Of particular interest is the large set of red deer (*Cervus elaphus*) canines and their imitations in bone (small fragments of long bones, present especially during the Neolithic in the deposits of the Cucuteni culture). These artifacts quantitatively dominate the completely worked osseous assemblage analyzed. At the same time, they are the most expressive from a paleotechnologic point of view. This is the reason that here special attention is to be paid to them in this synthesis.

Using the low power microscope analysis, the main attention is focused on the technology of perforation in order to: define on the basis of traces preserved the procedures applied; define the average of different solutions of perforation during the cultures and epochs represented; testing the role of this aspect of paleotechnology as cultural marker.

The common parameters systematically studied are the morphology of the perforation on the apical surfaces and the traces preserved inside the holes. The most part of the objects have a single perforation; some of them have two functional perforations and some were repaired after the damage of initial perforation during manufacture or use.

On this basis, some hypotheses of reconstruction of the «chaîne opératoire» of the perforation as well as some hypotheses of utilization are proposed. The traces of manufacture suggest the use of different techniques of debitage, façonnage and perforation (often combined): sawing and splitting of the tooth (very rare, one case); preparation of the proximal (apical) surfaces on both sides by scraping (Upper Paleolithic and Epipaleolithic) and abrasion (Neolithic); lateral or bilateral perforation by: grooving; alternative rotation; calibration of the margins by alternating rotation of what was probably a simple lithic tool; complete rotation (Upper Paleolithic and Epipaleolithic); drilling technique (Neolithic).

Dr C. Beldiman — *Christian University Dimitrie Cantemir, Faculty of History, Bucharest, Romania*

D.-M. Sztancs — *Lucian Blaga University, Faculty of History and Cultural Heritage Nicolae Lupus, Sibiu, Romania*
cbeldiman58@yahoo.com

19- GAELE LEDOSSEUR

THE NEOLITHISATION IN THE LEVANT : IMPACT OF ANIMAL HERDING ON THE EXPLOITATION OF OSSEOUS BONE MATERIAL, FROM RETICENCE TO ADOPTION OF DOMESTIC HERDS.

The Neolithisation in the Levant is characterized by many changes, from technical and economical points of view as well as social and symbolic ones. While the knowledge on this slow process gets richer, the field of investigation remains important. Our aim is to contribute to a better comprehension by studying a field often neglected by research because it is supposedly too much stable : the exploitation of osseous raw material. This field, however, should be sensitive to an important innovation during the Neolithisation : the animal herding in the PPNB. In this article we will state and discuss the impact of this economical change in order to get new insights on the changing relation between Man and Animals : do the makers use the new source of raw material represented by domestic goats and sheeps or do they stay attached to hunted animals like gazelles ? How do they treat the bones of these two kinds of sources ?

After having succinctly presented methods to determinate species, we will see that until the middle PPNB, the makers keep their preference for gazelles appreciated since the Natufian, while in the late PPNB they choose more frequently a new resource : the domestic herds. This will raise a discussion about the motivations to persist, and then change the habits. We will see also that while goats/sheeps and gazelles can be treated the same way in industry, differences exist as well, as it is observed in other Neolithic contexts. All these informations will contribute to a better comprehension of the changing relation between Man and Animals, and through, to the Neolithisation.

Dr G. Ledosseur — UMR 7041 ArScan — Nanterre

gledosseur@hotmail.com

20- FRANÇOIS POPLIN

DES FAUCILLES DE SILEX SUR ANDOUILLETS DE CERF DE ÇATAL HÜYÜK (TURQUIE) AUX FAUCILLES DE FER DENTÉES SUR MÉTAPODES DE BŒUF DE MONTAILLOU (OCCITANIE) : UNE HISTOIRE DE LONGUE DURÉE À TRAVERS L'ESPACE MÉDITERRANÉEN.

Le musée d'Ankara présente des faucilles de Çatal Hüyük à armature de silex dont la monture et le manche sont taillés dans une pièce osseuse indiquée en anglais *horn*, alors qu'il s'agit d'*antler* au sens littéral, étymologique, du latin *ante oculum* (cf. français *andouiller*), c'est-à-dire de la grande pointe de la ramure du cerf qui est *devant l'œil*. Ainsi associées aux premières manifestations de l'emprise humaine sur les plantes par la faucille, les pièces de matière osseuse livrées par l'animal vont entrer dans un long silence jusqu'aux faucilles de fer dentées sur des supports faits de métapodes de bovins ou de chameau (principalement), lesquels gardent les marques du travail au ciseau et au marteau. Les plus anciens connus de ces ossements sont hellénistiques, du pourtour de la mer Noire, les plus récents étaient encore en usage en Tunisie et dans la péninsule Ibérique au XXe s., où vivent encore quelques anciens artisans de cette technique. Celle-ci a connu une apogée en Méditerranée occidentale médiévale, marquée par un très riche gisement au Maroc et un franchissement caractéristique des Pyrénées en Aquitaine, où Montailloü est un exemple parmi plus de vingt autres. La première description de cette technique est due au Français Charles Lallemand, en 1890, dans le souk de Tunis, avec une figure malheureusement trompeuse, la lame de la faucille étant présentée sur le dos pour qu'on la voie mieux, et non pas à plat sur l'os comme le fonctionnement l'exige. À côté de cela, le premier auteur à parler de faucille dentée est l'agronome latin Columelle (1er s.), et il est né à Cadix (Espagne).

Pr Dr F. Poplin — Muséum national d'Histoire naturelle

Laboratoire d'Anatomie Comparée — 55, rue de Buffon 75005 F-Paris

poplin@mnhn.fr

21- DANIELA FEHLMANN

WORKED BONE, ANTLER AND TOOTH OBJECTS FROM ASPARN/ SCHLETZ (AUSTRIA)

The Neolithic site of Asparn an der Zaya/ Schletz in Lower Austria comprises a fortified settlement from the end of the linear pottery culture.

