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Keynote lecture:

Jean-François Jarrige

Indus-Oxus Civilisations: More Thoughts

Some thirty years ago excavations in the north-west of Afghanistan, in Tadjikistan and Uzbekistan (Bactria) and later on in Turkmenistan (Margiana) revealed the existence of a so far unknown extensive original cultural complex whose climax could be dated around 2100/1900 BC. Since then excavations of major sites such as Gonur, Togolok or Sappali Tepe have contributed to show the obvious economical dynamism and the great wealth what has been termed by some specialists as the Bactria-Margiana Archaeological Complex (BMAC) or by others as the Oxus civilisation. So, some of the few “exotic” objects found at several sites of the Indus civilisation, could be then related to this “Oxus” civilisation and no longer to rather poorly known invaders in the context of what was assumed to be the collapsing process of the Indus cities.

The discovery of a graveyard combining cenotaphs and individual graves in the area MR.8 in the archaeological zone of Mehrgarh (Period VIII), in the Bolan basin, in Balochistan, has shown that series of finds from sites of the Indus civilisation displaying similarities with the “Oxus” assemblage were not the result of sporadic contacts between groups of a far-away origin and the Indus cities. Such finds can now be connected with the settling on the western margins of the Indus valley of groups whose cultural assemblages were directly connected with sites of Bactria or Margiana. Some of the graves from Mehi discovered long ago by Sir Aurel Stein, in the context of the late phase of the Kulli culture, can now be interpreted as a further proof of the wide range of the settling of such groups of people inside Balochistan and on the western margins of the Indus valley.

But several questions have to be solved. What such group did represent in relation with what could be considered as the climax of the “Oxus” civilisation, as it is evidenced at the time of the “royal” necropolis of Gonur? When exactly such groups did settle along the western borders of the Indus valley and what could be their precise chronological situation in relation with the internal sequence of the Indus civilisation? In some of our previous contributions we have pointed out several elements suggesting a peaceful coexistence in the Kachi-Bolan area and in the Kulli culture area between these groups of people and the local population belonging to the last major phase of the Indus civilisation or the last phase of the Kulli Culture. In the last “Indus” occupation of Nausharo (Period IV), several pots and objects of Oxus types have been found in a still classical Harappan assemblage and a few “Harappan” artefacts have been recorded in the cemetery of the MR.8 (Mehrgarh, Period VIII) or at Sibri. But another question can be raised concerning the nature of such groups showing strong connection with the Oxus cultural complexes. Can we assume that they were just marginal groups who settled more or less permanently far away from the core of what can be defined today as the Oxus civilisation and of its very wealthy elite groups with their palaces and necropolis full of prestige goods? Or can we consider them as full-fledged members of this great cultural entity between Mesopotamia and the Indus valley, playing probably an active part in the exchange networks between Middle, Central and South Asia?

In order to answer such questions, it is worth pointing out again the great significance of the chance discovery of what has been improperly called the “Quetta treasure”, during the construction work of a swimming pool of the Serena Hotel. It is important to insist once more on the fact that such a find has nothing to do with a treasure hidden by some nomadic people. Such finds come from a limited space within what must have been a full graveyard. At about 3 m from a skeleton surrounded by ceramics of the Oxus types, an exceptionally rich deposit was found probably associated with an other skeleton who was not been recorded or was even more probably still inside the section dug by the workmen. This deposit included several stone shafts, miniature columns, stone grooved disks, a composite woman statuette in black steatite, a bronze burner, several alabaster vessels, many outstanding objects in gold and sets of ivory pieces. The wealth of these grave-goods, found within a limited space, is even more remarkable if we keep into account that, according to some local informants, many objects were taken away by the workmen before the local authorities could intervene. It appears therefore that the some of the Quetta graves were as rich as some of the graves of the “royal necropolis” of Gonur. As regard the cemetery of MR.8 at Mehrgarh, the graves have obviously been plundered but in one of the plundered cenotaphs a stone shaft was found and a few pendants in gold have obviously escaped from the looting. This indicates that the people who settled in the highlands of the Quetta plateau dominating the Indus valley or at the western border of the Indus valley itself at Mehrgarh and in the neighbouring area were not simple immigrants. It is indeed evident that among them some individuals were buried with the distinctive grave-goods usually associated with the elite of the Oxus civilisation. One can even imagine how the archaeological history of

Balochistan and of the Indus valley would have been to a large extent different if, when Stuart Piggott exposed some potsherds in the “Quetta” style in the Miri of Quetta, he could have extended his archaeological investigation further east where the Serena Hotel stands today. At a time when no construction work and plundering would have prevented an archaeological investigation, he would have probably exposed not one or two graves but a complete cemetery with surely some other deposits as rich as the so-called “Quetta treasure”. The entire conception of what we called the Oxus civilisation or the BMAC would surely have been affected as well as the models used to study the last main period of the Indus civilisation. The fact that only a limited number of artefacts clearly associated with the Oxus civilisation are found in the Indus cities and the fact that in the sites and graveyards associated with the Oxus material, for instance in the cemetery of Mehrgarh area 8, at Sibri or at Dauda Damb, Indus artefacts are found in limited number does not mean that the two major cultural entities have not very actively interacted. This paper will be a further opportunity to raise this last point.

P. Ajithprasad & Marco Madella

The Early Harappan Encounters and Chalcolithic Developments in Gujarat

Recent studies have firmly established the spread of Early Harappan cultural development from the Indus valley into Gujarat. One of the Key sites for understanding the dynamics of the cultural transactions in this context is Datrana in North Gujarat. Excavations in the 1990’s and recently in 2010 at the site have revealed evidence of Early Harappan encounter with the Pr-Prabhas as well as contemporary Mesolithic hunter-gatherers. This is reflected in the spread of crusted ridge technique in blade production and innovative new technique in the production of small carnelian disc beads. The technology followed in the bead production appears to be a unique adaptation of the blade technique; probably an extension of it. The issue however is was that an independently arrived technological innovation or an adaptation of the Harappan stone bead technology? This is an issue that can be resolved only by looking at the finer aspects of the technology and its spread in Gujarat Chalcolithic and contemporary hunter-gatherer sites. Technology is often regarded, and rightly so, as the linking if not the unifying factor between diverse cultural economies. Cultural traditions however are more exclusive in nature and to some extent contradictory to the forces of technological spread. Trajectory of technological spread therefore reflects the dialectics between these two competing forces through time. The paper examines the significance of Early Harappan encounter with the early Chalcolithic and Hunter-gatherers in the dissemination of technology and its impact in the development of Chalcolithic farming way of life in Gujarat.

Marta Ameri

Approaches to Mythological and Narrative Imagery in the Harappan World.

The iconography of the Harappan world, particularly as seen in the seals, sealings, and molded tablets, includes a number of mythological characters and narrative scenes that have to date defied interpretation. Past attempts to deal with this material have tried to relate the imagery to contemporary Western Asian iconography or to later Hindu mythology with little success. This paper attempts to deal with the mythological and narrative iconography of the Harappan world on its own terms. Using models provided by recent scholarship on fantastic and mythological creatures in antiquity, this paper first defines the cast of characters found in Harappan iconography and then proceeds to examine the scenes in which they interact with each other or with the inhabitants of the “known” world. While many of these scenes have little meaning on their own, taken together they may provide a narrative that will give us greater insight into the mythology of the Harappan world.

