South American Archaeology Seminar: London

13th May 2017

6th Floor Seminar Room
Institute of Archaeology, UCL
34 Gordon Square,
London WC1H 0PY

Co. Sponsors:

Shell case from 1928 depicting a Paraguayan soldier hunting a jaguar in the Chaco

10.00 am  Coffee/ Registration

10.30 am. Priscilla Ulguim (Teesside University) Food, tools and friends: Human-environmental interactions through zooarchaeology at Cerrito da Sotêia, Lagoa dos Patos, Brazil

11.10:  J. Marla Toyne (University of Central Florida) The Menu in the Mountains: Exploring Pre-Columbian Chachapoya Diet using Stable Isotopes at Kuelap, Peru

11.50: Magdalena Setlak (Universidad Complutense de Madrid) Images, texts and mnemonic devices among the Incas.

Lunch

1.30: Anna Kubicka (Wroclaw University of Science and Technology) Statistical approach to the analysis of Inca architecture – in a search for Inca measurement system

2.10: Jacek Kosciuk and Bartłomiej Cmielewski (Wroclaw University of Science and Technology) Preliminary results of interdisciplinary researches on El Fuerte de Samaipata

2.50: Stella Nair (University of California, Los Angeles) Empire and Stones: Looking at Inca Architecture from the Roman Forum

Tea

4.00: María Teresa Plaza (UCL Institute of Archaeology) Technology, use and reuse of gold in San Pedro de Atacama, northern Chile: The case of Casa Parroquial

4.40: Esther Breithoff (UCL, Institute of Archaeology) The Material Remains of the Chaco War or the Archaeology of a “Guerra Estúpida”

You will be asked to make a contribution of £10.00 towards the cost of coffee, tea & lunch

Our next meeting will be on: Saturday 2nd December 2017

If you would like to give a talk at a future seminar or for further information please contact Bill Sillar: b.sillar@ucl.ac.uk
**South American Archaeology Seminar: London**

**ABSTRACTS:**

### Food, tools and friends: Understanding human-environmental interactions through zooarchaeology at Cerrito da Sotéia, Lagoa dos Patos, Brazil

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Faunal remains are an important source of evidence for the understanding of past human-environmental interactions. They provide insights into environmental trends, resilience and can characterise past social and symbolic relationships with animals. Along the Atlantic coast of southern Brazil, Uruguay and Argentina zooarchaeological studies at different types of sites focused on economy, mobility, and later on ritual and long-term resilience. Among those sites are the cerritos, or earthen mounds, which frequently occur at the intersection of lacustrine or marine environments in the south. However, for those sites zooarchaeological studies have more often emphasised economic interpretations.

This analysis of 70,000 faunal fragments from Cerrito da Sotéia (PT-02), near Lagoa dos Patos applies biomass and size estimation regression formulae, and XRF analysis to explore taphonomy, themes of environmental resilience and symbolism within cerritos, and interpret past lifeways of the occupants.

Results reveal activity from c. 1000 BP until the contact period; abundant fish remains; a bone tool industry using mammal metapodia; and a *Tursiopis truncatus* tooth pendant. Fishing was likely carried out in the lagoon, and size estimation indicates that at least one capture method may have involved nets. The most abundant species, *Micropogonias furnieri* are still common within the lagoon today, indicating their persistence and resilience over 1000 years. However, other important modern species such as prawns were not evident, but this may result from equifinality rather than choice or past species distribution. Taphonomic evidence for charring and carbonisation indicates heat exposure, and XRF analysis of fish otoliths indicates some attained levels of iron higher than other otoliths. These may be related to culinary activities among other taphonomic processes. Finally, the *Tursiopis truncatus* tooth pendant, and similar artefacts at other sites, appear to indicate a different sphere of relationship with animal species.