It is located only 35 kilometres west of the border with Slovakia and 23 km south of the border with Moravia (Czech Republic). This is one of the driest and warmest regions of Austria, with loess soils of the highest

quality. In the immediate surroundings we know quite a few sites of the Linear Pottery culture, too¹, but none of it is studied.

Systematic excavations at Asparn /Schletz started in 1983 and ended in summer 2005.

On the site there are two oval fortification ditches (trapezoid section, up to 4 meters broad and 2 meters deep) that run parallel to each other. They are filled with a mixture of late Notenkopf and early Zseliz pottery -whereas the third ditch, which is suggested to be the oldest², is filled with only linear ornamented pottery as well as Notenkopf pottery.

What perhaps most people know about the site of Asparn/Schletz is the fact that there were large numbers of human bones found at the base of the two fortification ditches, which has been considered evidence for an abrupt end to the Early Neolithic settlement at Asparn/ Schletz³.

Judging from the pottery, the site has always been open to the south-east (Slovakia, Transdanubia). Like the pottery, the bone artefacts, studied in my thesis, show similarities with those in Šturovo⁴, but also with assemblages in Germany (like those of Herxheim/ Rosheim⁵, Veihingen/ Enz⁶ and Bad Nauheim-Nieder-Mörlen⁷).

The total amount of worked bone objects studied is 143, worked antler pieces included. The majority of the industry can be attributed the layers and features that contained a mixture of Notenkopf and Zseliz pottery. 15 are without stratigraphical context, 11 from Aunjetitz A2 / Věteřov context. Typologically, the bone artefacts have been subdivided into the following categories: points; spatulae; antler tools; tooth-pendants, including red deer canine beads and their imitations; bone-pendants; needles and others.

A report on the faunal assemblage from trench 20 (1991) was done by E. Kanelutti⁸.

D. Fehlmann — University of Vienna — 1010 Wien, Dr-Karl-Lueger-Ring 1

danielafehlmann@yahoo.de

22- ERIKA GAL

MIDDLE NEOLITHIC BONE ARTEFACTS FROM NORTHERN-HUNGARY

Filling a chronological gap between the wide range of well-known early Neolithic Körös- and late Lengyel culture artefacts excavated from a great number of Neolithic settlements in Hungary, the first major assemblage of Middle Neolithic (Zseliz and Notenkopf i. e. Musical Note culture) bone implements came from the recently excavated multiperiod site of Karancsság in the northernmost region of Hungary.

The 23 antler-, bone- and tusk implements, representing less than 4% of the Middle Neolithic animal bone assemblage, were found in domestic features. The majority (12) of the artefacts are fine points made from the metapodia of Caprinae (Schibler type 1/1). Both subadult and adult animals provided raw material for these implements. Six spatulae and knife-points have been prepared from the ribs of large ruminants. A long point was also crafted from the split metapodium of a large Ungulate. The rest of the utensils include an antler handle (red deer), a chisel and point (roe deer) as well as a wild boar tusk retoucher. A single instrument from the assemblage was made from an avian bone. The 72.4 mm long tube cut off from the ulna of a grey-lag goose may have served as a case or may have been a part of a panpipe-like music instrument.

¹ Fundberichte Österreichs, 7, Wien 1971, 8, 16, 18; Fundberichte Österreichs 15, Wien 1976, 153, 170; Fundberichte Österreichs 19, Wien 1980, 310.

² H. Windl, Rätsel um Gewalt und Tod vor 7.000 Jahren - Eine Spurensicherung, Asparn/Zaya 1996, 10.

³ M. Teschler-Nicola et al, Anthropologische Spurensicherung- Die traumatischen und postmortalen Veränderungen an den Linearbandkeramischen Skelettresten von Asparn/Schletz, in: 47 – 64. M. Teschler-Nicola et al, Anthropologische Spurensicherung, Die traumatischen und postmortalen Veränderungen an den linearbandkeramischen Skelettresten von Asparn/Schletz, Archäologie Österreichs 7/1, Wien 1996, 4-12. ¹⁴C data samples measured at VERA are published: E. Wild et al, Neolithic Massacres: Local skirmishes or general warfare in Europe? Radiocarbon, Vol 46, Nr. 1, 2004, p 377 – 385.

⁴ J. Pavúk, Šturovo, Ein Siedlungsplatz der Kultur mit Linearkeramik und der Želiezovce-Gruppe, Nitra 1994, 126-130.

⁵ F. Haak, Die bandkeramischen Knochen-, Geweih- und Zahnartefakte aus den Siedlungen Herxheim (Rheinland-Pfalz) und Rosheim (Alsace), Magisterarbeit, Freiburg i. Br. 2001/2002.

⁶ I. Sidéra, Die Knochen-, Geweih- und Zahnartefakte aus Vaihingen- Ein Überblick, in: Die bandkeramischen Siedlungsgrabungen bei Veihingen an der Enz, Kreis Ludwigsburg (Baden Württemberg), Bericht der römisch-germanischen Kommission, Band 79, 1998, 81-90.

⁷ A. Hüser, Die Knochen- und Geweihartefakte der linearbandkeramischen Siedlung Bad Nauheim-Nieder-Mörlen in der Wetterau, Kleine Schriften 55, Marburg 2005.

⁸ E. Kanelutti, Quantitative Verteilung der Tierknochen, in: Rätsel um Gewalt und Tod vor 7.000 Jahren, Asparn/Zaya 1996, 24, 25.

Marks of curation and handling polish noted on most of the implements indicate their long time use. The number of discarded but well preserved tools would suggest the loss of utensils or the death of their owners, rather than the abandonment of the settlement that was populated continuously until the Late Neolithic (Lengyel culture).

Dr E. Gál — Archaeological Institute of the Hungarian Academy of Sciences
gal_erika@yahoo.com

23- SABINE DESCHLER-ERB, ELISABETH MARTI-GRÄDEL, JÖRG SCHIBLER

EARLY EVIDENCE OF SPECIALISED CRAFTS AT A NEOLITHIC SITE IN SWITZERLAND.

