



# Newsletter

International Council for Archaeozoology

Volume 4, No. 1 (Spring 2003)

## ICZN Opinion on Species Names

Contributed by Juliet Clutton-Brock

The International Commission on Zoological Nomenclature (ICZN), the official body responsible for ensuring that every animal has a unique and universally accepted scientific name, has returned the following ruling on an application submitted by Mrs. Anthea Gentry, Dr. Juliet Clutton-Brock, and Prof. Colin P. Groves. Their application requested ICZN action to conserve the names of specific wild species for which Linnaeus had similarly named domestic forms. The ICZN has conserved the usage of seventeen specific names based on wild species which are pre-dated by or contemporary with those based on domestic forms. The majority of wild progenitors and their domestic derivatives share the same name, but in the seventeen cases considered (1 Lepidoptera, 1 Osteichthyes, and 15 Mammalia) the wild and domestic forms have been separately named and this has created confusion.

The ICZN Opinion on Case 3010 is summarized below. Opinion 2027 (Case 3010) has been published in-full in: International Commission on Zoological Nomenclature (2003). Opinion 2027 (Case 3010). Usage of 17 specific names based on wild species which are predated by or contemporary with those based on domestic animals: conserved. *Bulletin of Zoological Nomenclature* 60(1):81-84.

### OPINION 2027 (CASE 3010)

The usage of 17 specific names based on wild species which are antedated by or contemporary with those based on domestic animals: conserved. **Keywords:** Nomenclature; taxonomy; Mammalia; Perissodactyla; Artiodactyla; Rodentia; Carnivora; Lepidoptera; Osteichthyes; names for wild species with domestic derivatives; *Equus africanus*; *Equus ferus*; *Camelus ferus*; *Lama guanicoe*; *Vicugna vicugna*; *Bos primigenius*; *Bos gaurus*; *Bubalus arnee*; *Bos mutus*; *Capra aegagrus*; *Ovis orientalis*; *Cavia aperea*; *Canis lupus*; *Mustela putorius*; *Felis silvestris*; *Carassius gibelio*; *Bombyx mandarina*; ass; tarpan; Bactrian camel; guanaco; vicuña; aurochs; gaur; water buffalo; yak; bezoar; Asian mouflon; guinea pig; wolf; polecat; wildcat; Prussian carp; gibel carp; mulberry silk moth.

### **-Ruling-**

(1) Under the plenary power: (a) it is hereby ruled that the name for each of the wild species listed in (2) and (3) below is not invalid by virtue of being antedated by a name based on a domestic form • (b) the name *ferus* Falk, 1786, as published in the trinomen *Camelus dromedarius ferus*, and all uses of the name *Camelus ferus* prior to the publication of *Camelus ferus* Przewalski, 1878, is hereby suppressed for the purposes of both the Principle of Priority and the Principle of Homonymy.

(2) The following names are hereby placed on the Official List of Specific Names in Zoology: (a) *africanus* Heuglin & Fitzinger, 1866, as published in the binomen *Equus africanus* (North African wild ass) • (b) *ferus* Boddaert, 1785, as published in the binomen *Equus ferus* (Russian wild horse, tarpan) • (c) *ferus* Przewalski, 1878, as published in the trinomen *Camelus bactrianus ferus* (wild Bactrian camel, now restricted to the western Gobi desert) • (d) *guanicoe* Müller, 1776, as published in the binomen *Camelus guanicoe* (South American guanaco) • (e) *vicugna* Molina, 1782, as published in the binomen *Camelus vicugna* (South American vicuña) • (f) *primigenius* Bojanus, 1827, as published in the binomen *Bos primigenius* (aurochs of Europe, Asia and North Africa, extinct since 1627) • (g) *arnee* Kerr, 1792, as published in the binomen *Bos arnee* (Indian water buffalo, arni) • (h) *mutus* Przewalski, 1883, as published in the binomen *Poephagus mutus* (Asian yak) • (i) *aegagrus* Erxleben, 1777, as published in the binomen *Capra aegagrus* (bezoar of the Middle East) • (j) *orientalis* Gmelin, 1774, as published in the binomen *Ovis orientalis* (mouflon of Western Asia) • (k) *aperea* Erxleben, 1777, as published in the binomen *Cavia aperea* (South American cavy) • (l) *lupus* Linnaeus, 1758, as published in the binomen *Canis lupus* (wolf of the Palaearctic, India and North America) • (m) *gibelio* Bloch, 1782, as published in the binomen *Cyprinus gibelio* (Prussian or gibel carp of Central Europe to East Asia) • (n) *mandarina* Moore, 1872, as published in the binomen *Theophila mandarina* (mulberry silk moth of China, Korea and Japan).

(3) To the entries for the following specific names on the Official List of Specific Names in Zoology is hereby added an endorsement to record the ruling in (1)(a) above: (a) *gaurus* H. Smith, 1827, as published in the binomen *Bos gaurus* (gaur of India, Burma and Malaya) • (b) *putorius* Linnaeus, 1758, as published in the binomen *Mustela putorius* (polecat of Europe, Middle East and Morocco) • (c) *silvestris* Schreber, 1777, as published in the trinomen *Felis catus silvestris* (wildcat of Western Europe to Western China and Central India, Africa).

(4) The name *ferus* Falk, 1786, as published in the trinomen *Camelus dromedarius ferus* and as suppressed in (1)(b) above, is hereby

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## Letter from the President

Dear ICAZ Members,

The past few months have been a quieter for those helping to steer ICAZ. The Durham conference has wrapped up, all costs have been accounted for, and we have been gratified to see that ICAZ 2002 was a financial success as well as a great meeting (see Treasurer's Report pg. 13). All funds advanced by ICAZ to help defray travel and organizational costs of the conference have been returned to ICAZ and the conference overall ended up well in the black. As I write this letter several volumes of conference proceedings are well underway, and we are beginning to look forward to ICAZ 2006.

Most of our recent efforts have been focused on consolidating our membership base as we move forward into the second full ICAZ membership cycle. Email notices have been sent to all members whose membership expired at the end of 2002 and many have responded by renewing their membership. We are sending this Newsletter to those whose membership expired in 2002 as a final reminder of what you will miss if you do not renew your membership. If you received a special notice and a membership form with the Newsletter this means you need to renew your membership if you wish to continue receiving the Newsletter and other benefits of ICAZ membership.

At present, membership in ICAZ stands at 399. This is down considerably from our post-conference high of 582 and reflects the large number of people who joined ICAZ for the 2002 conference year and have yet to renew their membership for the rest of this membership cycle. We hope to draw at least some of you back into the organization. Even so, the membership rolls reflect a robust and growing interest in ICAZ.


Nearly half (46%) of the current membership in ICAZ is new to the organization (182 members). Individuals taking advantage of reduced fee options (for students, retired and unwaged individuals, and residents of reduced rate countries) number an impressive 172 members (43%). Clearly offering this option has served to broaden the membership base of our organization.

Membership demographics reflect this appeal. ICAZ membership now represents 61 countries around the world (from Argentina to Yugoslavia). Regional representation

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## Zooarchaeological Training for Students

### IGERT AWARD TO UNIVERSITY OF ARIZONA FOR GRADUATE TRAINING IN ARCHAEOLOGICAL SCIENCE

Drs. Mary C. Stiner (mstiner@u.arizona.edu) and Barnet Pavao-Zuckerman (bpavao@email.arizona.edu) are pleased to announce that the IGERT Program of the National Science Foundation has awarded the University of Arizona a 5-year grant for graduate training in archaeological science, including zooarchaeology and taphonomy, with applications to paleoecology and geoarchaeology. The title of this grant is "Archaeological Sciences: An Integrated Approach to Graduate Training in Human Use of Ancient Landscapes through Chronometry, Paleoecology, and Technology". The program specifically seeks to train Ph.D. students to work across the current boundaries of all scientific disciplines germane to archaeological research. IGERT-funded graduate students must be U.S. citizens and would typically receive two years of full funding from the IGERT program in excess of 27K per year, supplemented by alternative departmental sources in additional years as needed. Potential applicants interested in this program should begin by consulting the UA web page for information on standard graduate program application procedures and then proceed to the new UA IGERT site (<http://datamonster.sbs.arizona.edu/IGERT>). 

### ARCHAEOBIOLOGY RESEARCH EXPERIENCE FOR UNDERGRADUATES

During the summers of 2003-2005, the National Science Foundation and the Andrew Fiske Memorial Center for Archaeological Research at the University of Massachusetts Boston are supporting a ten-week program of archaeological excavation and laboratory work focused on the collection and analysis of archaeobiological data, including animal bones, shells, macrobotanicals and pollen. The program is comprised of one week of orientation in the laboratory; four weeks of archaeological excavation and sample collection at Sylvester Manor; and five weeks of laboratory work studying excavated materials and field data. The fieldwork takes place at Sylvester Manor, Shelter Island, New York, and the laboratory work takes place in the archaeology labs at UMass Boston. Sylvester Manor is a 250-acre site with extensive archaeological remains of a Late Woodland (pre-contact) Native American settlement, and a 1652-1735 agricultural plantation established to ship provisions to the Caribbean. UMass Boston is currently in its fifth season of work at the site. The primary goals of the research are to understand the patterns of cultural interaction and cultural change among the diverse groups on the plantation, and to reconstruct land use and landscape change through time. At UMass Boston the program participants will work in five Fiske Center archaeology laboratories which include a zooarchaeology type collection; equipment for making petrographic thin section; equipment for extracting pollen; reference collections for the identification of archaeological wood, seeds, and pollen; a Flote-Tech machine for processing sediment samples; and equipment and microscopes for extracting and identifying archaeological parasites.

Students receive a \$300 per week stipend with the project covering most living expenses. Participants must be US citizens or Permanent Residents enrolled in college. Applications are due April 4 each year for the following summer. Application forms can be downloaded from the web site: <http://www.fiskecenter.umb.edu/reu.html>. For more information, contact: Dr. David B. Landon • Anthropology Department • University of Massachusetts Boston • 100 Morrissey Boulevard • Boston, MA 02125 USA • Tel: 617-287-6835 • E-mail: [david.landon@umb.edu](mailto:david.landon@umb.edu). 

### ANIMAL PALAEOPATHOLOGY WORKING GROUP ONLINE PHOTO GALLERY

The APWG is pleased to announce that their website ([www.apwg.supanet.com](http://www.apwg.supanet.com)) now has a photo center where members can upload their own images (provided they are less than 1MB in size). This gallery provides a useful benchmark for the study of bone pathologies and it can also be used in conjunction with our new message board if you want to make images available that relate to a subject of discussion. Further website developments include the continual expansion of our bibliography and a new resources area that contains links to other interesting and useful sites.

# Image-Analysis Software Is The Future Of Zooarchaeological Methodology

Contributed by Yoshiko Abe<sup>1</sup> and Curtis W. Marean<sup>2</sup>

Skeletal element abundance studies and surface modification mark analyses are two common ways that zooarchaeologists present quantitative information, yet there are methodological problems that make comparison between different faunal collections and analysts difficult if not impossible. Most zooarchaeologists employ some type of derived measure of skeletal element abundance, such as the minimum number of individuals (MNI) or minimum number of animal units (MAU), which are ultimately based on the minimum number of elements (MNE). The estimate of MNE from faunal fragments is the essential foundation for all inferences emanating from skeletal element abundance, yet the process of estimating the MNE is not standardized, and rarely made explicit. From our review of the literature, there are two main approaches, one using a database to count chosen anatomical features or zones to find the MNE, and one seeking overlaps of faunal fragments to find the MNE. Inter-analyst differences abound in the choice of characteristics or zones, or the method itself, and the overlap approach is highly subjective and lacking in reproducibility.


Another important category of zooarchaeological data is the frequency of surface modification found on bone fragments (tooth marks, burnt areas, percussion marks, and cutmarks). There are a variety of methods currently used to quantify surface modifications, and we use cutmarks as an example. Some analysts count the number of fragments that have a cutmark; others count the number of cutmarks; and both counts can be expressed as simple counts, or as a count of some more derived measure of skeletal element abundance. In addition to this inter-analyst variance, fragmentation of specimens impacts the frequency of cutmarks (and other surface modifications) in an assemblage, biasing inter-collection comparisons. Inter-analyst and inter-collection variation is thus a severe problem for comparative studies because it makes it difficult, if not impossible, to compare zooarchaeological data.

In Marean et al. (2001) and Abe et al. (2002), we argued that an image-analysis approach using the latest GIS software could overcome the methodological problems in both MNE estimation and cutmark (and by extension all surface modification) counting. Using the capacity of GIS software to turn vector (e.g. polygon) files into raster (grid) files and to tie in database information to spatial coordinates, we presented a method where we treat each fragment as a pixel image and overlying these fragment images on a template (picture of whole skeletal element) to find the maximum number of overlaps, i.e. the MNE (Marean et al. 2001). This process could be run for the whole element, or an analyst-specified anatomical zone. This computer-based method reduces the inaccuracies of the overlap methods, provides data compatible with previously done studies based on anatomical zones, and provides a digital copy of a faunal collection that can be re-analyzed in the future without going over the whole collection again. This method could eliminate the problem of inter-analyst variation in estimating the MNE. In addition, the approach has very flexible database management such that analyses can be easily redone on new aggregations of provenience units.