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### The Menu in the Mountains: Exploring Pre-Columbian Chachapoya Diet using Stable Isotopes at Kuelap, Peru

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In the high altitude subtropical environment of the Chachapoyas region, archaeological remains identify a range of plant and animal resources grown at distinct elevations, including high altitude C₃ tubers and lower temperate zone C₄ maize. This research examines evidence of dietary patterns of a skeletal sample from Kuelap representing significant mortuary variability from the Late Intermediate
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Period (AD 800-1470) and Late Horizon (Inca Conquest AD 1470-1535). Results of isotope analyses of bone and teeth suggest the diet of this late pre-Columbian population was fairly narrow, mixed ($C_3/C_4$), with limited terrestrial-based protein. Bone oxygen values also show limited variation and are consistent with predicted local water values. There are no significant differences between males and females, or adults and juveniles in any of the data, nor among collective wall burials, individual pits, or an unburied group of individuals. Only a single female had a significant shift in isotope values to suggest that she moved to Kuelap after childhood. These isotopic data suggest that the diversity in mortuary practices at Kuelap reflects a more complex local social organization than expected and there is no clear evidence for any dramatic change after Inca domination of the region.

Images, texts and mnemonic devices among the Incas

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The paper will seek to address questions about functions and importance of texts, images and mnemonic devices for the process of transmitting information and conveying meanings. Although the role of text, recited or sung during festivities and ceremonies, was set aside by the conquerors and chroniclers, it was used by the Incas to communicate beliefs, histories and genealogies. On the other hand, was the oral tradition the only way to transfer knowledge and acquire wisdom among the inhabitants of Tahuantinsuyo? The Incas used not only texts, but also images and mnemonic techniques to convey messages and information. Images painted on wooden boards, woven images, tocapus and khipus, as well as images constructed throughout ceremonies, coexisted with text and expressed meanings understood by the Andeans. Therefore, can text, image and mnemotechnics from the Andes be seen and investigated separately?

Preliminary results of interdisciplinary researches on El Fuerte de Samaipata

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Samaipata or, to be more precise, “Fuerte de Samaipata” is a pre-Spanish archaeological site. It consists of two parts:

A natural rock with approximate dimensions of 250 by 60 metres, covered with a complex arrangement of petroglyphs depicting animals, geometrical forms, canals and water reservoirs as well as niches or entire rooms.

An architectural complex, which is located to the south of the rock, and used to serve as an Inca administrative-ceremonial centre. It consists of around 50 buildings typical for the Inca provincial architecture, including the so-called kancha and 78 meters long kallanka (Meyers, 1993,1998, 1999, 2005).

Despite this strong dominance of the Inca character, the site is multicultural and its origins most probably date back to around 300 AD, when people began to carve in the above-mentioned natural rock. Its current appearance is then a result of at least 1200 years of activities carried out by varied
cultures developing in that area. It is quite certain that the rock served as wak’a, a sacred place, and its prestige among the local people was definitely one of the main – although by no means the only – reason why the Inca chose that spot for their administrative-ceremonial centre once these lands had been incorporated into the Tawantinsuyu (the Inca Empire) in the second half of the 15th century. Due to both its artistic and historical value, the site was entered into the UNESCO World Heritage list in 1998.

The site drew attention already in the Colonial period. A missionary named Diego de Alcaya stated at the end of the 16th century that it had been an important Inca administrative centre, and at the same time a fortress intended to protect the borderlands of the Empire from the assaults of the aggressive Chiriguanos from the Chaco area (Nordenskjold, 1923; Meyers, 1993:48). The defensive value of the location caused the Spanish administration to commission building a fort, which is where the current name of the site stems from. The defensive function became insignificant at the end of the 18th century and once the hamlet Samaipata was settled approximately 9 km from the “Fuerte”. The visit of a French naturalist, Alcide d’Orbigny in 1832 was another important event in the history of research of Samaipata. It was him, who made the first, sketchy as it was, diagram of the rock and the images that covered it (Ponce Sangines, 2002).