Numan Anwar

Swabi Region Archaeology: Drafting A Management Plan

Swabi district is located at the heart of ancient Gandhara region. this place had played a major role in shaping the cultural history of South Asia. Alexander the great crossed river Indus (326 BC) from Hund, near Swabi and also Swabi remained the third capital of Gandhara during Hindu Shahi dynasty (around 8th C. AD). Recent floods in Khyber Pakhtunkhwa, followed by rapid growth of rehabilitation process of local community, the archaeological heritage of this region are endangered.

My Mphil research is focusing on drafting a proper management plan for the archeological heritage of Swabi, for the sustainable tourism in the region. I will discuss measures for protection, preservation and promotional plan for archaeological sites.

Robert Arnott

Crossing Continents: Relations between the Aegean and India in Prehistory

It is believed that the first contacts between the Aegean with India started at the beginning of the sixth century BC. This is when Greek merchants, explorers and adventurers travelled along the trade routes that linked Ionia in Western Anatolia with the Persian Achaemenid Empire and eventually India, establishing themselves both in the mountains to the north of the Punjab and then further south in that part of the rich northern Indian plain from where flowed the River Indus and its tributaries.

Starting in the Early Bronze Age, objects for trade or exchange were continually on the move within as the late Gregory Possehl put it: "...an interregional pattern of third millennium urbanisation that encompasses the Nile valley and the lands from the Mediterranean Sea, east across the Iranian Plateau to the Greater Indus Region." Within this framework, there is now evidence of early but indirect contacts, between the Harappan Civilisation and pre-palatial societies in the Aegean and of a continuation of these contacts between the Late Harappan and local Chalcolithic cultures that emerged in India in the second millennium BC and the Minoan and Mycenaean worlds. The Aegean certainly enjoyed a foretaste of Indian goods that were used for body ornamentation and as an expression of wealth and status and commodities such as spices and lapis lazuli.

This paper examines this evidence, but stresses that it does not testify to direct cultural and trade links and geographical knowledge between the Harappans and the prehistoric Aegean. No goods arrived directly from India; they accumulated value as they first built up a distinguished pedigree of ownership in the Near East. Therefore it was unlikely to have been a fully two-way trade for the exchange of objects and commodities. In many ways it was just the natural extension of trade between the Near East and India.

Hans Bakker

Kālāñjara (Kalinjar)

Kalinjar is the name of a famous hill-fort and ancient archaeological site in the Vindhyas of Bundelkhand. The first attestation of this site is on two seals in northern Gupta characters found in Bhānū (near Allahabad), both reading *kālāñjara*, one containing a *li'ga* on a pedestal and a representation of the hill and a trident-axe, the other a *li'ga* with umbrella and *trīsūla*. These seals prove that the place had been associated to Saivism from Gupta times. This is confirmed by literary evidence of the period, the *Mahābhārata*, and the *Vāyupurāṇa*, which mentions the site as the place of Śiva's 23rd *avatāra* *veta*.

My interest in Kālāñjara was raised by our study of the original *Skandapurāṇa* (SP), in which the place plays a prominent role in the myth of Śiva's crushing of Yama in order to save his devotee *veta* from death (SP 166). This connects the site with early forms of Pūsupata Saivism. Epigraphical evidence further enhances our knowledge. The site contains an unedited rock inscription near the Gaṇeśa Gate, in which the (legendary) Pūsupata king Udayana is called as the one who in the past had founded the 'beautiful brick temple Bhadreśvara.' Udayana had, by the time of the inscription, become connected with Kālāñjara, where he and his two wives had committed suicide by jumping of the rock after worshipping Viṣṇuvajra. The Barah Copper-plate Inscription (AD 836) tells us that the Pratihāra king Bhoja I of Kanauj informs the residents of the Kālāñjara *maṇḍala* that he reinforces an *agrahāra* grant that originally had been made by the Parameśvara *Pravarmadeva*, who might refer to the sixth century Maukhari king of Kanauj. From all this it becomes evident that Kālāñjara was an important place associated with Śiva in the 6th century AD, the time to which we date the composition of the original *Skandapurāṇa*.

Preliminary survey reports confirm that the hill-fort is very rich in archaeological remains. It is all the more surprising that no comprehensive study of this site has been made so far. The international team that is working on the edition of the mentioned *Skandapurāṇa* has decided therefore to visit the site in January 2012.

My paper on the EASSAA conference will report on our findings.

Andrea Luca Balbo, Bernardo Rondelli, Carla Lancelotti, Marco Madella, Francesc Cecilia, Ajithprasad P, Girolamo Fiorentino

Reconstructing environment and climate of North Gujarat during the Holocene: an integrated approach

Within the framework of NoGAP (Northern Gujarat Archaeological Project), satellite imagery is combined with geoarchaeological, archaeobotanical and isotopic investigation to reconstruct past environment and climate in North Gujarat. NoGAP aims at understanding socio-ecological dynamics and domestication processes in this semiarid region of NW India where minor changes in monsoon patterns greatly affect seasonal precipitation, soil moisture and ultimately human settlement. Our understanding of the social dynamics characterizing the communities that inhabited this area during the Holocene and their interaction depends greatly on our appreciation of the environment in which they lived. To this end we need to gather long-term information on the distribution and availability of resources.

We use geoarchaeology and remote sensing combined with geoarchaeology and archaeo- and palaeobotany as fundamental tools to support landscape investigations and modelling and to build a GIS of the area that highlights the main landforms, the vegetation structure and their relationship to the regional archaeology. Archaeobotany also gives us the possibility to reconstruct resource exploitation and use. Isotopic studies of modern and past $\Delta^{13}\text{C}$ signature in plants help us reconstructing precipitation patterns in the past. The present work shows how the integration of these data can improve our understanding of settlement location in relation to past climatic and environmental change and to highlight anthropogenic landmarks and potential areas for the recovery of regional palaeoenvironmental records.

Our final aim is to inform original models explaining the landscape of NW India as the result of the long-term co-evolution between human occupation and environmental change.

Chandreyi Basu

The Inscribed Saraswatī and other Squatting Goddesses from Early Mathura

The inscribed and dated image of Saraswatī from Kushan Mathura is well-known as the earliest surviving visual representation of a goddess whose origins can be traced to the Vedic texts and who became prominent in later Jainism and Hinduism. The long votive inscription spread over the front of the goddess's stool and the image's base has shaped discussions of this headless image for it clearly names the goddess as well as the image's lay donor and the Jain preacher at whose request the donation was made. We are also told about this preacher's affiliation with a particular Jain ascetic branch that, as far as we can tell from the prolific inscriptional records from the region, enjoyed a significant presence among image worshipping groups in Mathura. Visually, two features reinforce the documentary information provided in the inscription: the manuscript held in the goddess's left hand confirms that this is Saraswatī as a goddess of learning and the small figure of a Jain ascetic to her right further establishes the Jain affiliation of this Saraswatī image. All of these features make this image quite unique for the time period and region.

A less discussed feature of this image, however, is her prominent – yet common – squatting pose. Seated on her haunches with feet wide apart and knees splayed outwards, this Jain figure relates closely to a variety of other (lesser known or understood) squatting female deities, whose images were commonly produced and used in Kushan Mathura. My paper examines this relationship more closely and seeks to understand the importance of this shared iconography. The figures and plaques of these squatting goddesses aren't as elaborately inscribed as the Jain Saraswatī image but their wide distribution and great variety illustrate their importance. The Jain Saraswatī, on the other hand, is well documented yet seems to be one-of-a-kind. My central question is: In what ways can the Jain inscribed image help us understand the role of squatting goddesses in Mathura and vice versa? My paper combines visual analysis with information from texts and I focus equally on iconography and social context.