We have also shown that this image-analysis approach provides a new method of expressing surface modification counts that is not impacted by the degree of fragmentation (Abe et al. 2002). Accurately quantifying surface modification frequencies is a surface area problem similar to sampling problems involving surface area in other disciplines. For example, when ecologists sample habitats to estimate population size, the proper correction is population divided by area. Zooarchaeologists have tried to use the MNE as a proxy for area, but it does not work because bone portions do not all have an equal chance of surviving attritional processes. By recording surface modifications, together with fragments, as images in the image-analysis approach, we are able to express surface modification in relation to preserved surface area, which is calculated by the GIS software using the fragment images. As with the MNE process, the GIS software allows the analyst unlimited flexibility in the focus of the analyses, such as different anatomical zones or different kinds of cutmarks. In summary, GIS-based image-analysis approach provides one solution to the problem of eliminating inter-analyst and inter-collection bias.

We believe that all zooarchaeological methodology will eventually migrate to image-based recording and analysis, and our approach is a first step in this migration. The software was developed between 1997 and 2002, and is available *gratis* from Marean by e-mailing him at [curtis.marean@asu.edu](mailto:curtis.marean@asu.edu). You must have ArcView 3.2 or later, and this is typically site-licensed at many universities.

References cited: Abe, Y., C.W. Marean, P.J. Nilssen, E.C. Stone, and Z. Assefa (2002). The analysis of cutmarks on archaeofauna: A review and critique of quantification procedures, and a new image-analysis GIS approach. *American Antiquity* 67:643-663 • Marean, C.W., Y. Abe, P.J. Nilssen, and E.C. Stone (2001). Estimating the minimum number of skeletal elements (MNE) in zooarchaeology: a review and a new image-analysis GIS approach. *American Antiquity* 66:333-348.

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## DATABASE OF FISH OSTEOLOGY

A *Database of Fish Osteology* that contains 1,500 references dating from 1850 to the 1990's will be ready for use by May 30, 2003. Researchers interested in bibliographical information can address their specific requests (i.e., author, ichthyological discipline, skeletal unit, etc.) to MIMS, the Museum Information Management System of the NSMNH (Halifax, Canada), Attention: Mr. Andrew Hebda, Curator of Zoology. This service is free. Eventually, the database will be available on the internet. Researchers interested in providing additional references to papers that deal with fish osteology, from modern populations or archaeological sites, for incorporation into this database, please e-mail Alfonso Rojo ([arojo@stmarys.ca](mailto:arojo@stmarys.ca)).

# On Preparing Animal Skeletons: A Simple and Effective Method

Contributed by Polydora Baker, Simon Davis, Sebastian Payne, and Michael Revill<sup>1</sup>

In the Fall 2002 ICAZ Newsletter (Vol. 3, No. 2), Haskel Greenfield and Stan Freer explained how they prepare animal skeletons for their reference collection in Winnipeg. Here we offer a brief account of a slightly simpler method based on our experiences in England, various parts of the Near East, and Portugal. A fuller description is given in: Davis, S.J.M. and S. Payne (1992). 101 ways to deal with a dead hedgehog: notes on the preparation of disarticulated skeletons for zoo-archaeological use. *Circaea* 8:95-104.

First, a few words of caution. Preparing animal skeletons requires some care where health and safety are concerned. We never prepare animals that have died of unknown causes in case of possible zoonoses. Rubber gloves are recommended when preparing a carcass. Care is also needed to avoid injuries, and the enzymes we use are better in liquid form rather than powder (which is more hazardous as it might be accidentally inhaled). We use acetone to degrease bones. This is very inflammable, so smoking is certainly not recommended, and a fume hood should be used. We have, in the past, used various chemicals to deflesh, bleach and degrease bones, but we do not recommend their use. For example, caustic soda can damage bone and is very corrosive. Chemical bleaches may also damage bone, and chlorinated hydrocarbons and methanol, which may be used to degrease, are both more toxic than acetone.

What follows is an account of how a fresh or decomposing carcass can end up as a clean disarticulated skeleton. This method, which can also easily be done in the field or even at home without full laboratory facilities, can take as little as a few hours, thanks to “proteolytic enzymes” like the ones in biological washing powders or meat tenderizers.

The first, and in many ways the most important step, is to correctly identify, measure, weigh, sex, and describe the animal, and record the reasons for its identification. An explanation of why it is identified as, say, a lesser-spotted meadow pipit or a hump-backed haddock is important as it will enable a sceptic, in doubt about the identity of the skeleton in question, to go back to the records and check the original description made “in the flesh”. Photographs are also desirable to document a critical identification. Once identified and recorded, skin, crudely deflesh, and simmer (slow bubbling just below boiling point—avoid a full rolling boil) the carcass in water so that the tendons and ligaments are softened. Since fish do not have ligaments and their bones are more delicate than those of mammals and birds, fish should not be simmered for more than about 5 minutes; smaller mammals and birds need 10-15 minutes, while larger mammals need an hour or so.

The next step is enzymatic proteolysis. We use an enzyme called Neutrase (the liquid form), made by Novozymes, a large chemical company in Denmark, with agents in many parts of the world. You can find more information about where to purchase it via Novozyme’s web site: <http://www.novozymes.com> (In Britain, Neutrase can be ordered from Eurzyme.com 122 Springhill Avenue, Blackrock, Co. Dublin, Ireland. tel +353 1 2897562/2070754, or +353 87 9079299 fax +353 1 2898230 e-mail [info@eurzyme.com](mailto:info@eurzyme.com) web: [www.eurzyme.com](http://www.eurzyme.com) It costs Sterling £17.90/kg for 25L; at the moment 25L is the minimum order.). Neutrase is a protease used to degrade proteins in the flour used for biscuit and cracker production, presumably to render the cereal proteins more digestible. If you cannot afford to buy Neutrase, you can use biological washing powders (some come in liquid form too) such as Ariel or Biotex or even meat tenderizers like papain, an extract of the papaya fruit.

The cooked carcass, now devoid of much of its meat, is incubated in a solution of the enzyme—two or three teaspoonfuls (10-20 ml) per 20 litre bucket of warm water is usually sufficient. Enzymes are large complex organic molecules and do not last for very long at raised temperatures; it is important to let the carcass cool down below 50°C before adding the Neutrase, and not to use water that is too hot, otherwise the enzyme will be deactivated. We use a converted ostrich egg incubator to maintain a temperature of 45°C. However, incubators are expensive, so a cheaper alternative is an aquarium heater, which only costs about £12 and may be purchased in a pet shop.

At 45°C, Neutrase activity declines after a few hours. Hence after 3-4 hours, if there is still some residual meat left, it is best to change the liquid completely and add fresh warm water and enzyme. Generally the bones are clean of blood, muscle and tendons after 2-3 changes of enzyme solution; in very old animals with tough ligaments, it may be necessary to go through more cycles. If the carcass is left in unchanged enzyme solution for longer than a few hours, bacterial decomposition sets in which creates more smells.

When preparing small mammal or bird skeletons, several carcasses may be processed simultaneously in the same bucket of enzyme solution by placing each in a separate bag made by tying the ends of lengths of nylon ladies tights or stockings. These resist not only boiling water and enzyme solution but also the acetone used to degrease. In order to keep tabs on each specimen, a metal tag is added to each bagged carcass. Use heavy-duty metal foil, the sort sold in hardware stores for draught exclusion. It is easy to cut into small squares with kitchen scissors and the accession number may be embossed with a ballpoint pen. If you want to keep the small bones of left, right, front and hind feet separate, again these can be put into separate bags.

After incubation the bones will be lying at the bottom of a “soup” containing the broken down meat proteins and fat. This soup needs to be thoroughly washed away with hot water, through a sieve to avoid losing small bones, and the bones usually need to be rinsed once or twice. The resulting cleaned disarticulated bones should then be left to dry thoroughly.


Bones generally contain a lot of grease. This means that (unless the unfortunate animal died of starvation) it will be necessary to degrease. If this is not done, the bones can become unpleasant and smelly. Over the years, grease breaks down as a result of bacterial decay and the resulting acids attack the bones. Degreasing is therefore very important and is done by leaving the bones (small specimens are better left in their tights) in acetone for several weeks (chlorinated degreasing solvents are best avoided, as they are mostly toxic and/

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## News of Various Sorts

PIGS AND HUMANS CONFERENCE  
WALWORTH CASTLE, COUNTY DURHAM (UK)  
SEPTEMBER 26-28, 2003

### MANFRED TEICHERT CELEBRATES HIS 75<sup>th</sup> BIRTHDAY

Manfred Teichert, member of the ICAZ Committee of Honor and former member of the Executive Committee, was born in the district of Glogau, Lower Silesia, on May 5, 1928. From 1949, his scientific career was closely associated with the university Martin-Luther at Halle-Wittenberg where he studied agricultural sciences, pedagogy and zoology. From 1952 to 1953 he worked at the Agricultural Faculty as lecturer and researcher. His scientific activities focused on archaeozoological issues from the start, in particular on animal finds from early and prehistoric times in central Germany. In addition, he produced seminal contributions on methodology related to the estimation of whither's height on single bones from pigs and sheep. Of special relevance has been his 1964 paper (also authored with J. Boessneck and HH. Müller) on the osteological features for distinguishing bones of sheep and goats. For this research Dr. Teichert made use of an assemblage of more than three hundred skeletons from both species. Teichert has been a member of ICAZ since 1971 and, during several years, headed the former working group on methods. The culmination of his professional career came in 1992 with the creation of the Museum of Domestic Animals in Halle, when he also took the opportunity to hold an ICAZ symposium. Congratulations and acknowledgment submitted by Hans-Hermann Müller. 

### ICAZ 2006 DOG/WOLF POSTER WORKSHOP

For the 2006 ICAZ International Conference in México City we are planning a special poster workshop session on the archaeozoology of ancient dogs and wolves. We invite all of you who have analyzed dog and/or wolf remains from ancient times (or have plans to do so) to think about a contribution to this specialized session. We encourage submissions from all regions of the world, especially material that contributes to our understanding of dog origins, regional variation, breed development, hybridization, migration, cultural uses of dogs, ritual practices (including deliberate burials), butchery patterns, and related topics. Time will be set aside for discussion and participants are encouraged to bring actual specimens or casts for display. We chose a poster session format to minimize conflicts with oral presentations, encourage consistent reporting of essential morphological data, and allow everyone an equal opportunity to contribute. Additional details will be available as planning progresses. For more information, please contact the workshop organizers: Raúl Valadez, México (raul\_valadez@hotmail.com) and Susan Crockford, Canada (scrock@tnet.net). 

The conferece "Pigs and Humans: The Archaeology and History of the Pig" has been organised by Umberto Albarella, Keith Dobney, and Peter Rowley-Conwy, the Department of Archaeology, University of Durham, UK (E-mail: pig.project@durham.ac.uk). For additional information, please view the following website: <http://www.dur.ac.uk/pig.project/PigProjectPages/Conference.php>.

Papers offered so far are: Leif Andersson, (modern pig genetics) • Tomoko Anezaki and Hitomi Hongo, TBA • Sue Bulmer, *Pigs and People in New Guinea: Archaeological Evidence and Ethnographic Models* • Richard Carter and Ola Magnell, *Hunting and Prey Choice of Wild Boar by Mesolithic Hunters in South Scandinavia* • Simon Davis, TBA • Anton Eryvnyck, An Lentacker, Mike Richards, Gundula Müldner and Keith Dobney, *Paradise Lost—The Late Medieval Evolution from Forest Dwelling Pigs to farm Animals: A Case Study from Flanders, Belgium* • Caroline Grigson, *Pigs/No Pigs in the Prehistory of the Middle East—Culture, Economy or What?* • Colin Groves, key note lecture • Annat Haber, (ageing pig teeth) • Leif Jonsson, TBA • Liora Kolsa-Horwitz and G. Davidowitz, *Inter-Population Variation in Israeli Wild Boar: Implications for Identifying Domestic Pigs* • Horst Kiedorf, *Histopathology of Fluorotic Enamel in Wild Boars* • Jonathan Lee, *Historical Introduction of Pigs into Australia* • June-Jeong Lee, (pig domestication in Korea) • Justin S.E. Lev-Tov, (pigs in ancient Palestine) • Michael MacKinnon, (Roman pigs) • Filippo Manconi, Umberto Albarella, Keith Dobney and Peter Rowley-Conwy, *Questions for the Present, Answers for the Past? Traditional Pig Husbandry in Sardinia and Corsica* • Marco Masseti, *On the Possible Role of Boars in Early Fisherman Communities* • Richard Meadow, (pigs in eastern Iran and northwest south Asia) • Tarek Oueslati, (pig consumption in the ancient town of Beirut) • Paul Sillitoe, *Pig Herd Demography and Management in New Guinea* • Jacqueline Studer, *Pigs and Papoo in Irian Jaya: An Example of Traditional Butchery* • Emmanuelle Vila and Anne-Sophie Dalix, *Considerations About Wild Boar Hunting in Eastern Mediterranean in Ancient Times (2<sup>nd</sup>-1<sup>st</sup> millenium BC)* • Melinda Zeder, TBA.

### CHECK YOUR CONTACT INFORMATION

This is a reminder to all ICAZ members to please check your contact information and make sure that it is accurate and up-to-date. You can find this information in the Membership Directory of the For Members section of the ICAZ Website ([rathbun.si.edu/icaz](http://rathbun.si.edu/icaz)). Please notify ICAZ Secretary Arturo Morales ([arturo.morales@uam.es](mailto:arturo.morales@uam.es)) of errors.