The Neolithic lakeshore settlement „Arbon Bleiche 3“ (Lake Constance, Switzerland) was founded in 3384 BC and abandoned in 3370 BC. The excavations have brought to light 27 houses and an extensive inventory of finds. Among them a total of over 71000 faunal remains and 2782 bone and antler artefacts were found. Thanks to the availability of the structure analysis, it's possible to work on the material not only typologically, but also in reference to the settlement organisation. By analysing the composition of the find inventory of each house we can get more information about the function of the different artefacts. It's also possible to identify households which were specialised in production and use of certain artefacts.

Dr S. Deschler-Erb, Dr Marti-Grädel, Pr Dr J. Schibler
Institut für Prähistorische und Naturwissenschaftliche Archäologie (IPNA) — Spalenring 145 — CH - 4055 Basel
Sabine.deschler@unibas.ch

24- GEORGIA STRATOULI

ANTLER & BONE FISHING EQUIPMENT
FROM THE NEOLITHIC LAKE-SIDE SETTLEMENT OF DISPILO, NW GREECE.

Dr Georgia Stratouli — Hellenic Ministry of Culture
17th Ephorate of Prehistoric & Classical Antiquities — Aristotelous 16 - 582 00 Edessa – Greece
stratman@panafonet.gr

25- LUMINITA BEJENARU, GEORGE BODI, ROMEO CAVALERIU AND SIMINA STANC

BONE, ANTLER AND TOOTH ARTEFACTS FOUND IN THE CHALCOLITHIC CUCUTENI SITE FROM HOISEȘTI, ROMANIA

In 2003-2004, excavations at the Chalcolithic Site from Hoisești, Romania, recovered about 3500 animal remains. Among this assemblage, 80 bone, antler and tooth artefacts has been identified. The artefacts include tools (chisels, drillings, and spatulas) and ornaments (pendants). In most of the cases raw material of wild animals (*Cervus elaphus*, *Capreolus careolus*, *Sus scrofa*) has been used, but artefacts made of bones and teeth of domestic animals (*Ovis aries*/*Capra hircus*, *Sus domesticus*) have also been found. The relative great number of certain artefacts occurring in different states of manufacture respectively use wear allow a reconstruction of their production.

L. Bejenaru, G. Bodi, Romeo Cavaleriu and S. Stanc — University of Iasi — Romania
lumib@uaic.ro

26- MONICA MĂRGĂRIT

THE UTILIZATION OF THE HARPOON IN THE GUMELNIȚA CULTURE
CASE STUDY: THE SETTLEMENT FROM BORDUȘANI POPINA (IALOMIȚA DISTRICT)

The Gumelnița culture evolved in the V millenium B.C., its spreading area including the south and south-east part of Romania, the eastern half of Bulgaria (known under the name of Kodjadermen – Karanovo VI culture), reaching, to the south, to the Aegean Sea.

The Gumelnița settlement from Bordușani Popina is situated on Ialomița Island, on the lower course of the Danube. Here it was discovered a lot of 16 harpoons, from which two were in the processing stage.

The special diversity of this type of material raises a series of questions, starting from which the main stages of a technical – functional study should be outlined: what criteria determined the type of the chosen support? Why it was chosen a certain operational chain, and not another, or why there were chosen certain stages in the chain (the stages of the operational chain for obtaining harpoons, at least for those we are studying, are very diverse and it would be very interesting to establish if they correspond to a certain type of harpoon and a certain functionality)? What is the reason why, in the same type of equipment, we identify a great morphologic variety of the active part (barbed harpoons with one/ two rows, disposed symmetrically or not).

We can identify an eventual specialization (craft?) of certain persons or the entire human group was manufacturing its equipment according to the actual needs? The previous variables are generated by ecological or social factors? The archaeological context of the discoveries could offer us data for the identification of a certain “workshop” or of a ritual deposit? The conclusions of the study were structured after four variables: raw material, technique, production and administration.

- *The acquisition of the raw material.* There were three general criteria, even though, probably, not the only ones, which determined the selection on a certain raw material and not another: reserve, structural and mechanical properties and cultural choice. According to the season or the circumstances, like the utilization as food source – the extraction of the marrow – the transformation of the bone in different tools can be limited or replaced with silex tools. Concerning the antler, its reserve varies after the annual development cycle, therefore after the season.

From the 16 harpoons we studied, only one was made of bone, the other ones being made of antler. The provisioning with antlers seems local, because in these settlements were identified antlers of *Cervus elaphus*. Moreover, we have clear proof that were used antler detached from the skulls by percussion but also fragments of fallen antler. Regarding the bone, the radical modification of the anatomical form didn't allow the identification of the species.

- *Technique.* The technical – typological study allows the approach of some problems related to the identification of the processing stages and their integration in the operational chain. We can establish in this way the techniques regarding the two major operations: breakage and shaping. To fracture the transverse antler was used mostly the direct percussion, at few samples being attested also the technique of sawing. The double groove was used to obtain the matrices of the future harpoons. Concerning the second stage, the shaping, was used the scraping but also the grinding. In a case intervened also the perforation performed alternatively from both sides.

- *Production.* It refers to the main types of equipment and to the reflection of the economical activities. The harpoons seem connected to fishing. The specialty studies from the settlement Brodușani – Popină shown the fact that the fishing, next to hunting and the collection of shellfishes, were the community's main food source. Among the species which seems to yield to such a fishing are the sheat fish, pike perch, cyprinids and even the carp, in the reproduction period.

- *The economy (administration).* All the harpoons were abandoned after their fragmentation. The peoples seemed to leave the equipment they couldn't serve and didn't try to use these tools by rearranging the fractured part. This is also a proof of the abundance of the raw material that didn't oblige them to a strict administration of the supports.