Jennifer Bates

Indus rural archaeobotany: exploring food production at Indus village sites in Haryana through macrobotanical and phytolith analysis.

It is becoming increasingly clear that the Indus Civilisation encompassed a wide range of local environmental conditions, vegetation types and hydrological systems. However, our understanding of Indus

agricultural systems may have been oversimplified as our knowledge of these systems has come largely from detailed studies at a relatively small number of sites. This paper presents macrobotanical and phytolith analysis from two rural village sites excavated by the *Land, Water, Settlement Project* in the most north-easterly zone of the Indus region. A wide range of economic species were identified, with a predominance of cereals, a range of pulses, and some oilseeds. The presence of *kharif* species in the macrobotanical and phytolith remains, including evidence for rice and millet cultivation, suggests that multi-cropping strategies were practiced in the Early and Mature Harappan periods. Different patterns in assemblage composition over the period of urbanisation were also noted at the two sites, suggesting that not all rural villages were affected by urbanisation in the same way, even within the same hinterlands. The results of these studies suggest that Indus agricultural systems may have been far more complex and variable than previously considered, with different regional plant assemblages being utilised dependant on a number of factors, including environmental and social considerations.

Andrew M. Bauer

Iron Age Settlement and Land Use in Southern India: Recent Survey Evidence from Koppal District, Karnataka

This paper reports the results of systematic pedestrian survey of an 80km² area in Koppal District, Karnataka. The survey was designed to characterize prehistoric land use and settlement on the north side of the Tungabhadra River in the dry residual hills between the megalithic site of Hire Benakal and the large Iron Age settlement of Kadabakele, previously documented by the earlier VMS project. Systemic survey recorded 111 prehistoric sites in the area, including 12 settlements, some more than 20 hectares in extent, and numerous ephemerally occupied rockshelters and hill-slope terraces, as well as other landscape modifications. Taken together, the distribution of archaeological materials indicates a growth in the numbers, sizes, and spatial divisions within places of concentrated and sustained settlement toward the end of the Neolithic Period and the beginning of the Iron Age. Inhabitants of the region during the Iron Age also created small, dispersed, ephemerally occupied places probably associated with grazing animals away from sustained settlements, as well as a variety of other land use features (e.g., erosion control walls, check dams, rock pools). These results significantly contribute to knowledge of prehistoric settlement patterns and their associated systems of agropastoral land use that comprised the broader landscape of cultural practices in prehistoric South India.

Kurt Behrendt

Evidence for the late 5th and 6th century diffusion of Gandharan forms

This paper will examine material evidence of contact between Gandhara and surrounding regions focusing on the period that begins with the Hun incursions into northern Pakistan and considering material produced till the early 7th century. Strong evidence exists to link the Buddhist communities of Gandhara with those on the Deccan plateau in west India; this takes the form of shared iconography, and architectural features. A similar diffusion of Gandharan imagery is observed to a lesser degree in the Ganges River basin. Perhaps less surprising, is the presence of Gandharan forms in regions like Kashmir, Afghanistan and Western Central Asia as all these areas had a long history of interaction facilitated through trade. After briefly surveying the physical evidence and considering its geographic distribution my paper concludes by asking two questions. Can this punctuated late 5th and 6th century diffusion of Gandharan forms be a result of the disruption that was a result of Hun invasion(s). In other words did the widespread decline of the Buddhist centers in Gandhara result in a movement of monks? Related is the more significant question: to what extent did Gandharan Buddhist ideology spread at this time?

Bérénice Bellina-Pryce

The inception of South and Southeast Asian economic and cultural integration from the mid-first millennium BC

This paper summarises data from recent excavation and survey carried out by a French-Thai Archaeological programme that unravelled the existence of complex maritime-oriented polities from the mid-first millennium BC in the Upper part of the Thai-Malay peninsula allowing raising new issues on the timing and the nature of early exchange between South and Southeast Asia.

Khao Sam Kaeo, on the east coast of the peninsula, has proved to be an early urban settlement with socio-professional quarters delimited by series of ramparts and characterised by a hydraulic system, a configuration that finds no comparison in contemporary Southeast Asian settlements and which is interpreted as bearing an Indian imprint. There several specialised industries implementing foreign technologies were producing highly prized produced, some of which clearly being part of the symbolic assemblage shared by maritime Southeast Asian elites. Those industries display far reaching connections not only in the form of raw material and finished artefacts imports from various regions extending to the East to Taiwan and China and to the West to the Indian Subcontinent, but also of the likely presence of South Asian craftpersons settled whose hybridised products were made to order to satisfy the demand of different networks. Later, some of its industries appear to answer the demand of Southeast Asian elites in the process of adopting Indian cultural traits and Brahmi seals are being produced on the site.

Phu Khao Thong on the west coast of the Peninsula is a smaller site fully specialised in the production of craft products. There Indian imports mainly in the form of raw material and ceramics from the Indian subcontinent like rouletted ware, stamped ware and Tamil-Brahmi inscribed ware.

Trade does not develop “ex nihilo” and the unsuspected complexity of the socio-economic organisation reveals how elaborate these political systems and exchange network they weaved were. It is argued that maritime polities were the cradles for major cultural integration processes between the east of the Indian Ocean and the South China Sea and participated in what is traditionally called the Indianisation process and in the diffusion of Indian religions.

Johannes Beltz

Ananda Coomaraswamy, Alice Boner and the symbolic dimension of Indian art

Indian art is still widely perceived as essentially «symbolic». This perception was, in particular, claimed, reaffirmed and promoted by Ananda Kentish Coomaraswamy. He had argued that any representation imitates *the idea* of a thing rather than its substance - as perceived by the senses. With this concept he inspired a large range of scholars and artists of his time.

One of them was Alice Boner (1898-1981), a Swiss sculptor and art historian, who lived for many years in Varanasi, studied the composition of Indian sculptures, translated important manuals on art such as the *Shilpashastra* from Sanskrit into English and became a close friend of the reputed Indian dancer Uday Shankar. The paper will explore how Alice Boner found in Coomaraswamy's work a key to understand the «spiritual essence» of Indian art. At the same time it demonstrates how this transcendental approach still dominates today's discourse on Indian art.

R. Besenval, E. Fouache, C. Cosandey, Y. Ubelmann, R. Dallaporta, S. Reynard.

Geomorphological and archaeological contexts of a Bactro-achaemenian aqueduct identified in the northernmost Bactrian plain (Afghanistan)

Recent surveys, crossing geographical and geomorphological approaches, conducted within the frame of the French Archaeological Mission in Afghan Bactria (MAFBA), with the support of the French Archaeological Delegation in Afghanistan (DAFA), allowed the restitution of four channel generations for the Balkh River; they are dated from the Bronze Age period, the Bactro-achaemenian period, the Kushan period and the ancient, but still active, Islamic period¹.

North of the Bactrian Plain, unreached by Balkh River channels, a strip of sand-dune desert (*Barchan* type), about ten kilometers in depth from south to north, stretches along the Amu River. Before, this area was considered as empty of ancient settlements.