### REQUEST FOR INFORMATION ON MARINE TURTLES

There are seven living species of marine turtles (6 in the family Cheloniidae and 1 in Dermochelyidae). These animals have been exploited and celebrated by diverse societies for millennia as they are found throughout tropical and subtropical oceans of the world. Because marine turtles are large in size, their bones are bulky, robust and distinctive. Their remains are commonly found in coastal sites throughout the world. Cultural artifacts made from, and representing, marine turtles are also common. I am compiling information on prehistoric and ancient interactions among marine turtles and humans, and would be very grateful for any information on: 1) sites where remains have been found (including other general information such as estimated age of the site, cultural context, turtle species or family if known, types and numbers of bones found, etc.) • 2) sites where cultural manifestations of marine turtles have been found • 3) publications that provide the above information, including "gray literature reports" • 4) names of people or institutions where work on marine turtles is, or has been, carried out.

Thank you very much for any information that can be provided. Please contact: Jack Frazier • Conservation and Research Center • Smithsonian Institution • 1500 Remount Road • Front Royal, VA 22630 USA • Tel: 540-635-6564 • E-mail: [kurma@shentel.net](mailto:kurma@shentel.net).

## Recent Publications

This is the third Spring ICAZ Newsletter to feature recent publications in archaeozoology. For the past three spring issues, we have e-mailed the ICAZ membership asking members to send us references to recent publications that would be of interest to their ICAZ colleagues. When we asked members to help with this list in 2001, we received more than 90 submissions. This number grew to an impressive 150 submissions in 2002. With the current Spring 2003 ICAZ Newsletter, the Recent Publications section features more than 190 submissions—6+ pages. Due to space considerations, we have omitted from the following list publications in-press, papers presented, printed abstracts, and publications prior to 2000. Many thanks to all who contributed!

ALBARELLA, U. and R. THOMAS (2002). They dined on crane: bird consumption, wild fowling and status in medieval England. *Acta Zoologica Cracoviensia* 45:23-38(special issue).

ALBARELLA, U. (2002). Size matters: how and why biometry is still important in zooarchaeology. In *Bones and the Man: Studies in Honour of Don Brothwell*, K. Dobney and T. O'Connor (eds.), pp.51-62. Oxford: Oxbow Books.

ALTUNA, J. (2002). Las cuevas de Aitzbitarte: historia de las investigaciones. *Aranzadiana* 122:113-115. San Sebastián

ALTUNA, J. (2002). Los animales representados en el arte rupestre de la Península Ibérica: frecuencias de los mismos. *Munibe (Antropología-Arkeologia)* 54:21-33. San Sebastián.

ALTUNA, J., L. DEL BARRIO, and K. MARIEZKURRENA (2002). Gipuzkoa: carta arqueológica, megalitos, anexo I, nuevos descubrimientos 1990-2001. *Munibe (Antropología-Arkeologia)* Suplemento 15. San Sebastián

ALTUNA, J. and K. MARIEZKURRENA (2001). La cabaña ganadera del yacimiento de La Renke (Alava, País Vasco). *Munibe (Antropología-Arkeologia)* 53:75-86. San Sebastian.

ALTUNA, J. and K. MARIEZKURRENA (2001). Restos de macromamíferos del yacimiento de Zatoya (Navarra). *Trabajos de Arqueología Navarra* 15.

ALTUNA, J., K. MARIEZKURRENA, and M. ELORZA (2002). Arqueozoología de los niveles paleolíticos de la cueva de Abauntz (Arraiz, Navarra). *Salduvie* 2:1-26. Zaragoza.

ANDRUS, C.F.T. and D.E. CROWE (2002). Alteration of otolith aragonite: effects of prehistoric cooking methods on otolith chemistry. *Journal of Archaeological Science* 29(5):291-300.

ANDRUS, C.F.T., D.E. CROWE, D.H. SANDWEISS, E.J. REITZ, and C.S. ROMANEK (2003). Response to comments on "Otolith <sup>18</sup>O record of Mid-Holocene sea surface temperatures in Peru". *Science* 299:203b(on-line version).

ANDRUS, C.F.T., D.E. CROWE, D.H. SANDWEISS, E.J. REITZ, and C.S. ROMANEK (2002). Otolith <sup>18</sup>O record of Mid-Holocene sea surface temperatures in Peru. *Science* 295:1508-1511.

ANGELUCCI, D.E., M. ALESSIO, G. BARTOLOMEI, P.F. CASSOLI, S. IMPROTA, A. MASPERO, and A. TAGLIACOZZO (2002). Il Riparo Frea IV, (Selva di Val Gardena, BZ). *Atti della XXXIII Riunione Scientifica dell'Istituto Italiano di Preistoria e Protostoria "Preistoria e Protostoria del Trentino Alto Adige/Südtirol"*, (Ottobre 1997), 1:145-160.

ANGELUCCI, D.E., M. ALESSIO, G. BARTOLOMEI, P.F. CASSOLI, S. IMPROTA, A. MASPERO, and A. TAGLIACOZZO (2002). The Frea IV rockshelter, (Selva di Val Gardena, BZ). *Preistoria Alpina* 34(1998):99-109.

ANTIKAS, T.G. (2003). Funeral horse carts discovered in Thrace, Greece. *Minerva* 14(3):7-8.

ARRIZABALAGA, A., J. ALTUNA, and P. ARESO, et al. (2002). Early Upper Palaeolithic in the Labeko Koba archaeological site (Basque country). *Journal of Iberian Archaeology* 4:63-74.

ASHBY, S.P. (2002). The role of zooarchaeology in the interpretation of socioeconomic status: a discussion with reference to Medieval Europe. *Archaeological Review from Cambridge* 18:37-59.

BALASSE, M. (2002). Reconstructing dietary and environmental history from enamel isotopic analysis: time resolution of intra-tooth sequential sampling. *International Journal of Osteoarchaeology* 12:155-165.

BALASSE, M. (2003). Potential biases in sampling design and interpretation of intra-tooth isotope analysis. *International Journal of Osteoarchaeology* 13:3-10.

BALASSE, M., S.H. AMBROSE, A.B SMITH, and T.D. PRICE (2002). The seasonal mobility model for prehistoric herders in the south-western Cape of South Africa assessed by isotopic analysis of sheep tooth enamel. *Journal of Archaeological Science* 29:917-932.

BALASSE, M. and A. TRESSET (2002). Early weaning of Neolithic domestic cattle (Bercy, France) revealed by intra-tooth variation in nitrogen isotope ratios. *Journal of Archaeological Science* 29:853-859.

BALASSE, M., A.B SMITH, S.H. AMBROSE and S.R. LEIGH (2003). Determining sheep birth seasonality by analysis of tooth enamel oxygen isotope ratios: the Late Stone Age site of Kasteelberg (South Africa). *Journal of Archaeological Science* 30:205-015.

BAXTER, I.L. (2002). Occipital perforations in a Late Neolithic probable aurochs (*Bos primigenius* Bojanus) cranium from Letchworth, Hertfordshire, U.K. *International Journal of Osteoarchaeology* 12:142-3.

BAXTER, I.L. (2002). A small dog skull from Well F815 at Piddington villa. In *Iron Age and Roman Piddington: The Faunal Remains: 1, 1979-1997*, R.M. and D.E. Friendship-Taylor (eds.), pp.29-30. Northampton: The Upper Nene Archaeological Society.

BAXTER, I.L. (2002) Animal bone. In Excavation of a Multi-Period site at Worcester Road, Droitwich, J. Bretherton et al. (eds.). *Transactions of the Worcestershire Archaeological Society* 18:25-51.

BAXTER, I.L. (2002) Mammal and bird bones. In *Excavations on the Site of the New Police Station, Castle Street, Worcester*, R. Edwards et al. (eds.). *Transactions of the Worcestershire Archaeological Society* 18:114-117.

BAXTER, I.L. (2002) Animal bone. In *Castle Moat Leominster: Excavation by Margaret Jones in 1962*, D. Hurst (ed.), pp. 36-40. Leominster: Leominster Historical Society.

BAXTER, I.L. (2002) A donkey (*Equus asinus* L.) partial skeleton from a Mid-Late Anglo-Saxon alluvial layer at Deans Yard Westminster, London SW1. *Environmental Archaeology* 7:89-94.

BERTAŠIUS, M. and L. DAUGNORA (2001). Viking age horse graves from Kaunas region (Middle Lithuania). *International Journal of Osteoarchaeology* 11:387-399.

BADENHORST, S. (2003). The ethnography, archaeology, rock art and history of goats (*Capra hircus*) in southern Africa: an overview. *Anthropology Southern Africa* 25(3-4):96-103.

BADENHORST, S. and I. PLUG (2002). Animal remains from recent excavations at a Late Iron Age site, Simunye, Swaziland. *Southern African Humanities* 14:45-50.

BADENHORST, S. and I. PLUG (2003). The archaeozoology of goats, *Capra hircus*

- (Linnaeus, 1758): their size variation during the last two millennia in southern Africa. *Annals of the Transvaal Museum* 40:91-121.
- BADENHORST, S., I. PLUG, A.J. PELSNER, and A.C. VAN VOLLENHOVEN (2002). Faunal analysis from Steinaecker's Horse, the northernmost British military outpost in the Kruger National Park during the South African War. *Annals of the Transvaal Museum* 39:57-63.
- BLENCH, R.M. and K.C. MACDONALD, eds. (2000). *The Origins and Development of African Livestock: Archaeology, Linguistics, and Ethnography*. London: University College London Press.
- BOCHENSKI, Z.M., Z. BOCHENSKI, and J.R. STEWART, eds. (2002). Proceedings of the 4<sup>th</sup> meeting of the ICAZ Bird Working Group, Krakow, Poland, 11-15 September, 2001. *Acta Zoologica Cracoviensia* 45 (special issue).
- BOEV, Z. (2001). Birds over the mammoth's head in Bulgaria. In *The World of Elephants: Proceedings of the 1st International Congress, Roma, 16-20 Ottobre 2001*, G. Cavaretta, P. Gioia, M. Mussi, M.R. Palombo (eds.), pp. 180-186. Rome: Consiglio Nazionale delle Ricerche.
- BOEV, Z. (2002). Tetraonidae Vigors, 1825 (Galliformes-Aves) in the Neogene-Quaternary record of Bulgaria and the origin and evolution of the family. *Acta Zoologica Cracoviensia* 45:263-282 (special issue).
- BOGATKINA, O.G. (2002). Hunting on the territory of the Kama region during ancient epoch. In *Historical sources, an experiment in reciprocity and tolerance of the people from the Ural territory*, pp.292-298. Izhevsk [in Russian].
- BOGATKINA, O.G. (2002). The site Ratchevskoje: osteologic analysis of mammals' bone remains. In *The problems of ancient and mediaeval history of the Volga basin territory (the middle part)*, pp.203-206. Kazan [in Russian].
- BOGATKINA, O.G. (2003). Terrestrials' remains from grotto "Snow-White". In *Terrestrials from Russia and contiguous territories*, pp.52. Moscow [in Russian].
- BOGATKINA, O.G. (2003). Cranial indications in subfossil beavers *Castor fiber* from the Tcheptsa river basin. In *Terrestrials from Russia and contiguous territories*, pp. 53. Moscow [in Russian].
- BONAVIA, D., L.W. JOHNSON-KELLY, E.J. REITZ, and E.S. WING (2001). El precerámico medio de Huarmey: historia de un sitio (PV35-106). *Bulletin de l'Institut Francais d'Etudes Andines* 30(2):265-333.
- CALOI, L., M.R. PALOMBO, and A. TAGLIACOZZO (2002). Il Vecchio Mondo e l'America Settentrionale. In "*Il Mondo dell'Archeologia*", S. Moscati (ed.), pp. 445-452. Vol. I, Parte seconda: "Grandi temi della ricerca archeologica", 1: Ambiente, Uomo e Culture Preistoria e Protostoria.
- CARTER, R.J. (2001). New evidence for seasonal human presence at the Early Mesolithic site of Thatcham, Berkshire, England. *Journal of Archaeological Science* 28:1055-1060.
- CARTER, R.J. (2001). Dental indicators of seasonal human presence at the Danish Boreal sites of Holmegaard I, IV,V and Mullerup and the Atlantic sites of Tybrind Vig and Ringkloster. *The Holocene* 11(3):359-365.
- CARTER, R.J. (2001). Human subsistence and seasonality in Mesolithic northwest Europe based on studies of mandibular bone and dentition in red deer (*Cervus elaphus*) and roe deer (*Capreolus capreolus*). Unpublished PhD Dissertation, Institute of Archaeology, University College London, University of London.
- CASSOLI, P.F., M. GALA, and A. TAGLIACOZZO (2003). La caccia e l'utilizzo alimentare degli uccelli a Grotta Romanelli durante le fasi finali del Pleistocene. In *Grotta Romanelli nel centenario della sua scoperta 1900-2000*, P.F. Fabbri, E. Ingravallo, and A. Mangia (eds.), pp. 91-111. Congedo ed., Lecce.
- CASSOLI, P.F. and A. TAGLIACOZZO (2001). Analisi dei resti ossei animali. In *Materiali veneti preromani e romani del santuario di Lagole di Calalzo al Museo di Pieve di Cadore*, G. Fogolari and G. Gambacurta (eds.), pp. 77-86. Roma: Collezioni e Musei Archeologici del Veneto.
- CHALMIN, E., M. MENU, and J. ALTUNA (2002). Les matières picturales de la grotte d'Ekain (Pays Basque). *Munibe (Antropologia-Arkeologia)* 54:35-51. San Sebastian.
- CLUTTON-BROCK, J. (2001). Ritual burial of a dog and six domestic donkeys. In *Excavations at Tell Brak Vol 2: Nagar in the Third Millennium BC*, D. Oates, J. Oates, and H. McDonald (eds.), Chapter 13, pp.327-338. London: British School of Archaeology in Iraq; Cambridge: McDonald Institute for Archaeological Research.
- CLUTTON-BROCK, J. (2001). Identification of the animal remains. In *Excavations at Tepe Guran in Luristan The Bronze Age and Iron Age Periods*, H. Thrane (ed.), Chapter 15, pp. 133-138. Publication 38. Aarhus: Jutland Archaeological Society.
- COMPAGNONI, B., A. CURCI, and A. TAGLIACOZZO (2003). Lo sfruttamento della Volpe nei livelli epigravettiani di Grotta Romanelli. In *Grotta Romanelli nel centenario della sua scoperta 1900-2000*, P.F. Fabbri, E. Ingravallo, and A. Mangia (eds.), pp. 113-135. Congedo ed., Lecce.
- COPLEY, M.S., R. BERSTAN, S.N. DUDD, G. DOCHERTY, A.J. MUKHERJEE, V. STRAKER, and R.P. EVERSLED (2003). Direct chemical evidence for widespread dairying in prehistoric Britain. *Proceedings of the National Academy of Sciences* 100:1524-1529.
- CORONA-M., E. (2002). *Las aves en la historia natural novohispana*. México: Científica. Instituto Nacional de Antropología e Historia.
- CROCKFORD, S.J. (2003). Thyroid rhythm phenotypes and hominid evolution: a new paradigm implicates pulsatile hormone secretion in speciation and adaptation changes. *International Journal of Comparative Biochemistry and Physiology, Part A* 35(1):105-129.
- CROCKFORD, S.J. (2002). Thyroid hormone in Neandertal evolution: a natural or pathological role? *Geographical Review* 92(1):73-88.
- CROCKFORD, S.J. (2002). Animal domestication and heterochronic speciation: the role of thyroid hormone. In *Human Evolution Through Developmental Change*, N. Minugh-Purvis and K. McNamara (eds.), pp. 122-153. Baltimore: Johns Hopkins University Press.
- CROCKFORD, S.J., G. FREDERICK and R. WIGEN (2002). The Cape Flattery fur seal: an extinct species of *Callorhinus* in the eastern north Pacific? *Canadian Journal of Archaeology* 26(3):152-174.
- CRUZ-URIBE, K., R. KLEIN, G. AVERY, M. AVERY, D. HALKETT, T. HART, R. MILO, G. SAMPSON and T. VOLMAN (2003). Excavation of buried late Acheulian (mid-Quaternary) land surfaces at Duinefontein 2, Western Cape Province, South Africa. *Journal of Archaeological Science* 30(5):533-546.
- DAWSON, P.C. (2001). Interpreting variability in Thule Inuit architecture: a case study from the Canadian High Arctic. *American Antiquity* 66(3):453-470.
- DAUGNORA, L. (2000). Fish and seal osteological data at šventoji sites. *Lietuvos archeologija* 19:85-101. Vilnius.
- DAUGNORA, L., R. BILSKIENĖ, and A.K. HUFTHAMMER (2002). Bird remains from Neolithic and Bronze Age settlements in Lithuania. *Acta Zoologica Cracoviensia* 45:233-238 (special issue).
- DE RENZI, M., M. ALONSO, M. BELINCHON, E. PENALVER, P. MONTOYA,