M. Mărgărit — Valahia University of Târgoviște — Lt. Stancu Ion 34-36, 130105, Târgoviște — Romania
editura@cetateadescaun.ro

27- PAM CRABTREE AND DOUGLAS V. CAMPANA

WORKED BONE FROM TEPE GODIN, IRAN

Tepe Godin is a Chalcolithic and Bronze Age site in western Iran that was excavated by the late T. Cuyler Young between 1969 and 1973. In 1979 Allen Gilbert completed an analysis of about 10,000 animal bone fragments from the Godin excavations. Gilbert argued that many of the faunal bones in the Godin assemblage had been used as expedient tools. For example, he suggested that caprine mandibles were used as scrapers. In preparation for the final site publication, we have had the opportunity to examine the rest of the faunal collection from Godin. Our research suggests that the Godin faunal collection includes a smaller number of bone tools and other worked bone objects. Many of these objects are extensively modified, and some appear to have been heavily used. This presentation will review the evidence for worked bone from Godin Tepe.

Pr Dr P. Crabtree and Pr Dr D. V. Campana — New York University — Anthropology Department
PamCDougC@comcast.net

28- HEIDI LUIK

ANTLER POINTS WITH SPIRAL USE-WEAR FROM THE LATE BRONZE AGE FORTIFIED SETTLEMENT OF ASVA IN ESTONIA

About ten tine tips and tines with traces of spiral use-wear have been found from the Late Bronze Age fortified settlement of Asva on Saaremaa, Estonia (about 830–520 BC). All these points are made from elk antler. Some of them are preserved only fragmentarily but some are whole. The other, thicker end of these objects may be almost unworked, cut smooth or gouged, as if the object had been hafted. Such antler points are typical only to Asva, they have not been found from other sites of the period in Estonia, neither have they been discovered from the Bronze Age settlements of Latvia or Lithuania, even though bone and antler artefacts of the period were quite similar throughout the eastern Baltic region. Bone points of varying size have been found from all Bronze Age settlements of the eastern Baltic, but none of them bears such spiral use-wear traces. The function of these objects is not known. The spiral traces on these antler points all run in the same direction – their use included anti-clockwise rotation of the object. Since the spiral traces are grooved rather deep in antler surface, the tools were evidently used on some rather tough abrasive matter, which contained larger protruding or harder particles or fibres.

Dr H. Luik — Institute of History, Tallinn University — Ruutli 6, 10130 Tallinn, Estonia
Heidi.Luik@mail.ee

29- JUSTYNA BARON

LATE BRONZE AGE BONE AND ANTLER IMPLEMENTS FROM SILESIA (SW POLAND)

The paper refers to discoveries of bone and antler implements made both at settlements and cemeteries dated back to the late Bronze Age and early Iron Age. The discussed area is Silesia – a historical region situated now mostly within the Polish borders.

Late Bronze Age and early Iron Age are very interesting periods with respect to technology of tools production. The societies of that time had a wide range of available materials: bronze, stone, antler, bone and, finally, iron. Some clay items are interpreted as implements associated with pottery production. Do the bone artifacts discovered at settlements and cemeteries differ? Were the implements found in the graves ever used or produced to be put into the grave, as it may be observed in case of metal objects? While analyzing the spatial distribution of the tools one may observe that they are often registered in the buildings or storage pits. Were the tools abandoned in places where they had been used as it is sometimes observed in pottery shards? My aim is to present discovered bone and antler artifacts and to analyze their possible functions based on microscopic observations. A particular attention is being paid to the spatial context of the finds. That includes analyses both on a single pit and a settlement level and refers to various site types.

J. Baron — Institute of Archaeology - University of Wrocław — ul. Szewska 48 - 50-139 Wrocław – Poland
jbaron@hist.uni.wroc.pl

THURDAY AUGUST 30TH

30- SANDRA L. OLSEN

**COPPER AGE BONE ARTIFACTS FROM THE BOTAI
HORSE HERDERS OF NORTHERN KAZAKHSTAN**

Assemblages from three Botai culture settlements (3700-3100BC), including one consisting of nearly 1000 objects from the eponymous site, in northern Kazakhstan, shed light on numerous aspects of the lives of these early horse-herders. Their habit of stamping pottery, equestrian practices, incipient use of copper, and even their female clothing are all elucidated through these interesting and unique collections. Perhaps most intriguing are the unusual manufacturing processes they implemented, including knapping of dense equine metapodials and the high-risk practice of punching notches in horse rib pottery stamps. This latter process was difficult to replicate without producing undesirable spalling until the full process was thoroughly understood. This paper will explore both manufacturing and use wear through the combination of experimental replication and scanning electron micrography.

Pr Dr S. L. Olsen — Carnegie Museum of Natural History
5800 Baum Boulevard — Pittsburgh, PA 15206 - USA
olsens@carnegiemnh.org

31- VALENTIN PANKOVSKIY

**BONE AND ANTLER INDUSTRY FROM THE LATE BRONZE AGE SETTLEMENT SABATYNIVKA-I
(UKRAINE, SOUTH BUG)**

The LBA stratum at the eponymous site of the Sabatynivka culture was excavated by Arkadiy Dobrovolskiy in 1947-1948 (Dobrovolskiy, 1952). The report discusses raw materials, manufacture techniques and functions of 33 objects discovered there. Among them one can discriminate skates made of III horse metatarsi and cattle radii, needle from sheep or goat long tubular bone, arrowhead made of bone compact, awl and perforators from sheep tubular bones and compact of the cattle bones, cattle humerus spindle-whorl, potter's comb from cattle rib, cogged cattle, horse and deer scapulae for sheepskins processing, cattle mandible and deer pelvis tools of leather production, deer antler psalion, wastes (fragments of deer antler, cattle 3+4 metatarsi and horse rib with sawing and cutting traces left from metal ware). The herd of pets and wild fauna were the main sources of the raw materials. Parity of the bone types and functional types was closely related. Observation to the utilization patterns makes it possible to conclude that partial and full use of the anatomic form of bones was common. The usage of blanks was rare. Examined assemblage characterizes main features of the Sabatynivka culture bone and antler industry (Reinecke BrD).