In 2009, along a north-south axis of a still active track leading from the northernmost known archaeological site, Altin Dilyar, up to the bank of the Amu River, the Bactrian Mission identified a succession of ancient agricultural remains. The associated pottery, largely spread in the inter-dune spaces, belongs only to the Bactro-achaemenian period. This deserted area does not show evidence of a paleo-channels network. It

¹ Fouache E., Besenval R., Cosandey C., Coussot C., Ghilardi M., Huot S., Lamothe M., Reynard S., (2011). Recherche des paléo-chenaux de la rivière de Balkh (Afghanistan). Comptes Rendus de l'Académie des Inscriptions et Belles Lettres. 109. 1033-1062.

means that, in any case, the flows of the Balkh River were not sufficiently strong to cross the dune strip. At the end of 2009 mission the presence of agricultural settlement in this area remained an unsolved question.

Nevertheless, during autumn 2010, the Bactrian Mission recognized on the field, then on pictures taken on the spot by our drone (Hexacopter) the presence of an aqueduct, the head of which has still to be located. Archaeological remains of this aqueduct consist mainly of the mud-brick basement largely hidden by the moving of the dunes. In some places of the aqueduct, connections with storage pools (?) have been identified. Remains of agricultural parcels and buildings have also been observed.

This hydrological installation provides evidence that, during Bactro-achaemenian period, irrigation and agricultural development of the Bactrian plain was at its height and the area between Altin Dilyar and the Amu River was subsequently abandoned at the end of this period.

Mokammal H. Bhuiyan

An unpublished collection of Bangladesh: art style and iconography

Art treasures of Bengal are preserved in different museums and private collection at home and abroad, beside these known examples some more unnoticed images are being preserved in museums and private collection as well. Such a collection of stone sculptures and terracotta objects in Comilla, Bangladesh has drawn my attention during field work. It has five stone sculptural pieces-- four are Buddhist deities and the rest one is probably Brahmanical deity. Among the images Jambhala, four armed Tara, and a broken portion of stele are very interesting. Three terracotta objects are also belonged to the collection. Four armed Tara was carved in sand stone. Similar kind of stone was also used for Narttेशvara Shiva, and Garudasana Vishnu that preserved in Chittagong University Museum, Bangladesh. Study of the material of such images is important.

Because, such decaying images of sand stone are mostly found in Southeast Bengal. In respect of style of stele Jambhala is quite different from those found in North Bengal.

Upper portion of a broken stele is unusual. It might have been five guardian figures, but now only two could have survived. It is known that Pancha-Tathagata is found as the guardian figure on the upper portion of stele of some Buddhist deities. But, here the figure in the center of the guardian images cannot be identified with any of the transcendent Buddhas, but may be of some other deity which deserves attention.

Terracotta plaques with animal figures are similar with those found at different archeological sites of Lalmai-Mainamati, Comilla, Bangladesh. However, the collection is important for the study of Bengal art. When it would study and analyze fully, would contribute a great deal to our knowledge of their style and iconography and would add more knowledge on Samatata art of Bengal.

Ravindra Singh Bisht

Harappan Funerary Architecture and Practices from Dholavira

The Dholavira excavations have shed new light, among other things, on the sepulchral architecture and mortuary practices of the Harappans who had witnessed at the site the rise and fall of their culture through seven significant cultural stages, covering a long time period of about 1500 years spanning almost the entire third and early half of the second millennia BCE.

This paper discusses on the variety of forms of sepulchral monuments in the cemetery that lies to the west of the fortified settlement at Dholavira. The forms which are represented there are: cist; cairn being circular, oval, or rectangular; cist within a circular cairn or a pile of earth; circle or semicircle, or rectangular area, lined by stones and housing within it a single, double, or multiple graves; rock cut graves; and imposing hemispherical superstructure of brick work around, and an earthen filling over, a large rock cut chamber. A few of them have been investigated. Barring two inhumations and a few fractional burials, all others in the regular cemetery are bereft of any skeletons or ashes, although offerings, consisting mainly of pottery and sometimes accompanied with jewellery items, are often present. At best, those may be considered as memorial structures or cenotaphs. Some memorials with pottery offerings only, do occur in the Harappan cemeteries found elsewhere, too. Yet, Dholavira stands apart as such cenotaphs are rather the norm than the exception, and their state of preservation is rather satisfactory. This new evidence is indeed of immense academic importance in many a way.

The most striking feature is the continuation of sepulchral traditions and building styles noticed during later periods in India. The building styles of megalithic monuments of peninsular India have some striking resemblances and continuation of traditions that can be traceable to protohistoric cultures of India.

Gian Luca Bonora & Massimo Vidale

Micro and Macro Stone Production at the 4th Millennium Crucial Site of Ilgynly Depe, Southern Turkmenistan

In the last years, the perception of the social and cultural relevance of some prehistoric sites in southern Turkmenistan, north of the Kopet Dag mountain chain, has been modified and deepened by international scientific projects. Among the others, the Italian Archaeological Expedition in Turkmenistan, in 1998 – 1999, mapped and surveyed the 12 ha site of Ilgynly Depe, in the Meana – Chaacha region. New results on the substantial and developed metallurgical production, new hypothesis on the administrative and bureaucratic procedures associated with tokens, seals and tablets and new interpretation on the so called “shrines” (special rooms with elaborated wall paintings, formal seats, stone sculptures and terracotta figurines) of this prehistoric site have been recently advanced. With this work based on the study of local polished stone industry, we intend to highlight Ilgynly Depe as a very important stone working center at the middle and in the 2nd half of the 4th millennium BCE, as documented by the surprising, huge amount and the high variability of stone artifacts, both on its surface and in the excavations, like finished and unfinished stone vessels, grinding stones, pestles, mortars, hollowed and grooved stones perhaps used as weights, rings and various types of rough-outs. Also the jewelry-related manufacture is widely attested at the site by stone finds, finished and unfinished, in lapis lazuli, carnelian and other semi precious stones, as well as by the interesting discovery on the surface of an *Engina mendicaria* shell specimen, presumably from the Indian Ocean, witnessing the socio-political relevance of Ilgynly in the trade network of the 4th millennium BCE encompassing the vast area of the Indo-Iranian Borderland.

Osmund Boparachchi, Deborah Carlson, Senarath Disanayaka & Sanjyot Mehendale
Godavaya Shipwreck, the oldest shipwreck ever so far attested in the Indian Ocean

Sri Lanka played an important role in the long distance maritime trade as a result of its central position in the Indian Ocean. The recent discovery of a shipwreck, five miles from the ancient site of Godavaya (Sri Lanka), at the depth of 30 m has revolutionised our knowledge of the history of maritime trade in South Asia particularly between India and Sri Lanka. The accidental find by fishermen of a stone object with Hindu symbols (Nandipada, Srivasta and a fish) engraved on it has aroused the curiosity of the Department of Archaeology. A surface excavation was carried out by the divers of the Department of Archaeology and the Central Cultural Fund three years back to make an assessment of the archaeological potential of the site. They brought to the surface some samples of Black and Red ware and purified glass ingots. These archaeological finds enable us to date the site back to the 3rd or 2nd century BCE. Two test dives were carried out in December 2010 by an international team composed of the divers and archaeologists from Sri Lanka (Department of Archaeology), USA (INA, University Texas A & M and University of California at Berkeley) and France (CNRS). The carbon 14 analysis carried out on a wood sample dates shipwreck to the 2nd century BCE. This chronological frame now proven to be accurate, thanks to the calibrated dating, pottery typology and the glass testing, this shipwreck should be considered as the oldest so far attested in the Indian Ocean. The preliminary investigation on glass ingots from the Godavaya shipwreck carried out by James Lankton and Bernard Gratuze open the door to the study of glass exchange in South and Southeast Asia; these samples are exactly the type of archaeological material essential for a more complete understanding. The results strongly suggest a South Indian origin for the Godavaya glass, with a particular focus on such unexplored sites as Manikollai and Appur. The paper to be presented at the next conference of the European Association for South Asian Archaeology and Art (Paris, 2-6 July 2012), will also be based on the next campaign to be conducted in December 2011 – January 2012 by the Department of Archaeology, Sri Lanka; International Nautical Association, University Texas A & M; University of California at Berkeley and French CNRS.