- and A. MARQUEZ-ALIAGA, eds. (2002). *Current Topics on Taphonomy and Fossilization*. Proceeding from International Conference Taphos 2002, 3<sup>rd</sup> Meeting on Taphonomy and Fossilization. Valencia.
- DOBNEY, K., A. ERVYNCK, and B. LA FERLA (2002). Assessment and further development of the recording and interpretation of linear enamel hypoplasia in archaeological pig populations. *Environmental Archaeology* 7:35-46.
- DOBNEY, K. and T. O'CONNOR, eds. (2002). *Bones and the Man: Studies in Honour of Don Brothwell*. Oxford: Oxbow Books.
- EGELAND, C.P. (2003). Carcass processing intensity and cutmark creation: an experimental approach. *Plains Anthropologist* 48(184):39-52.
- ELKIN, D. and M. MONDINI (2001). Human and small carnivore gnawing damage on bones: an exploratory study and its archaeological implications. In *Ethnoarchaeology of Andean South America: Contributions to Archaeological Method and Theory*, L.A. Kuznar (ed.), pp. 255-265. Ann Arbor: International Monographs in Prehistory.
- ERIKSSON, G., L. LÖUGAS, and I. ZAGORSKA (2003). Stone Age hunter-fisher-gatherers at Zvejnieki, northern Latvia: radiocarbon, stable isotope and archaeozoology data. *Before Farming* 2003/1(2):1-25 (www.waspjournals.com).
- ERVYNCK, A. (2002). Sedentism or urbanism? The origin of the commensal black rat (*Rattus rattus*). In *Bones and the Man*, K. Dobney and T. O'Connor (eds.), pp.95-109. Oxford: Oxbow Books.
- ERVYNCK, A. And K. DOBNEY (2002). A pig for all seasons? Approaches to the assessment of second farrowing in archaeological pig populations. *Archaeofauna* 11:7-22.
- ERVYNCK, A., K. DOBNEY, H. HONGO, and R. MEADOW (2001). Born free? New evidence for the status of *Sus scrofa* at Neolithic Çayönü Tepesi (Southeastern Anatolia, Turkey). *Paléorient* 27(2):47-73.
- ERVYNCK, A., B. HILLEWAERT, A. MAES, and M. VAN STRYDONCK (2002). Tanning and horn working at late and post-medieval Brugge: the organic evidence. In *The Environmental Archaeology of Industry*, P. Murphy and P. Wiltshire (eds.), pp.60-70. Oxford: Oxbow Books.
- ERVYNCK, A., W. VAN NEER, H. HÜSTER-PLOGMANN, and J. SCHIBLER (2003). Beyond affluence: the zooarchaeology of luxury. *World Archaeology* 34(3):428-441.
- EVERSHED, R., S. PAYNE, V. STRAKER, M. COPLEY, S. DUDD, R. BERSTAN, S. AILLAUD, and G. DOCHERTY (2002). Was dairying an important element of animal husbandry in prehistoric Britain?. Report submitted to the Natural Environment Research Council, Swindon and English Heritage.
- EZZO, J.A. and M.C. STINER (2000). A Late Archaic period dog burial from the Tucson Basin, Arizona. *The Kiva* 66(2):291-305.
- FEDJE, D.W., R.J. WIGEN, Q. MACKIE, C.R. LAKE and I.D. SUMPTER (2001). Preliminary results from investigations at Kilgii Gwaay: an early Holocene archaeological site on Ellen Island, Haida Gwaii, British Columbia. *Canadian Journal of Archaeology* 25:98-120.
- FIORE, I. (2003). Lo sfruttamento dei mammiferi di piccola e media taglia nell'Epigravettiano di Grotta Romanelli. In "Grotta Romanelli nel centenario della sua scoperta 1900-2000", P.F. Fabbri, E. Ingravallo, and A. Mangia (eds), pp. 137-147. Congedo ed., Lecce.
- FIORE, I., A. CURCI, and A. TAGLIACOZZO (2003). Tecniche di macellazione e sfruttamento dei grandi ungulati (*Bos primigenius*, *Equus hydruntinus*, *Cervus elaphus*) dei livelli epigravettiani di Grotta Romanelli (scavi 1954 e 1958). In *Grotta Romanelli nel centenario della sua scoperta 1900-2000*, P.F. Fabbri, E. Ingravallo, and A. Mangia (eds), pp. 149-168. Congedo ed., Lecce.
- FIORE, I. and A. TAGLIACOZZO (2001). I resti ossei animali dal santuario preromano in località "Fornace" di Altino (VE), Atti del Convegno "Gli orizzonti del Sacro. Culti e santuari antichi in Altino e nel Veneto orientale" (Venezia, 1-2 dicembre, 1999), in Studi e ricerche sulla Gallia Cisalpina, 14. Altinum, Studi di archeologia, epigrafia e storia 2, Quasar, pp. 87-96.
- FIORE, I. and A. TAGLIACOZZO (2002). I resti ossei faunistici. Ruta Serafini A. (ed), "Este preromana: una città e i suoi santuari", Canova ed., Treviso, pp. 185-197.
- FIORE, I., A. TAGLIACOZZO, and P.F. CASSOLI (2002). Lo sfruttamento dello stambecco al Riparo Dalmeri (TN) e la "caccia specializzata" nei siti delle Alpi Orientali tra il Tardiglaciale e l'Olocene antico. *Atti della XXXIII Riunione Scientifica dell'Istituto Italiano di Preistoria e Protostoria* "Preistoria e Protostoria del Trentino Alto Adige/Südtirol", (Trento 21-24 ottobre 1997), Vol. I, pp. 251-267.
- FIORE, I., A. TAGLIACOZZO and P.F. CASSOLI (2002). Ibex exploitation in the Dalmeri Rockshelter and "specialized hunting" in the sites of the Eastern Alps during the Tardiglacial and Early Holocene. *Preistoria Alpina* 34(1998):173-179.
- GARDEISEN, A. (2001). Des animaux dans des tombes: archéozoologie dans les Grands Causses du Gévaudan au premier âge du Fer. In *Tombes et pratiques funéraires protohistoriques des Causses du Gévaudan*, B. Dedet (ed.), pp. 337-343. Documents d'Archéologie Française 84. Paris: Maison des Sciences de l'Homme Publications.
- GARDEISEN, A., ed. (2002). *Mouvements et déplacements de populations animales en Méditerranée au cours de l'Holocène*. BAR International Series 1017. Oxford: Archaeopress.
- GARDEISEN, A. (2003). La faune. In *Nécropoles protohistoriques de la région de Castres (Tarn); Le Causse, Gourjage, Le Martinet*, J.P. Giraud et al. (eds.), pp. 211-232. Documents d'Archéologie Française 94. Paris: Maison des Sciences de l'Homme Publications.
- GARDEISEN, A., et al. (2002). La recherche archéozoologique en Albanie: un état de la question à Sovjan. Colloque de l'Université de Bretagne Sud (Lorient) et de l'Ecole française d'Athènes du 8 au 10 juin 2000, "L'Albanie dans l'Europe préhistorique" (7000-700 av. n. è. J.C.). *Bulletin de Correspondance Hellénique Supplément* 42:43-60.
- GIRAUD, J.P., F. PONS, and T. JANIN (2003). Nécropoles protohistoriques de la région de Castres (Tarn): Le Causse, Gourjage, Le Martinet. Documents d'Archéologie Française 94. Paris: Maison des Sciences de l'Homme Publications.
- GOBALET, K.W. and T.A. WAKE (2000). Archaeological and paleontological fish remains from the Salton Basin, southern California. *The Southwestern Naturalist* 45(4):514-520.
- GRAYSON, D.K. (2002). Great Basin mammals and Late Quaternary climate history. In *Great Basin Aquatic System History*, R. Hershler, D. R. Currey, and D. B. Madsen (eds.), pp. 369-385. Smithsonian Contributions to Earth Sciences 33. Washington DC: Smithsonian Institution Press.
- GRAYSON, D.K. and F. DELPECH (2002). Specialized Early Upper Paleolithic hunters in southwestern France?. *Journal of Archaeological Science* 29:1439-1449.
- GRAYSON, D.K. and D.J. MELTZER (2003). A requiem for North American overkill. *Journal of Archaeological Science* 30:585-593.
- GRAYSON, D.K. and D.J. MELTZER (2003). Clovis hunting and large mammal extinction: a critical review of the evidence. *Journal of World Prehistory* 16:313-359.
- GREENFIELD, H.J. (2000). The origins of metallurgy in the central Balkans based on the analy-