V. Pankovskiy — Institute of Archaeology of the National Ukrainian Academy of Sciences
Department of Chalcolithic and Bronze Age Archaeology — Geroiv Stalingradu, 12 — Kyiv-210 — 04210 UKRAINE
pankovskiy@list.ru

32- KORDULA GOSTENCNIK

**BOVINE RIBS AS A RAW MATERIAL AMONG ROMAN BONE ARTEFACTS FROM VIRUNUM (SOUTHERN
AUSTRIA)**

Among the worked bones from the Roman town Virunum a small number proved to be made from ribs; these finds were all recovered during the early 20th c. As one of these is a half finished object, they were definitely produced in the local workshops. Although references as to workshop waste from Virunum (turning and carving) are known from excavation reports of the 19th c. already, more recent excavations did not reveal much waste material, besides a small number of antler tines or bovine horn core wastes. For the time being therefore, we can not tell yet, whether or not a workshop existed, which had specialised itself in the production of artefacts made from ribs.

The dating of these artefacts is rather hard to establish, as their context has not been recorded properly about a century ago. Virunum was mainly inhabited from the 2nd half of the AD 1st c. through 4th c. One of the artefact types, a rectangular tablet with a suspension ring, was in use in the older town on Magdalensberg already (50 BC – AD 50), whereas for the others, oblong objects with one blunt and one sharp end, parallels are hitherto known from eastern sites like Samaria or Betsaida only, dating roughly from the Roman period.

The tablets with a suspension ring from Magdalensberg were made from metapodials, a more suitable material for their production than ribs are. What could have caused this changing in the preference of raw materials later is hitherto unknown; the archaeozoological records from both sites did not give us any hints to solve this question.

The intended use of the artefacts ranges from textile implement to writing equipment, partly underscored by means of grave assemblages. It should be taken into account however, that many an implement could have been multi-functional and suitable therefore for different purposes.

K. Gostencnik, Linieng. 9/3, A-1060 Wien, Austria

kgosten@hotmail.com

33- SERGIU MUSTEAȚĂ, ALEXANDRU POPA

HORN HANDICRAFT IN THE EASTERN CARPATHIAN AREA DURING THE LATE ROMAN PERIOD

Most of the archaeological sites belonging to the Late Roman Period and located on the territory between Carpathian Mountains and Dniestr river have yielded numerous and diverse objects that prove the existence of a vast practice of the bone and horn processing.

One of the well-developed handicrafts during this period in the area of Sântana de Mureș-Černjachov culture was horn working. Evidence of this handicraft are archaeological artefacts (antlers, half-made objects, rejects and offal, and of course finished objects) attested in many settlements and cemeteries from discussed period and region.

Among the diverse artefacts manufactured of horn one could identify several categories of objects of varying uses: needles, pierces, tools accessories, pendants, decorative and dressing objects, etc. The most numerous and representative category of horn objects founded in the 3rd-4th centuries settlements and cemeteries are combs, worked out of three ranges of superposed plates fixed by cooper rivets.

Based on archaeological data discovered in the settlements and cemeteries from Bârlad-Valea Seacă and Mihălășeni from Romania, also Budești and Dănceni from Republic of Moldova, authors of this paper will analyses sequentially the technological stages of the horn processing: cutting, splintering/clefting, carving/hewing the half-made object, degreasing, evening, perforating, assembling, rivet and than decorating and final polishing. As a case study authors will present the combs working and typology, which will help to draw the picture of the level of horn handicraft development in the Eastern Carpathian region during the Late Roman Period.

Dr S. Musteață — History Department, “Ion Creanga” State University

1 Ion Creanga str., main building, 407, MD-2069, Chisinau, Republic of Moldova

sergiu_musteata@yahoo.com

Dr A. Popa

Römisch-Germanische Kommission des Deutschen Archäologischen Instituts

Palmengartenstr. 10-12, D-60325 Frankfurt am Main

popa@rgk.dainst.de

34- PAUL VAN OSSEL AND ISABELLE RODET-BELARBI

L'UTILISATION DU BOIS DE CERF DURANT L'ANTIQUITÉ TARDIVE : UN MARQUEUR CULTUREL ?

L'utilisation du bois de cervidé semble être restée longtemps marginale durant l'époque romaine, tandis que son emploi paraît être plus courant durant l'Antiquité tardive. Cette constatation générale sera examinée à la lumière d'un inventaire qui regroupera un maximum d'objets façonnés en os et en bois de cervidés découverts sur divers sites antiques en Gaule. La confrontation des données chiffrées permettra d'établir les proportions entre les deux types de matériaux et les domaines auxquels se rapportent les objets/outils façonnés dans l'une ou l'autre matière première.

Si l'un des objets les plus connus est le médaillon prophylactique fabriqué dans la base du bois, attesté sur différents sites (maisons, tombes...) dès la Tène finale et jusqu'à l'époque mérovingienne, une attention plus particulière sera accordée aux peignes et aux différentes matières dans lesquelles ils sont façonnés (ivoire, bois végétal, corne, bois de cerf). Fréquents dans les régions limitrophes de l'Empire aux IV^e et V^e s. dans des tombes d'hommes accompagnés de pièces d'équipement militaire, ces objets sont à l'origine de l'association entre la culture germanique et le travail du bois de cervidé. Ce matériau est, de ce fait, traditionnellement mis

en relation avec des influences germaniques qui accompagnent l'arrivée de groupes de populations extérieurs à l'Empire romain.

L'objectif de la communication est de dresser un état de la documentation disponible et de s'interroger sur la validité des modèles d'interprétation en présence.

Pr Dr P. Van Ossel — Université Paris X, UMR 7041 *Arscan* - Nanterre

Dr I. Rodet-Belarbi — INRAP, *CÉPAM*, UMR 6130 — Valbonne

isabelle.rodet-belarbi@inrap.fr

35- SIMINA STANC, LUMINITA BEJENARU

BONE AND ANTLER MANUFACTURING IN THE IVTH-VITH AD CENTURIES, ON THE TERRITORY OF ROMANIA

For the IV-Vth centuries, the combs are among the most characteristic artefacts made of red deer antlers. At Valea Seaca it was discovered the first IVth century AD workshops in Romania for chiselling red deer antlers; nineteen out of the thirty-four homesteads discovered were fitted out workshops of craftsmen, for chiselling antlers. Other similar workshops there were discovered at Celei. The spread of the simple composite combs, representing different types, is large on the Romanian territory, this kind of artefacts being characteristic for the Santana of Mures-Cerneahov Culture. This kind of artefact was among the most characteristic artefacts, between the artefacts made of bone or antlers, found in the tombs of this Culture.