Olivier Bordeaux

The coinage of Diodotus I and II, new data and die-study

Numismatic studies of the graeco-bactrian and indo-greek coinage became more and more dependent in the last twenty years of the occidental art trade market which is, as for the Greek coinage of Central Asia, based on fortuitous finds and looting. The discovery of a large number of important hoards since 1990 in Pakistan and

Afghanistan that have been then entirely sold force numismatists to take into account auction catalogues in their research, while numismatics are a key to the understanding of the Graeco-Bactrian kingdom due to the lack of written sources. Among a number of studies, the coinage of the first two graeco-bactrian kings, Diodotus I and II, has been in particular a well-debated case, due to the difficult question of the attribution of all or part of it to the father or the son.

Some new material, more than 300 coins of those two kings, has been sold this way, especially gold coins with the discovery of the Vaisali hoard around 2000, which gave us the opportunity to complete a large die-study of the Diodotids gold and silver coinage so as to settle the matter. It consists of a systematic comparison of all coins of the same denomination – obverse and reverse – in order to distinguish the style of the different engravers and to associate different monograms linked by the obverse. This second point is perhaps the most important because, while no graeco-bactrian mints have yet been excavated except the one in Ai Khanoum, it unequivocally links monograms without any other archeological information than the coin itself.

Our work is therefore a complete refresh of the Diodotids corpus of coins along with a new theory of the general layout based on the die-study evidences, layout rather significantly different than the previous ones based also on die-studies (*i. e.* Kovalenko in 1996 and Holt in 1999). It also presents an overview of a recent article of the *Numismatic Chronicle* by Jens Jakobsson supporting a theory of a putative son of Diodotus I, and a response demonstrating that the “classical” chronology is correct.

Pia Brancaccio

Rock-cut monasteries, representations of Indrashailaguha and the development of Buddhist ascetic practices

The proposed paper maps the relevance and meaning of rock cut architecture in the early Buddhist tradition and sheds light on the shifting parameters associated with asceticism in Buddhist practice between the second century BCE and the fifth century CE. The study will be articulated in three sections:

1. Survey of early representations of Indrashailaguha documented in the narrative art from Bharhut to Kanganhalli as compared to the contemporary tradition of rock-cut monasteries in India.
2. Critical analysis of images of Indrashailaguha in Gandharan art and a re-examination of the archaeological evidence from rock-cut Buddhist sites in Northern Pakistan and Afghanistan.
3. Observations on how changing depictions of caves and actual remains of rock-cut structures betray shifts in trajectory within Buddhist practice. In the early Buddhist tradition cave architecture mirrors structural buildings – the living rock is reshaped and controlled, and the cave units are laid out to reflect organized monasticism as documented in the emerging *vinayas*. The notions of monastic aggregation and control of the landscape seem to be fundamental to the development of early Buddhist cave sites in the Deccan.

Conversely in the Northwest of the Indian Subcontinent, during the Kushana and post-Kushana periods, images of caves and asceticism, as well as actual rock-cut remains from areas like Swat, show that caves were mostly intended as ascetic *loci*. Extreme Buddhist asceticism had become an important and widespread custom, integral to the practice of certain forms of *Mahayana* documented in the textual tradition from the region.

Elizabeth J. Bridges

Archaeology of the Keladi-Ikkeri Nayakas (A Vijayanagara Successor State): Report on Fieldwork, 2007-9

The Keladi-Ikkeri Nayakas were regional kings who ruled first as subordinates to Vijayanagara during the later years of the empire (1500-1614 C.E.) and second as independent sovereigns of a successor state (1614-1763 C.E.). During three field seasons in 2007-9, the Keladi-Ikkeri Nayaka Zone Survey (KINZS) conducted an archaeological survey of the sequent capitals at Keladi and Ikkeri, located in modern Shimoga District, Karnataka. Full-coverage survey methods were utilized to cover over 18 square kilometers at the former urban core areas. A total of 256 sites (62 at Keladi and 194 at Ikkeri) were identified as locations of significant archaeological remains within the two areas of previously continuous urban occupation. Sites were documented through written and photographic means and artifacts were collected when appropriate. Site types recorded include: religious architecture, fortifications, water management, structure mounds, laterite constructions, carved stones and laterite, and isolated artifact collections. Artifacts collected include earthenware vessel and architectural ceramics, coins, groundstone, and Chinese porcelain and Asian glaze ware fragments. Results of the survey will be presented in detail. Differences and continuities between the archaeological records of Keladi and Ikkeri, as well as comparisons with the archaeology of the Vijayanagara imperial capital and later Nayaka period sites will be presented. Roof tile styles, identified Chinese porcelain wares, and archival materials will be

discussed as means through which site chronology can be better understood. Data will be evaluated for its contribution to archaeological and historical understandings of the period as well as to general perspectives on the dynamics of political relations under and after a pre-modern imperial state.

Laurianne Bruneau & Jessie Pons

Diffusion of Gandharan Buddhist cult monuments along the Silk Roads: their architectural and narrative context

Cultural and religious contacts between the north of the Indian sub-continent and the Tarim Basin - present-day Xinjiang - is attested by architecture, manuscripts, coins, sculptures and paintings. The parallels which scholars have drawn between Western and Eastern materials underline the importance of exchanges along the Silk Roads during the first millennium AD. This paper will offer an original contribution to the subject through the study of Buddhist cult monuments and more precisely of *vihāra* architecture.

While *stūpa* architecture is a well-documented topic, that of *vihāra* remains under-studied. After a review of Gandhāran architectural remains which shall introduce to the morphological and contextual environments of *vihāras*, the paper will concentrate on representations of these monuments in petroglyphs from northern Pakistan, narratives reliefs from Gandhāra and paintings from the monasteries of the Tarim Basin notably of a wall-painting from Mogao, Dunhuang.

The sources used for this study have been gathered during research conducted by the two authors. The rock art of northern Pakistan documented by the research unit *Felsbilder und Inschriften am Karakorum-Highway* of the Heidelberg Academy of Sciences and Humanities since the late 1970s, conceals little-known and unpublished images of *vihāras* which greatly diversify the typology of the monument. As for Gandhāran narratives they have been extensively published but the emphasis on geographical distribution which this paper will focus on is the result of a recent doctoral research on the identification and localisation of Gandhāran workshops.

Through the combined study of evidence extent in various media and the joint archaeological and art historical approaches, this paper aims to shed some light on issues regarding the diffusion of an architectural type and its use, and the routes for the diffusion of Gandhāran cult monuments to the oases of the Tarim Basin. Finally, the analysis of the development and transformation of *vihāra* representations from Gandhāra to Dunhuang should contribute to the larger question of transfer and adaptation processes of a Buddhist motif along the Silk Road.