- sis of cut marks on animal bones. *Environmental Archaeology* 5:119-132.
- GREENFIELD, H.J. (2000). Animal bone fragmentation and the origins of metallurgy in the central Balkans. In *Technology, Style and Society: Contributions to Innovations between the Alps and the Black Sea in Prehistory*, L. Nikolova (ed.), pp. 93-96. BAR International Series 854. Oxford: Archaeopress.
- GREENFIELD, H.J. (2001). Transhumant pastoralism and the colonization of the highlands in temperate southeastern Europe. In *Untrampled Ground - Untrammelled Views: Human Exploitation of and Settlement Patterns on New Landscapes (Proceedings of the 31<sup>st</sup> (1998) Annual Chacmool Conference)*, S. Tupakka et al. (eds.), pp. 471-492. Alberta: University of Calgary.
- GREENFIELD, H.J. (2001). The origins of transhumant pastoralism and the colonization of agriculturally marginal highlands in temperate southeastern Europe: an explanatory model. In *Man and Animals in the Past*, H. Buitenhuis and W. Prummel (eds.), pp. 74-81. Publication 41. Groningen: Archaeological Research and Consultancy.
- GREENFIELD, H.J. (2002). Faunal remains from the Early Bronze age site of Titris, Titris Höyük, Turkey. In *Archaeozoology of the Near East V*, H. Buitenhuis, A.M. Choyke, M. Mashkour, and A.H. Al-Shiyab (eds.), pp. 252-261. Publication 62. Groningen: Archaeological Research and Consultancy.
- HILL, E. (2000). The contextual analysis of animal interments and ritual practice in southwestern North America. *Kiva* 65(4):361-398.
- HOCKETT, B. (2002). Advances in Paleolithic zooarchaeology: an introduction. *Journal of Archaeological Method and Theory* 9(2):97-100.
- HOCKETT, B. and J.A. HAWS (2002). Taphonomic and methodological perspectives of leporid hunting during the Upper Paleolithic of the western Mediterranean basin. *Journal of Archaeological Method and Theory* 9(3):269-302.
- KAHILA BAR-GAL, G., P. SMITH, E. TCHERNOV, C. GREENBLATT, P. DUCOS, A. GARDEISEN, and L.K. HORWITZ (2002). Genetic evidence for the origin of the Agrimi goat (*Capra aegagrus cretica*). *Journal of Zoology* 256:369-377.
- KIRCH, P.V. and S.J. O'DAY (2003). The many smoky fish of the land: new archaeological insights to food and status in pre-contact Hawai'i. *World Archaeology* 34(3):484-497.
- KUHN, S.L. and M.C. STINER (2001). The antiquity of hunter-gatherers. In *Hunter-Gatherers: Interdisciplinary Perspectives*, C. Panter-Brick et al. (eds.), pp. 99-142. Cambridge: Cambridge University Press.
- KUHN, S.L., M.C. STINER, D.S. REESE, and E. GÜLEÇ (2001). Ornaments in the earliest Upper Paleolithic: new results from the Levant. *Proceedings of the National Academy of Science* 98(13):7641-7646.
- LEFEVRE, D., J.-P. RAYNAL, G. VERNET, G. KIEFFER, M. PIPERNO, and A. TAGLIACOZZO (2001). Hommes et volcans au Pléistocène moyen dans le bassin de Venosa (Basilicata, Italie). In *Tephros, chronologie, archéologie*, E. Juvigné and J.-P. Raynal (eds.), pp. 175-182. Les dossiers de L'Archéo-Logis 1.
- LIESAU, C. and E. CORONA-M. (2002). La fauna de la Colección Berto. Una aproximación curatorial. In *La Colección Berto del Museo d'Arqueología de Catalunya: Una Nueva Mirada a la Prehistoria de Madrid*, M.C. Blasco Bosqued (ed.), pp. 67-78. Monografies 3. Barcelona: Museo d'Arqueología de Catalunya.
- LÕUGAS, L., P. UKKONEN, and H. JUNGNER (2002). Dating the extinction of European mammoths: new evidence from Estonia. *Quaternary Science Reviews* 21(12-13):1347-1354.
- LUBINSKI, P.M. (2000). Prehistoric pronghorn hunting in southwest Wyoming. In *Pronghorn Past and Present: Archaeology, Ethnography, and Biology*, J.V. Pastor and P.M. Lubinski (eds.), pp. 109-118. Plains Anthropologist Memoir 32. Lincoln: Plains Anthropological Society.
- LUBINSKI, P.M. (2000). A comparison of methods for evaluating ungulate mortality distributions. In *Assessing Season of Capture, Age and Sex of Archaeofaunas*, A. Pike-Tay (ed.), pp. 121-134. *Archaeozoologia* XI. Paris: La Pensée Sauvage.
- LUBINSKI, P.M. (2001). Estimating age and season of death of pronghorn antelope (*Antilocapra americana* Ord) by means of tooth eruption and wear. *International Journal of Osteoarchaeology* 11:218-230.
- LUBINSKI, P.M. and V. HERREN (2000). An introduction to pronghorn biology, ethnography, and archaeology. In *Pronghorn Past and Present: Archaeology, Ethnography, and Biology*, J.V. Pastor and P.M. Lubinski (eds.), pp. 3-11. Plains Anthropologist Memoir 32. Lincoln: Plains Anthropological Society.
- LUBINSKI, P.M. and C.J. O'BRIEN (2001). Observations on seasonality and mortality from a recent catastrophic death Assemblage. *Journal of Archaeological Science* 28:833-842.
- LUCAS, G.S. and E.J. REITZ (2001). Vertebrate fauna from 14 Legare Street, Charleston, South Carolina. In *Excavations at 14 Legare Street, Charleston, South Carolina*, M. Zierden (ed), Appendix IV-1-IV-79. Archaeological Contributions 28. Charleston: Charleston Museum.
- LUPO, K.D. and D.N. SCHMITT (2002). Upper Paleolithic net-hunting, small prey exploitation, and women's work effort: a view from the ethnographic and ethnoarchaeological record of the Congo Basin. *Journal of Archaeological Method and Theory* 9(2):147-179.
- MADRIGAL, T.C. (2000). Woodland period subsistence at Lamoka Lake: animal bones from the Buffalo Museum of Science excavations. *The Bulletin and Journal of the New York State Archaeological Association* 116:25-34.
- MADRIGAL, T.C. and J.Z. HOLT (2002). White-tailed deer meat and marrow return rates and their application to eastern Woodlands archaeology. *American Antiquity* 67(4):745-759.
- MARTIN, L., N. RUSSELL, and D. CARRUTHERS (2002). Animal remains from the central Anatolian Neolithic. In *The Neolithic of Central Anatolia: Internal Developments and External Relations during the 9th-6th Millennium cal BC*, F. Gérard and L. Thissen (eds.), pp. 193-206. Istanbul: Ege Yayınlarz.
- MARTENS, M., A. LENTACKER, and A. ERVYNCK (2002). Restes d'un festin en l'honneur du dieu Mithra et autres dépôts rituels dans le vicus de Tirmont. In *Archéologie du sacrifice animal en Gaule romaine: Rituels et pratiques alimentaires. Volume des Pré-Actes*, S. Lepetz and W. Van Andringa (eds.), pp. 67-69. Paris: Centre de Recherches Archéologiques.
- MARTINSSON-WALLIN, H. and S.J. CROCKFORD (2001). Early human settlement of Rapa Nui (Easter Island). *Asian Perspectives* 40(2):244-278.
- MIRACLE, P.T. (2002). Mesolithic meals from Mesolithic middens. In *Consuming Passions and Patterns of Consumption*, P.T. Miracle and N. Milner (eds.), pp. 65-88. Cambridge: McDonald Institute for Archaeological Research.
- MIRACLE, P.T. and N. MILNER, eds. (2002). *Consuming Passions and Patterns of Consumption*. Cambridge: MacDonal Institute.
- MIRACLE, P.T. (2001). Feast or famine? Epipaleolithic subsistence in the northern Adriatic basin. *Documenta Archaeologica* XXVIII:177-197. Ljubljana.
- MONDINI, N.M. (2001). Taphonomic action of foxes in Puna rockshelters: a case study in Antofagasta de la Sierra (Province of Catamarca, Argentina). In *Ethnoarchaeology of Andean South America: Contributions to Archaeologi-*

- cal Method and Theory*, L.A. Kuznar (ed.), pp. 266-295. Ann Arbor: International Monographs in Prehistory.
- MONDINI, M.N. (2002). Carnivore taphonomy and the early human occupations in the Andes. *Journal of Archaeological Science* 29(7):791-801.
- MONTELLANO BALLESTEROS, M. and J. ARROYO CABRALES, eds. (2002). *Avances en los estudios paleomastozoológicos en México*. México: Científica. Instituto Nacional de Antropología e Historia.
- MUZZOLINI, A. (2000). Livestock in Saharan rock art. In *The Origins and Development of African Livestock*, edited by R.M. Blench and K.C. MacDonald, pp. 87-110. London: University College London Press.
- NIVEN, L. and P. WOJTAL (2002). Cement furrows in the dentition of *Mammuthus primigenius* and the question of their etiology. *Acta Zoologica Cracoviensis* 45(2):307-319.
- O'CONNOR, T.P. (2002). Medieval zooarchaeology: what are we trying to do?. *Archaeological Review from Cambridge* 18:3-21.
- O'CONNOR, T.P. (2003). *The Analysis of Urban Animal Bone Assemblages*. The Archaeology of York 19/2. York: Council for British Archaeology.
- O'DAY, S.J. (2002). Late prehistoric Lucayan occupation and subsistence on Middle Caicos Island, Northern West Indies. *Caribbean Journal of Science* 38(1-2):1-10.
- PALOMBO, M.R. and A. TAGLIACOZZO (2002). L'America meridionale e l'Australia. In *Il Mondo dell'Archeologia*, S. Moscati (ed.), pp. 452-454. Vol. I, Parte seconda: "Grandi temi della ricerca archeologica", 1: Ambiente, Uomo e Culture Preistoria e Protostoria.
- PALOMBO, M.R. and A. TAGLIACOZZO (2002). Le faune insulari. In *Il Mondo dell'Archeologia*, S. Moscati (ed.), pp. 454-455. Vol. I, Parte seconda: "Grandi temi della ricerca archeologica", 1: Ambiente, Uomo e Culture Preistoria e Protostoria.
- PAVAO-ZUCKERMAN, B. (2001). Culture contact and subsistence change at Fusihatchee (1EE191). Unpublished PhD Dissertation, Department of Anthropology, University of Georgia, Athens, Georgia.
- PAYNE, S. (2002). Animal bones from Catterick 1972 (Site 434). In *Cataractonium: Roman Catterick and its Hinterland: Excavations and Research, 1958-1997*, P.R. Wilson (ed.), pp. 415-419. Research Report 129. York: Council for British Archaeology.
- PEACOCK, E. and T. SCHAUWECKER, eds. (2003). *Blackland Prairies of the Gulf Coastal Plain: Nature, Culture, and Sustainability*. Tuscaloosa: University of Alabama Press.
- PIKE-TAY, A. and R. COSGROVE (2002). From reindeer to wallaby: recovering patterns of seasonality, mobility, and prey selection in the Palaeolithic Old World. *Journal of Archaeological Method and Theory* 9(2):101-146.
- PERESANI, M. and A. TAGLIACOZZO (2002). La sequenza musteriana di Grotta di Fumane. In *Preistoria Veronese. Contributi e aggiornamenti*, A. Aspes (ed.), pp. 22-24. Memorie del Museo Civico di Storia Naturale di Verona, II serie, Sezione Scienze dell'Uomo 5, Verona.
- PLUG, I. and S. BADENHORST (2002). The dwarf cattle and unusually small sheep/goat from Muozzi, Zimbabwe. In *Nyanga: ancient fields, settlements and agricultural history in Zimbabwe*, R. Soper (ed.), pp. 242-248. Memoir 16. London: British Institute in Eastern Africa.
- PORCASI, J.F. and S.L. ANDREWS (2001). Evidence for a prehistoric Mola-mola fishery on the southern California coast. *Journal of California and Great Basin Anthropology* 23(1):51-65.
- REESE, D.S. (2000). Worked astragali; Ostrich Eggshell; Fossils; The Iron Age fauna. In *Kommos IV The Greek Sanctuary*, J.W. Shaw and M.C. Shaw (eds.), pp. 398-407, 415-495, 560-646. Princeton: Princeton University Press.
- REESE, D.S. (2001). Some comments on the Akrotiri Aetokremnos fauna. In *The Earliest Prehistory of Cyprus: From Colonization to Exploitation*, S. Swiny (ed.), pp. 19-36. American Schools of Oriental Research Archaeological Reports 5. Cyprus American Archaeological Research Institute Monograph Series 2. Boston: American Schools of Oriental Research.
- REITZ, E.J. (2001). Vertebrate fauna from the Miles Brewton House, Charleston, South Carolina. In *Archaeology at the Miles Brewton House, 27 King Street*, M. Zierden (ed.), pp. 127-195. Archaeological Contributions 29. Charleston: The Charleston Museum.
- REITZ, E. J. (2002). Vertebrate fauna from Atlantic Wharf. In *Excavations on Charleston's Waterfront: The Atlantic Wharf Garage Site*, M. Zierden (ed.), pp. 48-81. Archaeological Contributions 30. Charleston: The Charleston Museum.
- REITZ, E.J., C.S. LARSEN, and M.J. SCHOENINGER (2002). Resource utilization and dietary reconstruction. In *Bioarchaeology of the Late Prehistoric Guale, South End Mound I, St. Catherines Island, Georgia*, C.L. Larsen (ed.), pp. 41-46. Anthropological Papers 84. New York: American Museum of Natural History.
- REITZ, E.J. and D.H. SANDWEISS (2001). Environmental change at Ostra Base Camp, a Peruvian Pre-ceramic site. *Journal of Archaeological Science* 28(10):1085-1100.
- RICHARDS, M.P., J.A. PEARSON, T.I. MOLLESON, N. RUSSELL, and L. MARTIN (2003). Stable isotope evidence of diet at Neolithic Üatalhöyük, Turkey. *Journal of Archaeological Science* 30(1):67-76.
- RICHARDS, M.P., P.B. PETTITT, M.C. STINER, and E. TRINKAUS (2001). Stable isotope evidence for increasing dietary breadth in the European Mid-Upper Paleolithic. *Proceedings of the National Academy of Sciences* 98(11):6528-6532.
- ROBINSON, S., R.A. NICHOLSON, A.M. POLLARD, and T.P. O'CONNOR (2003). An evaluation of nitrogen porosimetry as a technique for predicting taphonomic durability in animal bone. *Journal of Archaeological Science* 30:391-403.
- ROJO, ALFONSO (2002). *Morphological and Biometric Study of the Bones of the Buccal Apparatus of Some Nova Scotia Fishes of Archaeological Interest*. Curatorial Report 96. Halifax: Nova Scotia Museum.
- RUSSELL, N. (2002). The wild side of animal domestication. *Society & Animals* 10(3):285-302.
- SABLIN, M.V. and G.A. KHLOPACHEV (2002). The earliest Ice Age dogs: evidence from Eliseevichi I. *Current Anthropology* 43(5):795-799.
- SAMPSON, C.G. (2003). Amphibians from the Acheulean site at Duinefontein 2 (Western Cape, South Africa). *Journal of Archaeological Science* 30(5):547-557.
- SERJEANTSON, D. (2002). Goose husbandry in medieval England, and the problem of ageing goose bones. *Acta Zoologica Cracoviensis* 45:39-54 (special issue).
- SERJEANTSON, D. (2003). Bird bones from Baleshare and Hornish Point, North Uist. In *Bronze Age Farms and Iron Age Farm Mounds of the Outer Hebrides*, J. Barber (ed.), pp. 150-152. Scottish Archaeology Internet Reports 3 ([www.sair.org.uk/sair3/sair3-chap11.pdf](http://www.sair.org.uk/sair3/sair3-chap11.pdf)).
- SPASSOV, N., N. ILIEV, and Z. BOEV (2001). Animal remains from the Eneolithic site near the village of Dolnoslav, Plovdiv District, South Bulgaria. *Historia Naturalis Bulgarica* 13:159-179 [in Bulgarian with English summary].
- STAHL, P.W. (2003). Pre-Columbian Andean animal domesticates at the edge of empire. *World Archaeology* 34(3):470-483.