Besides the combs, worked bone includes utilitarian tools (spindle-whorls, needles, awls, tubes for keeping needles, handles, templates, skates), ornaments (different types of pendants, beads). These artefacts were found in settlements and in tombs. In the VIth century, the double composite combs were characteristic.

S. Stanc & L. Bejenaru — University of Iasi, Romania

lumib@uaic.ro

FRIDAY AUGUST 31TH

36- NINA MANASERYAN

ARMENIA: WORKED BONES FROM ANCIENT AND MEDIEVAL SITES

Knife-type plates, scrapers, needles and spires made out of bones and horns of various animals were found out among numerous implements from Neolith settlements such as Verin Khatunarkh, Teghut and Tsakhkunk.

In the Artic collection of the late Bronze epoch there are represented cappings of bony spindles, a dudgeon made of roe deer horn and decorated with carved circles, an ivory bead, a bony torsion-form item (perhaps a seal) on which a lion face masks is engraved by points and lines, not so long tubular bone, perhaps, a half-finished pipe for a child.

Citizens and craftspeople of the Urartian cities made tools from bull and deer horns for spinning and weaving: cappings for spindles, bony bobbin skewers for textiles, as well as parts for harness, such as buckles for belts crossing. In Karmir blur there were found a lot of items made of carved bone: a small figurine of a lion with wings and human head, a fine and large toothed comb decorated with six-petalous rosettes and circles, a small spoon and cylindrical vessels figured with various patterns.

In the excavations of monuments located to the North-Eastern part of Armenia there are discovered the following items: a small bony box made of filed down deer horn, bony trihedral arrows with short round heft, spires, perhaps used in leather-processing, and spindles made of the cattle bones.

Decorations like bony necklaces and bracelets, beads made of bear and wolf perforated teeth, probably used as amulets, were widely known. The cowry and other clam-shells represent the oldest decorations.

On the basis of the existing material it can be indicated that in Armenia, alike all the other countries of the ancient East, worked bone was very common and was used as for military and living items processing, as well as for works of art.

Dr N. Manaseryan — Institute of Zoology, the National Academy of Sciences of Armenia
7, P.Sevag str., Yerevan 375014, Armenia
M_ninna@freenet.am

37- LÓRÁNT VASS

BONE WORKING IN ROMAN DACIA - ECONOMICAL ASPECTS

In Dacia, as well as in the other provinces of the Roman Empire, there are no settlements where bone artifacts are not represented in a considerable amount. These artifacts are usually the result of a bone working process, as revealed by their standard features. The production of a workshop always adjusts to the general demand of the population. It can also be determined by the taste of a region, settlement, the social and financial status of the inhabitants, and as well by the tradition and fashion. Until now it seems that the army is the main costumer of bone products in this province. The majority of the few known workshops are situated within the military, auxiliary forts along the border. These workshops satisfied first of all the demands of the soldiers, producing different articles of the military equipment, weapons belongings, tools etc. In the urban settlement of the province we have to count with civil costumers as it is reflected by the functional categories of the artifacts.

L. Vass Babeş-Bolyai University — Cluj-Napoca, Romania
v_lorant@yahoo.com

38- FELIX LANG

THE BONE OBJECTS FROM THE MEDIEVAL CASTLE OF GUETRAT, SALZBURG

The castle of Guetrat is situated on an exposed ledge over the valley of the river Salzach approximately 25km south of Salzburg. It was erected at the end of the 12th century and abandoned about 1304. The nucleus of castle was formed by a two-roomed palas and an at least four-storied tower. South of this were two courtyards followed by a gate tower. At the south end of the rock was a small exposed bastion.

During the excavations undertaken in the years 2002 and 2003 quite an amount of antler, some bone fragments and one horn core with traces of working have been found testifying a local carver's workshop

using saws and knives for the preparation of the material. There are no hints for lathe turning. Because of the concentration of the waste material the workshop can be localized in the centre of the castle, most probably in the ground floor of the palas. According to the half-fabrics implement-handles, maybe also gaming pieces have been produced here.

Some finished objects including crossbow's nuts, implement-handles and gaming pieces, complete the assemblage of at the whole 113 pieces. The crossbow's nuts are lathe turned and therefore most likely made elsewhere, whereas a local production for the other objects seems quite probable. Most likely the carver(s) where not full-time professionals but worked just for the needs of the inhabitants of the castle.

Felix Lang — University of Salzburg - Department of Classical Studies
Classical and Early Aegean Archeology — Residenzplatz 1 - A-5020 Salzburg
felix.lang@sbg.ac.at

39- PEDRO LÓPEZ ALDANA, MARTA MORENO-GARCÍA, ANA PAJUELO PANDO, CARLOS PIMENTA

ARCHAEOLOGICAL EVIDENCE OF A PRE-INDUSTRIAL WORKED BONE ACTIVITY IN 18TH-CENTURY SEVILLE, SPAIN

A great amount of manufacturing bone debris was recovered from a well in C/ San Luís (Plaza del Pumarejo), Seville, Spain. The archaeological sequence of the site, represented in multiple structures, spreads from the 2nd century AD up until nowadays, with a hiatus between 6th and 9th-centuries. The worked bone remains, dated to the 18th-century, attest to the occurrence of a pre-industrial craft activity on the site. In spite of the volume of bone debris very few finished items were recovered, among which stand out some pin heads. The typological analysis of the bone fragments indicates a high degree of standardisation - multiple-faceted cylindrical pieces were hand-carved, presenting many of them a tiny perforation right in the centre. In our opinion, this could be related with the use of a lathe to produce the final objects.