Frédérique Brunet & Abdurauf Razzokov

Towards a new characterization of the Chalcolithic in Central Asia. The Lithic Industry of Sarazm (Tadjikistan): A Case-Study of the Interaction between steppe and oasis, Neolithic and Bronze Age.

The transition from the Neolithic to the Bronze Age, which is usually linked to the Chalcolithic, is still not well understood in Central Asia. In the current state of research on the neolithisation processes, which happen in this region between the Xth and the IIIrd millennium, we wish to propose different definitions according to the societies under study. There is something to suggest that it is either a relatively short (Botaj, Northern Kazakhstan) or a long development (Namazga I-IV, Southern Turkmenistan) during which the local Neolithic tradition evolves into Bronze age; in the dry or steppe regions with *tugai* forests (Uzbekistan and Northwestern Tajikistan), it is rather a transitional period, marked by contacts between Kel'teminar Neolithic groups and contemporaneous Early Bronze Age communities characteristic of steppe areas. Sites located along the Zeravshan river, from its upper valley in Tajikistan to the meanders which are ending in the nowadays sands of the Kyzyl-Kum desert in Uzbekistan, are a very good illustration of the latter situation. We will focus here on some of the recent results, yielded by the techno-typological study of the lithic industry from the agropastoral settlement of Sarazm, dated to the Chalcolithic and Early Bronze Age (IVth-IIIrd mill.). This material deserves particular attention since it helps to define the specific cultural identity of Sarazm inhabitants, and to discuss the mechanisms and dynamics of the complex interaction between contemporaneous communities with different lifestyles such as those from Kazakhstan, Uzbekistan, or even Siberia. The presence of some specific pieces and techniques, as well as of a great number of raw materials which reveal different geographical provenances, confirm the existence of a broad network of relationship; Sarazm would be one of the nodal points of this net.

Gudrun Bühnemann

Bhīmasena as Bhairava in Nepal

Bhīmasena, the second of the five Pāṇḍava brothers in the Mahābhārata, there portrayed as a redoubtable warrior, is worshipped in Nepal as a form of Śiva or, more precisely, as Bhairava. Bhīmasena's shrines and temples are common in today's Nepal, and various iconographic forms of the divinity are represented independently in paintings and line drawings, and as woodcarvings and brass sculptures. In this paper I will examine the rather complex iconography of Bhīmasena which developed in Nepal under the influence of Tantrism. I will especially focus on representations of Bhīmasena slaying Duṣṣāsana, in which he is accompanied by two (often gaunt) figures associated with charnel grounds, the habitat of Bhairava, Śiva's wrathful form. I will show that Bhīmasena's iconography in Nepal, as perceived from at least the seventeenth century onward, developed from South Indian prototypes. But whereas in South India Bhīma is merely the epic hero and serves as a guardian, in Nepal he is also worshipped as a divinity in his own right. This change of status and his identification with Bhairava added specific features to his more complex iconographic forms.

Pierre Cambon

A propos de la niche TK 142, Monastère de Tapa Kalan, Hadda, Afghanistan

Le génie aux fleurs de Hadda est l'une des pièces emblématique du musée Guimet à Paris. Elle est publiée par Alfred Foucher dès 1929 dans les *Monuments et Mémoires de la fondation Eugène Piot*, par Jules Barthoux en 1930 dans les *Mémoires de la Délégation Archéologique Française en Afghanistan*, volume III, figures et figurines, voire par Joseph Hackin en 1933. La pièce provient de la niche TK 142, monastère de Tapa Kalan. Elle s'inscrit dans le complexe TK 140, que Barthoux considère comme relativement ancien au vu de sa structure.

Quelques fragments d'archives (un brouillon de liste manuscrite de Barthoux et le fonds des photos conservées au musée, dont une partie devait servir à préparer le volume 2 des fouilles - qui ne fut pas publié) permettent aujourd'hui de mieux visualiser l'ensemble où s'inscrivait la niche TK 142. Ils permettent de comprendre en partie le contexte qui voit d'un côté un stupa avec quelques fragments de schiste ou bien de chloritite, de l'autre une série de modelages en stuc et en terre crue sur les murs de la cour qui l'entourent, ponctués de quelques niches – soit des phases à priori très différentes sur le plan stylistique. Ils confirment que Hadda a connu une histoire à rupture, son développement s'inscrivant au fil des époques entre le Kapisa ou bien le Gandhara, entre la région de Kabul et celle de Peshawar.

Le complexe TK 140 éclaire ainsi d'une certaine manière l'ensemble du monastère de Tapa Kalan et son évolution, les points de convergence ou bien les différences avec les établissements monastiques qui l'entourent, tout en montrant que Hadda s'insère dans un ensemble plus vaste dont les fouilles actuelles dévoilent la dynamique. Hadda toutefois garde sa singularité par la juxtaposition de matériaux variés qui témoignent de sa situation historique ou bien géographique. Quand le schiste de TK 140 évoque Begram ou bien le Gandhara, la chloritite rappelle le Swat ou Taxila, alors que le bijou du génie aux fleurs se retrouve sur le relief en calcaire du British Museum, rapporté de Hadda, ou sur le bodhisattva en terre crue de Tapa Marenjan.

*The genius with flowers from Hadda is one of the iconic pieces of the Guimet Museum in Paris. It is published by Alfred Foucher in 1929 in the *Monuments et Mémoires de la fondation Eugène Piot*, by Jules Barthoux in 1930 in the *Memoirs of the French Archaeological Delegation in Afghanistan*, Volume III, figures and figurines, or even Joseph Hackin in 1933. The piece comes from the niche TK 142, in the monastery of Tapa Kalan. It is part of the complex TK 140, considered by Barthoux as relatively old in view of its structure.*

Some fragments of archives (handwritten draft of a list by Barthoux and pictures in the museum, part of which was used to prepare Volume 2 of the excavations - which was not published) now allow us to better visualize the context in which niche TK 142 was inserted. This context is, on one side, a stupa with a few fragments of schist or chloritite, and on the other a series of modeling in stucco and clay on the walls of the surrounding courtyard punctuated by a few niches – that is, a priori very different phases in terms of style. They confirm that Hadda had a broken history, its development varying, according to the time, between Kapisa or Gandhara, between Kabul and Peshawar.

TK 140 illuminates the complex and somehow the whole monastery of Tapa Kalan and its evolution, the points of convergence or differences with the monastic establishments that surround it, while showing that Hadda is part of a larger set whose current excavations reveal the dynamics. Hadda

however retains its uniqueness by the juxtaposition of different materials that testify to its historical or geographical situation. When the schist of TK 140 evokes Begram or Gandhara, the chloritite reminds Swat or Taxila, whereas the jewel of the genius with flowers is to be found on a limestone relief from the British Museum, brought from Hadda, or an unbaked clay Bodhisattva from Tapa Marenjan.

Brad Chase, P. Ajithprasad, Ambika Patel, Bhanu Sharma, & Rajesh S.V.