- STAHL, P.W. (2003). The zooarchaeological record from Formative Ecuador. In *Archaeology of Formative Ecuador*, J.S. Raymond and R. Burger (eds.), pp. 175-212. Trustees for Harvard University. Washington DC: Dumbarton Oaks.
- STEADMAN, D.W. and A.V. STOKES (2002). Changing exploitation of terrestrial vertebrates during the past 3000 years on Tobago, West Indies. *Human Ecology* 30(3):339-367.
- STINER, M.C. (2001). Thirty years on the "broad spectrum revolution" and Paleolithic demography. *Proceedings of the National Academy of Sciences* 98(13):6993-6996.
- STINER, M.C. (2002). Carnivory, coevolution, and the geographic spread of the genus *Homo*. *Journal of Archaeological Research* 10(1):1-63.
- STINER, M.C. (2002). On *in situ* attrition and vertebrate body part profiles. *Journal of Archaeological Science* 29: 979-991.
- STINER, M.C., F.C. HOWELL, B. MARTÍNEZ-NAVARRO, E. TCHERNOV and O. BAR-YOSEF (2001). Outside Africa: Middle Pleistocene *Lycaon* from Hayonim Cave, Israel. *Bolletino della Società Paleontologica Italiana* 40(2):293-302. Special issue: Papers in Honour of Augusto Azzaroli, L. Rook and D. Torre (eds.).
- STINER, M.C., S. KUHN, T.A. SUROVELL, P. GOLDBERG, L. MEIGNEN, S. WEINER and O. BAR-YOSEF (2001). Bone preservation in Hayonim Cave (Israel): a macroscopic and mineralogical study. *Journal of Archaeological Science* 28:643-659.
- STINER, M.C. and N.D. MUNRO (2002). Approaches to prehistoric diet breadth, demography, and prey ranking systems in time and space. *Journal of Archaeological Method and Theory* 9(2):181-214.
- STINER, M.C., N.D. MUNRO and T.A. SUROVELL (2000). The tortoise and the hare: small game use, the broad spectrum revolution, and paleolithic demography. *Current Anthropology* 41(1):39-73.
- SUROVELL, T.A. and M.C. STINER (2001). Standardizing infra-red measures of bone mineral crystallinity: an experimental approach. *Journal of Archaeological Science* 28:633-642.
- TAGLIACOZZO, A. (2001). L'analisi della fauna. In *Il teatro romano di Asolo. Valore e funzione di un complesso architettonico urbano sulla scena del paesaggio*, G. Rosada (ed.), pp. 43-53. Testis temporum, III, Treviso.
- TAGLIACOZZO, A. (2002). La fauna. In *Risultati delle ricerche alla Grotta del Pino (Sassano, Salerno)*, M. Piperno and E. Pellegrini (eds). *Bolletino di Paleontologia Italiana* 91-92(2000-2001):153-165.
- TAGLIACOZZO, A. (2002). Gli aspetti paleontologici. In *Il Mondo dell'Archeologia*, S. Moscati (ed.), pp. 233-236. Vol. I, Parte Prima: "Storia Metodi e Tecniche" 2: La ricerca archeologica: Fonti, Metodi e Tecniche.
- TAGLIACOZZO, A. (2002). La caccia. In *Il Mondo dell'Archeologia*, S. Moscati (ed.), pp. 611-612. Vol. I, Parte seconda: "Grandi temi della ricerca archeologica" 2: L'acquisizione e la produzione delle risorse alimentari
- TAGLIACOZZO, A. (2002). Lo sfruttamento degli ambienti acquatici. In *Il Mondo dell'Archeologia*, S. Moscati (ed.), pp. 613-616. Vol. I, Parte seconda: "Grandi temi della ricerca archeologica" 2: L'acquisizione e la produzione delle risorse alimentari.
- TAGLIACOZZO, A. (2003). Archeozoologia dei livelli dell'Epigravettiano finale di Grotta Romanelli (Castro, Lecce). Strategia di caccia ed economia di sussistenza. In *Grotta Romanelli nel centenario della sua scoperta 1900-2000*, P.F. Fabbri, E. Ingravallo, and A. Mangia (eds.), pp. 169-216. Congedo ed. Lecce.
- TAGLIACOZZO, A. and A. CURCI (2001). I dati archeozoologici: allevamento e caccia nell'età del bronzo. In *Torre Mordillo 1987-1990*, F. Trucco and L. Vagnetti (eds.), pp. 347-418. Le relazioni Egee di una comunità protostorica della Sibaritide, Istituto per gli Studi Micenei ed Egeo-Anatolici.
- TAGLIACOZZO, A., A. CURCI, and A. FACCILOLO (2002). Studio archeozoologico dell'insediamento eneolitico di "Cerquete-Fianello", Maccarese (Fiumicino). Strategie di allevamento nell'Eneolitico dell'Italia centrale. In *Le dune, il lago, il mare. Una comunità di villaggio dell'età del Rame a Maccarese*, A. Manfredini (ed.), pp. 216-245. Origines studi e materiali pubblicati a cura dell'IIPP, Firenze.
- TAGLIACOZZO, A. and M. GALA (2002). Exploitation of Anseriformes at two Upper Palaeolithic sites in Southern Italy: Grotta Romanelli (Lecce, Apulia) and Grotta del Santuario della Madonna di Praia a Mare (Cosenza, Calabria). *Acta Zoologica Cracoviensia* 45:117-131 (special issue).
- TAPPEN, M. (2001). Deconstructing the Serengeti. In *The Early Human Diet: The Role of Meat*, C. Stanford and H.T. Bunn (eds), pp. 13-32. Oxford: Oxford University Press.
- TAPPEN, M., D.S. ADLER, C.R. FERRING, M. GABUNIA, A. VEKUA, and C. SWISHER III (2002). Akhalkalaki: the taphonomy of a lower Pleistocene locality in the Republic of Georgia. *Journal of Archaeological Science* 29:1367-1391.
- TAPPEN, M., C.R. FERRING, D. LORDKIPANIDZE, A. VEKUA, and G. KILADZE (2002). Preliminary observations on the vertebrate taphonomy of the Dmanisi locality in The Republic of Georgia. In *Current Topics on Taphonomy and Fossilization*, M. De Renzi et.al (eds.), pp. 161-170. Valencia: Ajuntament de Valencia.
- THOMAS, R. (2002). Animals, economy and status: the integration of historical and zooarchaeological evidence in the study of a medieval castle. Unpublished Ph.D. Dissertation, University of Birmingham.
- TORTOSA, J. EMILI AURA, V. VILL-AVERDE BONILLA, M. PÉREZ RIPOLL, R. MARTÍNEZ VALLE, and P. GUILLEM CALATAYUD (2002). Big game and small prey: Paleolithic and Epipaleolithic economy from Valencia (Spain). *Journal of Archaeological Method and Theory* 9(3):215-268.
- VAN NEER, W., A. ERVYNCK, A. RIJNSDORP, L. BOLLE, and R. MILLNER (2002). Fish otoliths and their relevance to archaeology: an analysis of medieval, post-medieval and recent material from plaice, cod and haddock from the North Sea. *Environmental Archaeology* 7:65-81.
- VEKUA, A., D. LORDKIPANIDZE, P. RIGHTMIRE, J. AGUSTI, C.R. FERRING, G. MAISURADZE, A. MOUSKHELISHVILI, M. NIORADZE, M. PONCE DE LEON, M. TAPPEN, M. TVAL-CHRELIDZE, and C.A. ZOLLIKOFER (2002). A new skull from early Homo from Dmanisi, Georgia. *Science* 297:85-89.
- VERSAGGI, N., L. WURST, T.C. MADRIGAL, and A. LAIN (2001). Adding complexity to Late Archaic research in the northeastern Appalachians. In *Archaeology of the Appalachian Highlands*, L. Sullivan and S. Prezzano (eds.), pp. 121-136. Knoxville: University of Tennessee Press.
- VILA, E. (2000). Bones remains from sacrificial places: the temples of Athena Alea at Tegea and of Asea on Agios Elias (The Peloponnese, Greece). In *Archaeozoology of the Near East IV(B)*, M. Mashkour, A.M. Choyke, H. Buitenhuis, and F. Poplin (eds.), pp. 197-205. Publication 32. Groningen: Archaeological Research and Consultancy.
- VILA, E. (2001). Comparaison entre les données ostéologiques de Transcaucasie et de ses abords méridionaux du Néolithique au Bronze ancien. In *Beiträge zur Vorderasiatischen Archäologie Winfried Orthmann Gewidme*, J.W. Meyer, M. Novak et A.Pruß (eds.), pp. 464-477. Frankfurt am Main: Archäologisches Institut.

VILA, E. (2002). L'évolution de la taille du mouton dans le nord de la Mésopotamie: les faits et leurs causes. In *D'os, d'Image et de Mots: Contribution à la Réflexion sur les Sources de l'Histoire des Connaissances Zoologiques*, L. Bodson (ed.), pp. 47-79. Colloques d'Histoire des Connaissances Zoologiques 13. Liège: Université de Liège.

VILA, E. (2002). Les vestiges de chevilles osseuses de gazelles du secteur F de Tell Chuera (Syrie, Bronze ancien). *Archaeozoology of the Near East V*, H. Buitenhuis, A.M. Choyke, M. Mashkour, and A.H. Al-Shiyab (eds.), pp. 241-250. Publication 62. Groningen: Archaeological Research and Consultancy.

VOORHIES, B., D.J. KENNETT, J.G. JONES, and T.A. WAKE (2002). A Middle Holocene archaeological site on the west coast of Mexico. *Latin American Antiquity* 13(2):179-200.

WEBBER, J.Z., J.M. COMPTON, and E.J. REITZ (2002). Vertebrate fauna from Mission Nuestra Señora del Refugio (41RF1), Refugio County, Texas. In *Nuestra Señora del Refugio (41RF1), Refugio County, Texas, Vol. I, Archaeological Investigations*, C.L. Tennis (ed.), pp. 271-311. Center for Archaeological Research Archaeological Survey Report 315. San Antonio: The University of Texas.


WAKE, T.A. (2001). Bone tool technology on Santa Cruz Island and implications for exchange. In *The Origins of a Pacific Coast Chiefdom: The Chumash of the Channel Islands*, J.E. Arnold (ed.), pp. 183-198. Salt Lake City: University of Utah Press.

WAKE, T.A. and D.D. SIMONS (2000). Trans-Holocene subsistence strategies and topographic change on the northern California coast: the fauna from Duncans Point Cave. *Journal of California and Great Basin Anthropology* 22(2):295-320.

WAKE, T.A. and L.R. HARRINGTON (2002). Vertebrate faunal remains from La Blanca, Guatemala. In *Early Complex Society in Pacific Guatemala: Settlements and Chronology of the Rio Naranjo, Guatemala*, M.W. Love (ed.), pp. 237-252. Papers of the New World Archaeological Foundation 66. Provo: Brigham Young University.

YUAN, J. (2002). The formation and development of Chinese zooarchaeology: a preliminary review. *Archaeofauna* 11:205-212.

YUAN, J. and R.K. FLAD (2002). Pig domestication in ancient China. *Antiquity* 76(293):724-732.

ZIERDEN, M.A. and E.J. REITZ (2002). Eighteenth-century Charleston: aftermath of the siege. *El Escribano* 39:113-131. 