P. López Aldana and A. Pajuelo — Universidad de Sevilla, Spain
Dr M. Moreno García — Laboratório de Arqueozoologia - Instituto Português de Arqueologia
Av da Índia 136, Lisboa 1300-300 - Portugal
C. Pimenta, Instituto Português de Arqueologia, Portugal
marta@ipa.min-cultura.pt

40- MARTA MORENO-GARCÍA, CARLOS PIMENTA, A. R. FERREIRA, C. AMARO

BONES OF PENITENCE: AN UNUSUAL FIND FROM A 16TH-CENTURY PORTUGUESE PRISON

Recent archaeological excavations inside the old prison of Aljube, Lisbon (Portugal) have brought to light a remarkable assemblage of worked bone artefacts dated to the 16th-century AD. It consists of a large number of very small objects among which stand out several types of crosses and an unusual kind of pendants representing a human skull crowned by a decorated cross. In addition, there are lots of unfinished artefacts and bone scraps in the process of being manufactured. At that time Aljube was a religious prison probably related to the activities of the Inquisition. Thus, our study is concerned not only with the analysis of the production process of these bone objects but also with their historical, cultural and religious meaning.

Dr M. Moreno García — Laboratório de Arqueozoologia - Instituto Português de Arqueologia
Av da Índia 136, Lisboa 1300-300 - Portugal
marta@ipa.min-cultura.pt

41- MARLOES RIJKELIJKHUIZEN

TORTOISESHELL IN THE NETHERLANDS

Objects of keratinous materials are subject to rapid decay, but under the right conditions the objects are sometimes preserved in the soil. In Amsterdam ten objects have been found that are made entirely or partly of tortoiseshell. Finds from other Dutch cities are yet to be researched. Objects of tortoiseshell are also present in various Dutch museums. Tortoise shell was used in combination with for example ivory or metal. Because of the small numbers of finds of objects of tortoiseshell, it is useful to look at historical sources as well as archaeological sources. A combination of historical and archaeological sources can give us more information on the use of tortoiseshell for the manufacture of objects.

Objects made of tortoiseshell in the Netherlands are dated in the 17th and 18th century. From the end of the 16th century onwards the Dutch trade increased and many products were imported from all over the world. The eggs and flesh of the tortoises were eaten and tortoiseshell was imported in small amounts to the Dutch Republic. Tortoiseshell was probably imported from Asia and the Caribbean. Historical sources prove the manufacture of objects from tortoiseshell in Amsterdam. Tortoiseshell probably still remained an expensive material in this period of time. Two finds of tortoiseshell combs from Leiden and Alkmaar in church burials support this theory. Historical sources show high prices for tortoiseshell combs.

M. Rijkelijkhuisen — University of Amsterdam - Amsterdam Archaeological Centre
Department of Environmental Archaeology — Turfdragerpad 9 - 1012 XT Amsterdam
marloesrijkelijkhuisen@hotmail.com

POSTER SESSION

1- DOUGLAS V. CAMPANA

MAKING THE MOST OF COMPROMISED COLLECTIONS: IMPLICATIONS OF THE CUT-MARKS ON THE SHANIDAR D FAUNAL ASSEMBLAGE

During the 1950's, Ralph S. Solecki excavated the giant cave of Shanidar, Iraq, uncovering many meters of Middle Paleolithic remains and recovering a remarkable series of Neandertal skeletons. As was the practice of the time, the large faunal assemblage associated with the Neandertals was divided, a portion coming to the United States, while the remainder was archived in the Iraqi Museum. Fauna were not collected in the 1950's to the same standards that are expected today, and the Iraqi portion of the sample, if it still exists intact, is currently inaccessible. What kind of information can be gleaned from such an incomplete and compromised collection? The answer is a great deal. Individual bones can speak for themselves, and the markings on the Shanidar bones strongly suggest that the animals there provided finely skinned pelts and tendons as well as meat, and supported crafts well removed from the popular image of the Neandertal.

Pr. Dr D. V. Campana — Anthropology Department — New York University
PamCDougC@comcast.net

2- DOROTHÉE DERIEUX

BONE AND ANTLER WORKING FROM MEDIEVAL DOUAI (NORTH, FRANCE)

The archaeological service has been carrying out rescue excavations in the city of Douai (North, France) since the beginning of the 1970's. Amongst the collected material, a large amount of artefacts and waste products of bone, antler and ivory, were found in the medieval layers. These objects have never been gathered in a single study.

This archaeological service operates on a broad territory which counts a wide range of sites where one can find country sites of the high Middle Ages (typical occupation sites : Brebières, Izel-les-Esquerchin, Vitry-in-Artois...), as well as medieval urban sites (county occupation of the Fonderie de Canons of Douai, or more traditional sites), or ecclesiastical sites (merovingian women abbey at Wandignies-Hamage, Chartreuse of Douai modern abbey).

The interest of a study centered on this area lies on its diversity. It will be interesting to see if we can observe a typo-chronological evolution between the Merovingian period (V^e – VI^e centuries) and the end of the medieval period (XV^e century). Also the artefacts and how they were manufactured will all be considered under a “sociological” aspect : we'll try to see if the site status has an influence on the type of objects or on the raw material used for the production.

At least, The region of Douai, situated near the Northern European boarder, cultural influences will be interesting to be studied.

D. Dérieux — SRA Ile-de-France - UMR 7041 *ArScan* — Nanterre
dorothee.derieux@culture.gouv.fr

3- ERIKA GAL

SLIDING ON CATTLE- AND HORSE BONES: EVIDENCE FOR TWO RUNNERS FROM THE MIDDLE AGES TRANSYLVANIA (CENTRAL ROMANIA)

In addition to the number of medieval bone skates and runners known from the present day territory of Hungary, two runners have been identified from archaeological samples excavated in 1980s in the Transylvanian part of Romania.

The half-preserved runner found in a 15th century feature of a house in the town Székelykeresztúr (Cristuru Secuiesc) was made from the metatarsus of horse (*Equus caballus* L.). A round hole of 21 mm breaks through the plantar surface of the bone right above the distal epiphysis. This opening is lesser and has an angular form on the dorsal face. The epiphysis was bevel-carved from this direction in order to give the proper runner shape to the bone. The sliding face is completely flattened and the smooth surface indicates that this implement was used for a long time.