Exploring Diversity: Material Variation at Two Harappan Settlements in Gujarat (India)

We present the results of recent explorations of material diversity at Shikarpur and Bagasra, both small walled settlements of the Indus Civilization (2600-1900 BC) excavated by the Maharaja Sayajirao University of Baroda located approximately 20 km from one another across the Gulf of Kutch in Gujarat. At the EASAA conference in 2010, Chase, Ajithprasad, and Rajesh demonstrated that although articles of Classical Harappan material culture were in use at each of these sites, significant variation exists in the relative abundance of particular artifact classes. As excavations at Shikarpur and laboratory analyses have proceeded, many of our earlier observations have been confirmed while others have been refined. Here, we specifically explore relative abundance and stylistic variation in the corpus of terracotta objects (including triangular cakes, bangles, figurines, and “toy” carts) and ornaments (shell bangles and a variety of types of stone beads). As these artifacts are the materialization of domestic practice and personal adornment, these analyses suggest significant social diversity at these two otherwise very similar sites. Primarily descriptive at this stage of research, our continued work nevertheless contributes to a more complete understanding of the social processes by which Gujarat was integrated South Asia’s first urban civilization.

Beatriz Cifuentes

Bodh Gaya: Excavating Collections at the British Museum

This study is part of a larger project entitled ‘The Radiant Buddha’ which focuses on the British Museum’s material from eastern India, specifically from Bodh Gaya. The aim of the project is to carry out collection and field research relating primarily to the Gupta and post-Gupta periods at Bodh Gaya. The research presented in this paper focuses on the largely unpublished documents and collection items given to the British Museum by Alexander Cunningham in the 19th century. Cunningham, in charge of the restoration of the Mahabodhi temple and major excavations at the site, donated a range of items including stone sculptures, terracotta plaques, seals, and offerings in the form of gem stones, coral, jewelry and coins. He also gave the British Museum photographs and drawings that help reconstruct the history of the Bodh Gaya and the nature of his excavation activities there. The votive offerings, including finished and unfinished gem stones, provide crucial information about Buddhist pilgrimage between the circa 4th and 6th centuries and furnish a basis for further questions about the site’s position in the trans-national networks of the medieval Buddhist world.

Francesca Cecilia Conesa, Andrea Balbo, Bernardo Rondelli, Marco Madella & P. Ajithprasad

A remote sensing based approach for identifying geoarchaeological evidences in N Gujarat, India

Here we present an integrated geoarchaeological research that aims at understanding taphonomic processes affecting settlement detection, preservation and visibility. Research is focused on hunter-gatherer (so-called Mesolithic) and agro-pastoral (so-called Chalcolithic Anarta) communities during the Early to Middle Holocene in N Gujarat, India.

Our study area is an ecotone region located between the Thar Desert, the Aravalli Hills and the Little Rann of Kutch. Current physiography of N Gujarat is dominated by relict sand dunes in which archaeological evidence is found. This “fossilized” landscape has preserved geoarchaeological records that can be detected using satellite imagery.

In recent years remote sensing (RS) technologies have been widely used in archaeology to study anthropic features in arid and marginal regions. New perspectives in the use of RS technologies are increasingly oriented to reconstruct past environmental conditions, model subsistence strategies and understand socio-ecological dynamics. Within this framework, the first stage of research comprises the integration of multispectral and historical satellite imagery, elevation data and regional field survey for a better understanding of archaeological evidence in relation to current geomorphological features.

Preliminary results suggest a different scenario that seems to contradict the established one. The evidence from the surface material and site location, integrated with the imagery data, gave the possibility of discovering new sites through supervised field survey. Finally, this new approach is also helping in redefining a classification of the recorded surface scatters, moving away to an approach that uses only the cultural material to one that considers also the environmental, geomorphological and geographical features.

Elisa Cortesi & M. Daszkiewicz

Sohr Damb/Nal: Results from Archaeometric Studies of Pottery

Sohr Damb/Nal is known for one of the most important ceramic traditions in central Baluchistan. The excavations conducted by the German-Pakistani Archaeological Mission to Kalat brought to light four periods of occupation dating from 3500 - 2000 BCE and a huge corpus of artefacts and information, facilitating comprehensive archaeometric analysis e.g. on the ceramic assemblage.

Chemical and petrographic analyses have been conducted with the target to investigate the provenance and circulation of ceramic artefacts and to reconstruct the operational chain, assessing the degree of craft specialization involved in manufacture. Samples from all periods were analyzed by means of re-firing analysis (Matrix Grouping by re-firing, MGR-analysis), X-Ray Fluorescence (WD-XRF) and petrographic thin sections.

After a brief presentation of the adopted archaeometric techniques, the results obtained from Sohr Damb/Nal will be discussed and compared with information obtained from the analyses of ceramic specimens from Shahr-i Sokhta (Sistan, Iran).

Mary A. Davis

The Social and Economic Urban Landscape at Harappa

This paper presents the conclusions of a dissertation project investigating the nature and composition of districts and neighborhoods at Harappa. The results of the spatial distributions of lithic materials and other artifact classes are summarized and interpreted. The site of Harappa, Pakistan (3500-1700 BC) was one of the first major urban centers of ancient South Asia and is one of the largest and best-studied sites of the Indus Civilization. The Harappan Archaeological Research Project has produced a vast amount of data in over two decades of research and has demonstrated that the city was segmented into walled and un-walled divisions. This research has employed these data in a detailed and theoretically informed spatial analysis. The major focus of this study has been in the distribution of chipped stone tool types that are the result of various behaviors and activities. A spatial analysis of these chipped stone tools is compared to the distribution of other classes of artifacts utilizing a GIS database created for the site of Harappa. Here the resultant patterns of variation and commonality in the material culture within and between different city sectors are presented. These patterns of material culture and indicators of ancient behaviors demonstrate that different social communities and crafts were repeated in each sector of the site or district of the city. This in-depth analysis confirms previous quantitative and qualitative studies of the author and other scholars working at Harappa concerning the nature of the mounds. A new model is put forth that these segments of the Indus city represent spatially competing groups in a decentralized urban landscape. New hypotheses concerning the nature and composition of these spatially based factions or corporate groups are evaluated. Within each of these districts there are internal variations that are believed to reflect the variability of previously proposed neighborhoods. The compiled data allows for neighborhood membership and identity at Harappa to be explored. These completed results now provide a clearer view of the nature of each of these neighborhoods and the social and economic processes that were working within the city.

Aurore Didier, Roland Besenval & Gonzague Quivron

Miri Qalat (Makran, Pakistan): Settlement pattern, pottery tradition and regional interactions around the middle of the 3rd millennium BC.

The proposed paper comes within the framework of pioneering archaeological work carried out between 1990 and 1996 on the site of Miri Qalat (Kech valley, Pakistani Makran) located in the western hinterland of the Indus valley. The excavation of Trench I has provided a unique reference stratigraphy for the Makran region around the middle of the 3rd millennium BC, and the study of the pottery assemblage completed with

unpublished data allows to bring a valuable and important insight of specific craft traditions and regional and extra-regional interactions.

The occupation of Period IIIc (2600-2500 BC) is indeed characterized by a huge amount of ceramics reflecting interactions with south-eastern Iran and the Oman Peninsula during a period preceding the development of the Indus civilization. In Period IV (2500-2300 BC), the site of Miri Qalat displays an original pattern of settlement based on the coexistence of the Indus culture and the local cultural tradition in the continuity with the previous periods. The preliminary study of the Period IV pottery indicates that the transition between Periods IIIc and IV is marked by a corpus of local fine red and grey wares in low proportion and of a ceramic material characteristic of the first phase of the Indus civilization. The other artefacts show typical Indus features (cubic stone weights, steatite stamp-seal, animal figurines, various terracotta and ivory objects, flint blades, stone beads and metal objects).