*Continued from page 1- ICZN Opinion placed on the Official Index of Rejected and Invalid Specific Names in Zoology.*

#### **-History of Case 3010-**

An application for the conservation of usage of the first available specific name based on a wild population for 15 wild species of mammals with domestic derivatives was received from Mrs. Anthea Gentry (*Cuckfield, Haywards Heath, West Sussex, U.K.*), Dr. Juliet Clutton-Brock (*Working Group on Nomenclature, International Council of Archaeozoology, c/o The Natural History Museum, London, U.K.*), and Prof. Colin P. Groves (*The Australian National University, Canberra, A.C.T., Australia*) on December 14, 1995. The case was published in March 1996 in the *Bulletin of Zoological Nomenclature* 53:28-37.

#### **-Original References-**

The following are the original references to the names placed on the Official List, on the Official Index, and the names on the Official List for which the entries are endorsed by the ruling given in the present Opinion: *aegagrus*, *Capra*, Erxleben, 1777, *Systema regni animalis... Classis 1 (Mammalia)*, p. 260 • *africanus*, *Equus*, Heuglin & Fitzinger, 1866, *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften. Mathematisch-Naturwissenschaftliche Classe* 54:588 • *aperea*, *Cavia*, Erxleben, 1777, *Systema regni animalis... Classis 1 (Mammalia)*, p. 348 • *arnee*, *Bos*, Kerr, 1792, *The animal kingdom or zoological system of the celebrated Sir Charles Linnaeus*, vol. 1, part 1 (Mammalia), p. 336 • *ferus*, *Camelus bactrianus*, Przewalski, 1878, *From Kul'dzha through Tyan'-Shan' to Lob-Nor*, pp. 20, 43 [in Russian] • *ferus*, *Camelus dromedarius*, Falk, 1786, *Beiträge zur topographischen Kenntnis des Russischen Reiches*, vol. 3, p. 292 • *ferus*, *Equus*, Boddaert, 1785, *Elenchus Animalium*, vol. 1 (Sistens Quadrupedia), p. 159 • *gaurus*, *Bos*, H. Smith, 1827, *The Ruminantia*. Vol. 4 in E. Griffith, C.H. Smith, and E. Pidgeon (eds.), *The animal kingdom arranged in conformity with its organisation, by the Baron Cuvier, with additional descriptions of all the species hitherto named, and of many not before noticed*, p. 399 • *gibelio*, *Cyprinus*, Bloch, 1782, *Oeconomische Naturgeschichte der Fische Deutschlands*, vol. 1, p. 71 • *guanicoe*, *Camelus*, Müller, 1776, *Des Ritters Carl von Linné ... voustandigen Natursystems*. Supplements und Register, p. 50 • *lupus*, *Canis*, Linnaeus, 1758, *Systema*

*naturae*, Ed. 10, vol. 1, p. 39 • *mandarina*, *Theophila*, Moore, 1872, *Proceedings of the Zoological Society of London* 1872:576 • *mutus*, *Poephagus*, Przewalski, 1883, *Third journey in Central Asia. From Zaisan through Khami into Tibet and to the sources of the Yellow River*, p. 191 [in Russian] • *orientalis*, *Ovis*, Gmelin, 1774, *Reise durch Russland zur Untersuchung der drey Natur-Reiche*, vol. 3, pp. 432, 486 • *primigenius*, *Bos*, Bojanus, 1827, *Nova Acta Physico-Medica Academiae Caesareae Leopoldino Carolinae*, 13(2): 477 • *putorius*, *Mustela*, Linnaeus, 1758, *Systema naturae*, Ed. 10, vol. 1, p. 46 • *silvestris*, *Felis catus*, Schreber, 1777, *Die Säugthiere in Abbildungen nach der Natur, mit Beschreibungen*, vol. 3, p. 39 • *vicugna*, *Camelus*, Molina, 1782, *Saggio sulle storia naturale del Chile*, p. 313. 

*Continued from page 2- Letter from President*

is quite even with 50% of the membership from Europe, 41% from the Americas, and 9% from Africa, Asia, and Oceania. The breadth of regional representation in the residence of ICAZ members is matched by their wide ranging regional research interests. Just under half of the membership (49%) works on research problems centered in Europe, 25% work on topics centered in North America, 7% in South and Central America, 17% on Asia or Oceania, and 2% in Africa. There is a wide and even spread in both temporal span of research interests and in taxa studied by ICAZ members.

But perhaps one of the most exciting things about the current ICAZ membership is its youth. More than half of ICAZ members are under 40, with 28% of members in the 20-29 age range and another 28% in the 30-39 year age range. The dominance of young researchers in the organization signals a vibrant future for ICAZ.

There is also a growing increase in the representation of women among younger ICAZ members. While women make up only 23% of ICAZ members over 60, their proportional representation increases in each age group reaching 60% of ICAZ members in their 30s, and 66% of members in their 20s. This increase is in step with the steady increase in women in archaeology graduate programs and in the ranks of young professional archaeologists documented in the Americas (Zeder 1997), and likely also seen in other regions around the world.

*Continued on page 13*

## Treasurer's Report

15 April 2003 (1)

The Treasurer wishes to acknowledge the generosity of the University of Durham for waiving fees that could have been charged in relation to credit card transactions during the ICAZ 2002 conference. He also wishes to extend his appreciation to the organizers of ICAZ 2002 for their excellent financial management that resulted in reimbursement to ICAZ of all funds advanced to them for creating a conference webpage and for providing individual members with help to attend the conference. As a result of these happy occurrences, ICAZ is in excellent financial health.

### *US Dollar Account*


Bank Balance 14 January 2002	\$11,833.53
Total membership dues deposited and cleared 14/I/02-14/I/03	3,735.00
Total banking fees 14/I/02-14/I/03	(86.18)
Reimbursement for overpayment of dues	(85.00)
Newsletter costs 15/V/02, cleared 22/VIII/02	(660.96)
Subvention for ICAZ 2002 (2)	(4,500.00)
<u>Webmaster Fee 1/XI/02, cleared 16/XII/02 (3)</u>	<u>(1,330.00)</u>
Bank Balance 14 January 2003	\$8,906.39
Total membership dues deposited 14/I/03-15/IV/03	2,442.00
Total banking fees 14/I/03-15/IV/03	(41.34)
<u>Repayment by University of Durham (2)</u>	<u>6,000.00</u>
Total (4)	\$17,307.05

### *Euro Account*

Bank Balance 14 January 2002	€ 124.88
Total membership dues deposited and cleared 14/I/02-14/I/03	754.30
<u>Total banking fees 14/I/02-14/I/03</u>	<u>(42.72)</u>
Bank Balance 14 January 2003	€ 836.46
Total membership dues deposited 14/I/03-15/IV/03	252.29
<u>Total banking fees 14/I/03-15/IV/03</u>	<u>(7.90)</u>
Total	€1,080.85

### *UK Pounds Sterling Account*

Bank Balance 8 February 2002	£ 907.11
Total membership dues collected and cleared 8/II/02-7/II/03	2,810.05
Total membership dues and surcharges collected by U. of Durham (5)	4,150.00
Interest (6)	.13
Total banking fees 8/II/02-7/II/03	(5.50)
Supplies for ICAZ 2002	(89.80)
Registration fees paid for assistants at ICAZ 2002 (7)	(205.00)
<u>Assistant to the General Secretary fee (8)</u>	<u>(675.00)</u>
Bank Balance 7 February 2003	£6,891.99
<u>Total membership dues deposited 7/II/03-15/IV/03</u>	<u>211.59</u>
Total	£7,103.58

*Notes:* 1) The format of the present report follows that of 15 April 2002; 2) Payments of \$1500 and \$4500 were made to the University of Durham for expenses relating to the 2002 International Conference of ICAZ. These payments were reimbursed to ICAZ in January 2003; 3) The International Committee of ICAZ authorized the Treasurer to pay to Southern Illinois University the sum of \$1300 per year for the webpage maintenance and newsletter editing services of Heather Lapham. The additional \$30 was paid for banking fees that are to be refunded; 4) Does not include newsletter expenses for the Fall 2002 and Spring 2003 newsletters. Cost for the former was \$573.75, for the latter, not yet available; 5) Credit card payment of dues totaled £2020. Surcharges for non-members registering for ICAZ 2002 totaled £2130, much of which was applied to the dues of those individuals who had paid the surcharge but who joined ICAZ at the conference. The University of Durham kindly waived fees on these transactions; 6) Interest of 13 pence has accrued due to a banking error; 7) The International Committee of ICAZ authorized the Treasurer to pay the conference registration fees for three members who assisted the officers of ICAZ at ICAZ 2002 at the membership tables; 8) The International Committee of ICAZ authorized the Treasurer to pay Juan Rofes the sum of \$1000 (£675) for helping to update and maintain the ICAZ member database in the office of the General Secretary. • Submitted 16 April 2003 by Richard H. Meadow, Treasurer, ICAZ. 

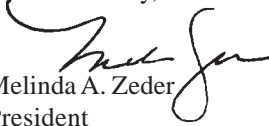
*Continued from page 12- Letter from President*


We are also looking forward to a number of upcoming ICAZ Working Group (WG) meetings. In 2003, these include meetings of the Camelid WG in Argentina, the Worked Bone WG in Estonia, the Fish WG in Mexico, and the Bird WG in Germany. The ICAZ Executive Committee will also meet during the Fish WG meeting and the International Committee will meet in Copenhagen next spring (see Calendar pg. 16). The newly formed Archaeozoology and Genetics WG has planned to meet in Paris in 2004. ICAZ is not resting on its laurels, but actively gearing up for a new round of exciting opportunities for you to share your research and learn from fellow researchers.

Finally, I want to point out an important evolutionary process in this Newsletter. Under the guiding hand of Newsletter editor Heather Lapham, the ICAZ Newsletter is increasingly comprised of material submitted by ICAZ members. This issue alone offers 6+ pages of new publications submitted by the members, and many pages of member submitted news, notes, and articles. I think this represents a real step forward in making sure ICAZ fulfills its mission as serving as a conduit of communication among its members.

For those of you who have joined or renewed your membership for this next cycle, I think your faith in ICAZ will be well justified. For those of you who have yet to take this step, don't delay. ICAZ is more active and exciting than ever. We'd hate for you to miss out.

Yours Sincerely,

  
Melinda A. Zeder  
President

Zeder, M.A. 1997. *The American Archaeologist: A Profile*. AltaMira Press: California. 

## Obituaries

### PIER FRANCESCO CASSOLI

These seem to be sad times not only for the world as a whole but also for our little international community. Only a few days after the terrible news of the death of Francisco Hernandez Carasquilla, we heard that Pier Francesco (“Piero”) Cassoli had also passed away on March 24, 2003. Piero was a pioneer of the study of animal bones from archaeological sites and although his approach was originally paleontological, he soon developed an interest in addressing archaeological questions, helped in this by his long collaboration with Antonio Tagliacozzo. He spent most of his career at the *Museo Nazionale Preistorico ed Etnografico Luigi Pigorini* in Rome, but also had close links with the *Istituto di Paleontologia Umana* where he curated one of the best collections of bird skeletons in the world. Piero analyzed and published faunal material from an incredible number of key prehistoric (and occasionally historical) Italian sites. Mainly known for his fantastic expertise in bird skeletal morphology, Piero was in fact extremely competent also on other classes of vertebrates. I will always remember going to Rome as a young and inexperienced researcher to ask for his help in identifying some bird bones, and when I showed him a tiny and rather shapeless bone he identified it straight away as part of the internal structure of a sheep skull! In the following fifteen years I have met no one with the same knowledge of the smallest details of bone morphology. A few years ago Piero retired and although he had decided to keep away from any bone work he inevitably ended up with more assemblages to study—unfortunately for him too many people knew of his expertise. Piero was immensely liked and respected in the research community—particularly in Italy where he worked for all of his life. This is not only because he was good at his work, but also because he loved what he did and never gave the impression of having a hidden agenda or a desire to push for a better career (which, incidentally, he would have fully deserved). I am sure that all who have had the privilege of meeting him will agree that we have lost a beloved colleague and a sincere friend. Rest in peace.

Umberto Albarella, University of Durham



### FRANCISCO HERNÁNDEZ CARRASQUILLA

On March 16, 2003, after a dreadful seven-month fight against leukemia, Francisco Hernandez Carrasquilla (“Fran”), passed away in Madrid. Born in 1964, Fran enjoyed a short but productive life for, as far as he could remember, he had always been mesmerized by birds. Birds made him a successful bird-ringer well before going to a university and birds led him into biology (he hated genetics). When the time came for his post-graduate studies, Fran had started helping me in a casual way cleaning bones, but at some point he realized that there was more to birds than just the ringing and observation that he was so familiar with. In many ways he was probably surprised to see that he was able to determine a species from the right splinter just as accurately as he could do from just hearing a few notes or seeing a silhouette in flight. Still, his background in field studies was systematically brought into his analyses of bird bones since he was unable to detach the identification of a bone from the wealth of data he had previously amassed on

that particular species. “Bones sing to me their identity!”, he once told me and I stared at him thoroughly confused. But, in fact, this was true. Fran did with ease what most of us take a lifetime to achieve, and then only in an imperfect way, namely, to proceed beyond raw data. I felt envious for that gift and I still do, but I know he will forgive my envy.

During his short, but intensively productive career, Fran managed to review a fantastic amount of archaeological bird faunas from Iberia that had been waiting for years, like *Sleeping Beauties*, for their prince to show up. One of these *Sleeping Beauties* (Cartuja) became his Master’s thesis and a second one (Cueva de Nerja) his Doctoral dissertation. In all his works—42 in all, including heavy-weight papers like the one in *Science*—Fran left his “not-just-bones” imprint so that all his studies were thorough and of high standard. I want to think that I may also have my share on this last aspect but, to tell the truth, Fran was not a man in need of much guidance. He knew his way from the start.