The other, whole runner comes from the village Csekefalva (Cechești), a few km north from Székelykeresztúr. It was found in House 2, which has been dated to the end of 15th-beginning of 16th century. This 325.0 mm long runner was made from the radius of a subadult cattle (*Bos taurus* L.). According to the ossification degree of epiphyses, the animal was slaughtered at the age of 1-3 years. The two round holes of 12.6 mm diameter, drilled from the caudal surface, breaks through the spongiosa, but do not reach the ventral wall of the bone. Not only the diaphysis, but the proximal epiphysis was carved as well. The numerous thin and parallel scratches on the plan running surface indicates the role and direction in which the instrument had been used.

Dr E. Gál — Archaeological Institute of the Hungarian Academy of Sciences
gal_erika@yahoo.com

4- GÜNTHER KARL KUNST

ELEMENTS OF URBAN WASTE: WORKED BONE OBJECTS FROM A WATER SUPPLY SYSTEM AND A SEWER OF THE ROMAN TOWN CARNUNTUM (LOWER AUSTRIA)

In the course of the study of faunal samples from the backfill of a water supply system and adjacent structures in the Roman town of Carnuntum, a series of worked bone objects could be identified. The bone assemblages accumulated when some of these structures, situated below a stone paved city street, were put out of use and allowed to fill up with all kinds of urban rubbish. They can be reliably dated into the 2nd and 3rd c. A.D.

The material comprises fragments of tools or implements, manufacture debris and bones exhibiting use wear, polish, perforations or other types of surface modifications. Within water sieved samples, needle fragments are frequent. The function of some of these objects remains unclear: on several long bone splinters, the fracture edges show regular incisions.

Most of these specimens were not recognized as worked bones initially. Their respective numbers in different layers is set in relation to overall bone numbers and recovery methods.

Dr G. K. Kunst, VIAS – Archaeozoology
c/o Institute of Palaeontology — UZA II – Geozentrum, University of Vienna — A-1090 Wien – Austria
guenther.karl.kunst@univie.ac.at

5- ALEXANDRA LEGRAND-PINEAU

INSULARITY AND BONE INDUSTRY. FOCUS ON THE CULTURE OF KHIROKITIA (VII-VIth MILL. BC)

Dr A. Legrand — ArScAn, UMR 7041 — Maison de l'archéologie et de l'ethnologie René Ginouvès —
92023 Nanterre cedex, France
a.legrand@free.fr

6- LILIT MIRZOYAN AND NINA MANASERYAN

BONE AND ANTLER INSTRUMENTS OF LABOR FROM ARMENIA

The paper presents two finds of labor instruments from Armenia made from the scapula of sheep/goat and antler of red deer. Scapula is diverted into the charka, antler became a handle. Dating of the specimens is in process. Both pieces are nicely worked. In the paper we'll try to reveal their working technology and compare with other similar finds from Armenia and other areas.

Dr L. Mirzoyan — Université Marc Bloch (Strasbourg 2)
and Dr Nina Manaseryan — National Academy of Sciences — Armenia
lilit.mirzoyan@gmail.com

7- MARTA MORENO-GARCÍA AND CARLOS M. PIMENTA

PIERCED METAPODIALS FROM GHARB AL-ÁNDALUS: SOME OBSERVATIONS TOWARDS THEIR UNDERSTANDING

During recent excavations in the city of Silves (southern Portugal) an assemblage of eighteen metapodials, mainly of cattle, that feature on the posterior side of the diaphysis a variable number of perforations, was recovered. They were dated to the Almohad period (11th-12th centuries AD). Contacts with Iberian archaeologists resulted in the recording of twelve more specimens from other localities in the centre and south of Portugal (Lisbon, Palmela, Mértola, Alcoutim and Paderne) and several more in the regions of Seville and Valencia in Spain. It stands out that the chronology for all of them is always associated to Islamic contexts. In most cases, because they were recovered isolated or in small assemblages among other faunal remains, they were simply classified as bone artefacts and their function remained unexplained.

Although pierced bones are commonly referred in the archaeological literature, no parallels have been found for the typology exhibited by these specimens and so far ethnographic references have proved also unsuccessful. Thus, in order to understand what these bones were used for we have focused our research on the analysis of the holes, i.e., their position, number, shape and wear.

Preliminary results suggest that external and internal wear of the holes might be related to the occurrence of spinning axes so that these bones could have been part of a more complex structure, maybe associated to textile manufacture.

Dr M. Moreno García — Laboratório de Arqueozoologia - Instituto Português de Arqueologia
Av da Índia 136, Lisboa 1300-300 - Portugal
marta@ipa.min-cultura.pt

8- ANA PAJUELO PANDO AND RUI PARREIRA

BONE MATERIALS IN THE FUNERARY OFFERINGS FROM MONTE CANELAS (PORTIMÃO, PORTUGAL)

This poster presents the worked bone material from the archaeological site of Monte Canelas (Portimão, Portugal), a funerary complex with collective burial chambers excavated in the rock. It is dated to the transition from the 4th to the 3rd millennium a.C. and it is related with the prehistoric necropolis and habitation site of Alcalá. Two occupation sequences were documented by the occurrence of primary and secondary funerary depositions. The archaeological material recovered consists of bone pins with smooth and canalled heads, pottery, stone tools and ornaments.

The study of the bone industry shows the dominance of pointed tools manufactured from caprine metapodials and wild boar canines, pins fashioned from long bone shafts of medium-sized mammals and pendants from wild boar lower canines.

A. Pajuelo — Universidad de Sevilla — Spain
R. Parreira — IPPAR — Portugal

9- ISABELLE SIDERA

BONE TOOLS AND ETHNICITY IN THE LINEAR POTTERY CULTURE — NORTHERN FRANCE

Dr I. Sidéra — Préhistoire et technologie, UMR 7055 — Maison de l'archéologie et de l'ethnologie René Ginouvès — 92023 Nanterre cedex, France
isabelle.sidera@mae.u-paris10.fr