However, the real turning point came at the beginning of the 20th century with the works of a Swedish scholar Erland Nordenskjold (Nordenskjold, 1923), and an Austrian immigrant to Bolivia, Leo Pucher (Pucher 1945). A lot of credit for the better understanding of Samaipata goes to German scientists affiliated with a research centre in Bonn (Abteilung für Altamerikanistik Universitaet Bonn) as well as KAAK (Kommission für Archäologie Außereuropäischer Kulturen), which was subordinate to DAInst (Deutsches Archäologisches Institut). The most important achievements include the study on the Samaipata pictures by Herman Trimborn (Trimborn, 1967) and then the research – commenced in 1992 and continued until 2001 – of Proyecto de Investigaciones Arqueológicas de Samaipata (PIAS), managed by Albert Meyers. Ph.D., from the Bonn University. It was the research of this project that led to revealing of the Inca administrative-ceremonial centre.

The main aims of our project can be summarized as follows:

A detailed documentation of the whole complex using modern surveying techniques to record the current state of preservation, which is of a crucial importance due to a rapid degradation of the site.

The analysis of range and speed of degradation (erosion) of the site and preparation of a risk map which will allow us to designate areas for immediate conservation intervention.

Iconographic analysis of preserved petroglyphs which is becoming more and more difficult due to constant erosion (some presentations known previously, e.g. “an ostrich”, are presently completely unrecognisable).

To settle the relative chronology of particular elements/objects of the site – a research problem incredibly essential because of analogous reasons.

Since the project is scheduled for three years and we are just in the middle of it, we will concentrate on first two aims only.

Basic bibliography

Nordenskjöld, Erland

Meyers, Albert
During expansion of the empire from about 1430 to the Spanish conquest in 1532, the Inca created infrastructure as well as small and large settlements to launch a massive construction program which marks their presence across the Andean region. Inca housing design utilized a basic single-room structure. Based on older central Andean building tradition this form was used to create a diversity of settlement types across the Inca domain. They created variations in overall form by making small but important changes to facilitate different functions [1]. All of these facts makes Inca architecture appear highly standardized. Information about Inca units of measurement are quite abundant and Inca architecture, town planning and engineering must have required a system of measurement at least as exact as that in use in ancient Mediterranean cultures. However we lack a good understanding of how systematised Inca measurement systems were. Some ideas about Inca mathematics abilities have been revealed through researching into Inca *quipu*. Arithmetic concepts used by the Incas must have included at a minimum: addition, division into equal parts, division into simple unequal fractional parts, multiplication of integers by integers and fractions [2]. The current research aims to assess and verify various hypothesis on the functioning of the imperial system of length measurement, which were used by the Incas during measurement and construction process of the architectural complex at Machu Picchu. Confirmation of this hypothesis will attest to the fact that architectural investment, generally associated with the Inca Pachacuti, were constructed based on measuring system imposed and supervised by imperial engineers. At the same time equally interesting is a falsification of this hypothesis, where particular groups of periodically working (*mitayoq*) brought with them not only the local tradition of a stonework but also local measurement systems. Differences in stonemasonry were identified by Adine Gavazzi and they can suggest such a distinction. However at this stage of research is not clear if the reason is due to groups of workers having distinct traditions of measuring or a way of marking differences in the function and prestige of the building. The research implements the use of

Statistical approach to the analysis of Inca architecture: in a search for Inca measurement system.

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statistical methods such as the cosine quantogram and Monte Carlo simulation to analyses the architecture of Machu Picchu, based on measurements collected by 3D lesser scanner. As far as the research method is concerned, a statistical model of cosine quantogram was successfully employed during the analysis of architectural sites of Mediterranean culture as well as European medieval urbanism [4] but it has not yet been applied extensively to pre-Columbian archaeology. The search for a basic unit of measure in this particular site has some difficulties especially concerning the level of foundation and walls erection system. For this reason, three potential models are created and will be further discussed.