Fran was a joy to work with, a perfect team worker and a good friend. Some six years ago he settled down with his family and left our lab to start a “serious” life, but he neither gave up on birds (he became head of the Bird Ringing Office of the Spanish Ministry of the Environment) nor bird bones. Several *Sleeping Beauties*—Gorham’s Cave, among others—were still awaiting his kiss at the time of his untimely death. I am sure he would be happy to learn that new princes will appear to continue his work. Fran left a wife and two children (aged two and four) and lots, lots of friends. His death has been a great loss for our profession, but still larger for those of us who loved him. The best we can do now is to keep his memory fresh for those who follow. May he rest in peace. Amen.

Arturo Morales, Universidad Autónoma de Madrid



### EITAN TCHERNOV

Eitan Tchernov, our cherished mentor, colleague and friend, passed away on December 13, 2002, after a valiant and unrelenting struggle against cancer. The character traits which most readily spring to mind when thinking of Eitan are his infinite curiosity and indefatigable enthusiasm.

Eitan was born in Tel Aviv in 1935 and from an extremely early age showed a keen and active interest in natural history. So much so, that by the time he began his studies in zoology at The Hebrew University of Jerusalem, his knowledge in this field was legendary. After completing his PhD at The Hebrew University he took up an academic appointment in this institution in 1966, and attained the position of Full Professor in the Faculty of Life Sciences. In 1991 he founded the Department of Evolution, Systematics and Ecology, aimed at promoting inter-disciplinary studies in these fields, and served as its first chairman.

Eitan was an inspiring and popular lecturer and was successful in conveying to students his passion and enthusiasm for all areas of biology. The courses he taught ranged over a wide field, including palaeontology, faunal studies of the Near East, biogeography and evolution. The high point of many of these courses were field trips and the opportunity to spend a few days with Eitan outside the university and being able to benefit from his eclectic knowledge in informal discussions around the camp fire.

At The Hebrew University, Eitan created a large and well-

equipped laboratory and was successful in greatly expanding extant collections of palaeontological, archaeozoological and comparative fauna from Israel. These now comprise the most comprehensive collection of their kind for the region. The collection has attracted students and researchers from all over the world for whom the laboratory serves as a second home as well as research centre. This was largely due to Eitan's gregarious personality and generosity, and was also evidenced in his ability to maintain long term collaborations with other scientists and former students. Notable is his life-long collaboration with archaeologist Ofer Bar-Yosef, with whom he engaged in excavations of numerous prehistoric sites in Israel, such as Ubeidiya, Hayonim and Kebara Caves.

In addition to Eitan's devotion to biology, he had a deep love of cooking, gardening, literature and especially music. Consequently, conversations in the laboratory ranged across an extensive, often bewildering, spectrum of topics. In a similar fashion, Eitan's academic career was notable for its interdisciplinary nature. This is expressed in the broad spectrum covered by his research and over 150 scientific publications: microevolutionary processes in birds and mammals during the Neogene and Quaternary in the Levant; biogeographical history, biotic turnovers and extinctions in Southwestern Asia; spatial and temporal changes in the structure of faunal communities; paleoenvironmental and palaeoecological changes during the Neogene and Quaternary of the southern Levant and the ecological impacts of humans on global and regional changes in habitats; dispersal events and palaeo-distribution of hominins; biochronology and the origin of modern humans; sedentism, socialization and the processes of early domestication; management of natural reserves and conservation ethics; biological pest control, to name but a few.

Eitan was internationally known as a specialist on the Order Rodentia, and his research on micro-mammalian evolution, which began with his doctoral research on the Pleistocene rodent fauna of Israel, continued throughout his career. Seminal publications include: his doctoral dissertation (1968, Berlin: Paul Parey); a monograph on the Pleistocene birds of Ubeidiya (1980, Jerusalem: Israel Academy of Humanities and Sciences), one on East and North African crocodiles (1985, Paris: CNRS), another on the fauna from the Pre-Pottery Neolithic A site of Netiv Hagdud (1994, Harvard University: Peabody Museum); and editor of a volume on the fauna from the site of Ubeidiya (1986, Paris: Association Paleorient).


Since 1975 Eitan served as a member of the ICAZ steering committee. He served as mentor for a new generation of Israeli archaeozoologists and it is primarily due to his dedication and perseverance that this field is now a recognized area of study in this country.

Although primarily focusing on the zoology, archaeozoology and palaeontology of Israel, Eitan's research activities extended beyond its borders and included collaborations with international scholars in East Africa, America, France, Greece and other Near Eastern countries. His most recent research focused on material from the Cretaceous site of Ein Yabrud (Israel) and included collaboration with Dr. O. Rieppel and Prof. L. Jacobs (USA) in describing a snake with vestigial limbs from this site. Their findings have led to major revisions of Ophidian taxonomy and evolution.

Eitan was actively involved in the establishment and development of the Israel Nature Reserves Authority and served as its first

ranger. In later years he was a member of its scientific advisory board as well as that of the Society for the Protection of Nature. He continued to play a leading role in nature conservation in Israel serving as its representative on the UNESCO-MAB committee (Man and the Biosphere) and SCOPE (Scientific Committee on the Problems of the Environment), and since 1986 was co-editor of the Hebrew magazine *Sevivot*, dedicated to environment and environmental education.

With his passing, Eitan has left a huge hiatus in all areas that he touched upon; as a teacher, colleague and friend.


Liora Horwitz, Rivka Rabinovich, and  
the Department of Evolution, Systematics and Ecology  
The Hebrew University, Jerusalem 

*Continued from page 4- On Preparing Animal Skeletons*  
or flammable and/or carcinogenic). Move specimens through a "sequence" of jars containing increasingly clean acetone. The greasiest specimens go into Jar 1. Specimens are then moved to Jar 2, which contains cleaner acetone and thence on to Jar 3, which contains the least greasy acetone. Fish grease being rather light, tends to dissolve out quickly, so fish skeletons de-grease rapidly. Degreasing old museum specimens may take several months, as old grease seems to be harder to dissolve.

The degreased specimen is dried. Some zooarchaeologists like clean white specimens and bleach them. But chemical bleaches can damage bone and the white color may obscure surface modelling and small surface details. This can be a particular problem with small bones when viewed under the microscope. One remedy is to stain with tea—black Indian or Ceylon tea being best. Pour hot strong tea over the bones; leave them a few minutes, and then wash and dry. Staining may also be useful to distinguish certain parts of the skeleton, say left side from right.

The final process is marking up. Each skeleton in a collection needs to be labelled with an accession number. This is essential. The use of a reference collection usually entails temporarily removing certain bones to compare them with the archaeological specimens. It is all too easy to return bones to the wrong box afterwards! In many ways marking bones is the most laborious part of the process—writing on mouse bones for example can be exceedingly tedious. Use a drafting pen (such as a Rörtring), the finer ones being better for small bones. The inks for these pens have the advantage of being fairly robust and if subsequent further degreasing is needed, they are acetone resistant. Do not use felt-tip pens as the inks tend to be light-sensitive and fade and of course are dissolved in acetone. Marked up disarticulated bones may then be housed in labelled boxes.

Preparing animal skeletons, contrary to what many people imagine, is easy, quick and really not too smelly. Remember too, if you can, eat your specimens—your local fishmonger, butcher, food market, may well be a good source—but ask for birds "in the feather" or fish "uncleaned" (this way you'll have the feet of the bird and be able to sex the fish!).

Any questions? Contact: Polydora Baker (Polydora.Baker@english-heritage.org.uk), Simon Davis (sdavis@ipa.min-cultura.pt), Sebastian Payne (Sebastian.Payne@english-heritage.org.uk), or Michael Revill (Michael.Revill@english-heritage.org.uk). 

## Calendar

AUGUST 21-25, 2003

**The 3<sup>rd</sup> International Workshop on South American Camelid Zooarchaeology**, hosted by the ICAZ Grupo Zooarqueología de Camélidos, will be held in Tilcara, Argentina. Organized around the theme "The Management of South American Camelids", the meeting will emphasize current approaches used to study management practices (i.e., harvest profiles, seasonality, diet, primary and secondary product use, etc.). The first three days will be dedicated to paper presentations and the last two days for an excursion to see vicuñas and llamas and to visit some interesting archaeological sites. For details, please contact the organizers: Guillermo Mengoni Goñalons (wmengoni@yahoo.com.ar), Daniel Olivera (deolivera@movi.com.ar), and Hugo Yacobaccio (yacobaccio@aol.com).

AUGUST 26-31, 2003

**The 4<sup>th</sup> ICAZ Worked Bone Research Group Meeting** will be held at the Institute of History in Tallinn, Estonia. Scientific sessions will be held over three days, plus a one day excursion. Papers from archaeozoologists and archaeologists, prehistorians and proto-historians, are invited on all topics connected with boneworking, including the procurement and use of raw materials, manufacturing techniques, methodologies for studying manufacture and use wear, problems of studying materials, and reports on specific assemblages. For more information, contact: Heidi Luik (Heidi.Luik@mail.ee), Institute of History, Rütli 6, EE-10130 Tallinn, ESTONIA.

SEPTEMBER 26-28, 2003

**The conference "Pigs and Humans: The Archaeology and History of the Pig"** will be held at the University of Durham, UK. The programme calls on archaeological, historical, biomolecular, and ethnographic evidence to highlight the contribution made by the pig in the development of complex human society. A broad range of temporal and geographical themes will be covered. For info, e-mail pig.project@durham.ac.uk.

SEPTEMBER 4-12 2003

**The 12<sup>th</sup> ICAZ Fish Remains Working Group Conference** will be held at the Museo de Paleontología in Guadalajara, Jalisco, México. Contributions, including both pa-

pers and posters, are invited on the different aspects of archaeoichthyology. We expect to devote at least four days to presentations and discussions in order to avoid parallel sessions. The conference will be held from the 4<sup>th</sup>-8<sup>th</sup> with a field trip planned from the 9<sup>th</sup>-12<sup>th</sup>. For more information, contact: Ana Fabiola Guzmán, Laboratorio de Arqueozoología, Subdirección de Laboratorios y Apoyo Académico, Instituto Nacional de Antropología e Historia, México 06060 D.F. MÉXICO, Tel: 00 52 55-55224162, E-mail: fguzman@ipn.mx.

SEPTEMBER 4-12 2003

**The next ICAZ Executive Committee Meeting** will be held in conjunction with the Fish Remains Working Group conference in Guadalajara, Jalisco, México. For more information, contact: Melinda Zeder (zeder.melinda@nmnh.si.edu).

NOVEMBER 26-28, 2003

**The Colloquium "Les Equides en Méditerranée orientale, de l'âge du Bronze à la fin de L'Époque Impériale"** will be held at the French School in Athens, Greece. For more information, contact: Armelle Gardeisen (armelle@cnsr-mop.fr) or Antoine Hermary (hermary@mms.h.univ-aix.fr).

### UPCOMING MEETINGS IN 2004

MAY 2004

**The next ICAZ International Council Meeting** will be held in Copenhagen, Denmark. Exact dates to be decided. For additional information, contact: Nanna Noe-Nygaard (nannan@geo.geol.ku.dk).

JULY 25-28, 2004

**The 5<sup>th</sup> Meeting of the ICAZ Bird Working Group**, hosted by Institute of Palaeoanatomy and the Bavarian State Collection of Anthropology and Palaeoanatomy, will be held in München, Germany. For details, contact:

### ICAZ Executive Committee Members and ICAZ Officers


President: Melinda A. Zeder, USA (zeder.melinda@nmnh.si.edu)  
Vice-President: László Bartosiewicz, Hungary (h10459bar@ella.hu)  
Secretary: Arturo Morales-Muñiz, Spain (arturo.morales@uam.es)  
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Bird Working Group Meeting, Institut fuer Palaeoanatomie und Geschichte der Tiermedizin, Tierärztliche Fakultät, Kaulbachstrasse 37, D-80539 Muenchen GERMANY, Tel: +49(0)89-2180-5710, E-mail: rena.te.brunner@palaeo.vetmed.uni-muenchen.de.

SEPTEMBER 23-24, 2004

**The ICAZ Animal Palaeopathology Working Group Conference** will be held at Slovak Agricultural University in Nitra, Slovakia. The conference will bring together both advanced scholars and novices interested in animal palaeopathology and provide a forum for the interchange of related knowledge. The scientific program will include: lectures on the normal anatomy, histology and physiology of the animal skeletal system followed by lectures focused on pathological alterations of bones on both microscopic and macroscopic levels. In addition, oral and poster presentations will present current palaeopathology research projects. The meeting will end with a discussion session. For more information, send an e-mail to apwg@supanet.com.

OCTOBER 6-9, 2004

**The 10<sup>th</sup> International Conference on Human-Animal Interactions**, entitled "People and Animals: A Timeless Relationship", will be held in Glasgow, Scotland. Details available at [www.glasgow2004ad.com](http://www.glasgow2004ad.com). 

### ICAZ NEWSLETTER SUBMISSIONS

To announce an upcoming meeting or event in the ICAZ Newsletter, send submission to Newsletter Editor Heather Lapham (hlapham@siu.edu). Submission DEADLINES for the biannual ICAZ Newsletter are April 15 (Spring) and October 15 (Fall).