Empire and Stones: 
Looking at Inca Architecture from the Roman Forum

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Rome was the lens through which the Spanish saw the Inca Empire. As the eminent historian Sabine MacCormack has described in her book On the Wings of Time: Rome, the Incas, Spain and Peru, Roman history, religion, and politics became the models with which the Spanish understood the Incas and their vast lands. In particular, Roman architecture and urban planning was used by the Iberians to describe the Inca built environment. In this paper, Nair will consider how the perceived relationship between Ancient Roman and Inca architecture (design, construction, patronage, etc) became the foundation of Inca architectural history and has continued to influence how we have come to consider Inca architecture (and Inca settlements) today.

Technology, use and reuse of gold in San Pedro de Atacama, northern Chile: The case of Casa Parroquial

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The Middle Horizon (AD 400-900) in the South Central Andes is characterised by dynamic interaction between different areas, using long distance exchange routes that connected the Bolivian highlands, southern Puna, northwest Argentina and the valleys of the pacific coast. In this picture, San Pedro de Atacama appears as strategic node where many of these routes linked, becoming an important political, religious and economic centre. During this period large quantities of foreign items and exotic raw materials appear in the cemeteries of San Pedro; and amongst them a series of gold and silver grave goods. The quantity of these items, nearly 200 (2.5kg), all concentrated in one locality is striking
for the Middle Horizon. In general, gold findings are not very common in the South Central Andes; and when they are found, they are usually grave goods or offerings associated to specific individuals. Therefore, the presence of several cemeteries in San Pedro with a number of individuals bearing gold (and silver) offerings is very special and different from contemporary contexts. Nevertheless, there has been no previous attempt to investigate the technical characteristics of this assemblage, its use and the role of precious metals in San Pedro.

In my research I am studying the gold and silver technology and their use in San Pedro de Atacama, during the Middle Horizon; and here I would like to present some preliminary results from a specific cemetery, Casa Parroquial. The analyses -including pXRF, SEM-EDS, PIXE and the recording of manufacture traits- suggest that objects deposited in San Pedro were made of natural gold, as well as by artificial gold-silver alloys. Two technological groups were identified, both containing objects that were most probably imported from the Bolivian altiplano and northwest Argentina. Furthermore, within both groups there are reused and modified objects, which point out to a local tradition that is re-shaping imported objects according to their needs and tastes. The characteristics of this work however, -using simple mechanical means such as punching, cutting and folding- suggest that the figure of the goldsmith (or silversmith) was not necessary. The distribution of the gold offerings also shows interesting patterns, where most people bearing gold, have 1 or 2 artefacts, whereas two burials (a man and two newborns) concentrated most of the offerings. These patterns would support the idea of the development of social classes and inheritable wealth in San Pedro for the period.

**The Material Remains of the Chaco War or the Archaeology of a “Guerra Estúpida”**

**Esther Breithoff**  
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The Chaco War (1932-35) between Paraguay and Bolivia has been called the bloodiest, most obscure and futile armed conflict in 20th century South America. This talk is going to present an overview of the material remains of Paraguay’s violent past and look at the limitations and accomplishments of doing research in a remote and inhospitable landscape shaped by indigenous, Mennonite and military worldviews.

To those unfamiliar with the Chaco landscape, the latter can easily become a death trap. During an armed conflict that claimed more deaths through dehydration than enemy bullets, knowing the disputed territory was key to survival. With a special focus on water and the experience of thirst, this paper is going to look at people’s engagement with the Chaco bush and the resulting material culture, and show how different understandings of a place can turn into a matter of life and death.

In a second part, this paper is going to look at the military fortines (outposts) that survive in the Chaco today. Using Fortín Nanawa as a case study, it is hoping to give an insight not only into the physical remains of the war but also into the environmental, logistical and personal challenges encountered when trying to do an archaeology of and in the Chaco.