On a regional scale, Miri Qalat allows to document the links of mutual dependencies between the Indus valley sites and the Makran region, also known for its "Harappan maritime outposts" located on the coastal area: Sutkagen-Dor and Sotka Koh. Both were likely involved in the long-distance trade during the second half of the 3rd millennium BC. From the data provided by Trench I, the paper aims to better understand the local adaptation of the Indus civilization in a socio-economic pattern based on a close relationship between an inland agricultural site from the central Kech Valley (Miri Qalat) and the coastal settlements.

Armance Dupont-Delaleuf & Aurore Didier

Ceramic productions at Ulug Depe from the Late chalcolithic to the Early Bronze Age: technical traditions and typo-chronological evolution.

Since 2001, the recent fieldworks carried out on the site of Ulug-Depe (District of Kahka, Turkmenistan) by the French-Turkmen Archaeological Mission (MAFTur) under the leadership of O. Lecomte and M. Mamedow have provided a wide range of ceramics, collected both in domestic and funerary contexts. Due to its long occupation (5th-1st millennia BC), to its stratigraphy which extends over almost thirty metres and to its sequence of architectural remains, Ulug-Depe is one of the major sites for sedentary farming communities in southern Turkmenistan, from the Chalcolithic to the Iron Age. From the existing typological classification, Ulug-Depe pottery can be related to the Namazga III to Yaz periods according to the chronological sequence established in Southern Turkmenistan. Since few years, global and collective ceramic study gives us a great opportunity to better characterize the material culture of the site during last millenniums BC and to integrate it in a regional perspective.

In this paper, we will focus our purpose about the occupation periods dated between Late Chalcolithic and Early Bronze Age (Periods Namazga III and IV, ca. 3500-2500 BC). The present work, still in progress, combines both typo-chronological and technical approaches. The detailed technological analysis of this remarkable pottery, with complex paint decorations, is an innovative work for Central Asian ceramic. On the one hand, we will reconstruct manufacturing processes to reveal the manner in which wheel finishing was introduced and we will compare the variability of techniques identified for each period with the evolution of ceramic shapes and decorations as well as refining chronology and focusing on the transitional phases observed. On the other hand, the reconstruction of *chaînes opératoires*, thanks to the potter's point of view, permits us to think about specific difficulties and constraints of produced shapes and used techniques. Finally we will try to paint a first portrait of those craftsmen addressing the questions of skill and production organization.

Harry Falk

The cultic background of the so-called "toilet trays"

Continuing my studies on wine production in the contexts of Buddhist monasteries (EASAA 2010 Vienna) I propose to see the so-called "toilet trays" as libation trays in private rituals. As seen before, they are formally copied from stucco tondos which had a completely different technical background. My main piece of evidence is a newly found tray where just this scene is depicted: a god showing all signs of the Greek Hermes pours a libation by the side of a tripod in the classical tradition of a "sacrificing god". The themes shown on the trays in relief seem to hint at a ritual around the consumption of wine. The bi- or multisection of the trays' interior likewise seem to follow ritualistic requirements. Two trays carry inscriptions, which will also be read and interpreted

Thomas R. Fenn, Peter Robertshaw, Ed Wilmsen, Marilee Wood, David Killick, Patrick Degryse, & Joaquin Ruiz

From whence the monsoon blows: Indian Ocean trade in glass beads with Africa in the 1st and 2nd Millennium AD

Imported glass beads are an important source of evidence for Indian Ocean trade. The presence of thousands of imported glass beads on archaeological sites in Eastern and Southern Africa are an excellent example of this, but questions remain about the potential sources for these beads. Typologically, these beads are similar to beads from Southeast Asia, South Asia and the Middle East. A sample of more than 1000 beads from Eastern and Southern Africa has been subjected to chemical composition analysis by inductively coupled plasma mass spectrometry (ICPMS), and statistically grouped into various glass “recipes”. Some of these can be correlated with known broad regional traditions of glass manufacture (e.g. plant-ash glasses) but other groups cannot. In this paper we supplement the trace element analyses with lead, strontium and neodymium isotope analyses of a sub-sample of 86 glass beads from 18 sites in 5 countries of Eastern and Southern Africa. These beads span a time range from as early as the 8th century AD until as late as the 17th century AD, and include at least 6 defined, chronologically progressive typologies. Possible provenances for both the raw primary glass production and the bead production can be suggested from the different isotopic systems. These isotopic results, combined with the chemical compositions, have identified at least two primary regions of origin for the glass beads, the Middle East and South Asia. Perhaps more interesting is an apparent shifting back and forth between these regions through time as sources for the glass beads found at the Eastern and Southern African sites.

Vasundhara Filliozat

A few rare sculptures from the Trailokyeśvara temple at Pattadakal

Karnataka especially Aihole, Pattadakal and Badami are known as cradle of Indian art. This art of building temples started in these places first. These three places once upon a time between 5th and 8th centuries of our era were the capitals of Calukya kings of Karnataka.

In this dynasty the last but one king was Vikramāditya II (A.D.735-744) and he conquered Kanchi thrice. In souvenir of his victory over the Pallava of Kanchi, Lokamahādevī and Trailokyamahādevī his two queens built temples to Lokeśvara and Trailokyeśvara at Pattadakal in the south Indian style. These two temples are rich in iconography.

There are eighteen pillars in the *rangamaṇḍapa*. Most of them are covered with sculptures representing epic stories and mythological.

1. One episode in three scenes is represented in two panels on one of the pillars in the Trailokyeśvara temple. A lady is sitting in front of a temple. In the next scene she is caressing a parrot. In the second panel she is pulled out by men. One of them has raised a sword on her. Others are flabbergasted by it. In the next scene she is put to an ordeal –to be stamped by an elephant.

This is the story of Citrasena in the *Narasīṛhapurana*.

2. A body is carried by three men and a lady is following them crying desperately. This scene is interpreted on another pillar in the same *maṇḍapa*. This is the story of Duśśalā from the *Mahābhārata*. The youngest sister of Duryodhana Duśśalā marries Jayadratha. In the Kurukṣetra war she loses her husband and two sons. With the body of one of her sons she approaches Arjuna. This episode is interpreted on this pillar.
3. On another pillar in the same *rangamaṇḍapa* is the story of *Gajakacchapanyāya* based on the *Mahābhārata*. This is the story of two brothers fighting, lives after lives for their father’s property. Now one of them is born as an elephant, the other as a tortoise. Sage Kaśyapa advises Garuḍa to eat them and put an end to their dispute.

Ute Franke & Elisa Cortesi

The Prehistoric Ceramic Traditions of the Indo-Iranian Borderlands: The Pottery Collection in the National Museum of Pakistan, Karachi

In 2010-2011 the German-Pakistani Mission to Kalat received the permission to record a large collection of confiscated prehistoric vessels coming from illegal excavations in Baluchistan, now kept in the National Museum of Pakistan, Karachi.

The large collection stored at the National Museum of Pakistan in Karachi comprises vessels from the 4th-3rd millennium BCE ceramic traditions of the Indo-Iranian Borderlands, particularly from Northern and Central Baluchistan, as well as from Makran. 778 complete pots ascribed mainly to the time from the 4th to the 3rd millennium BCE were recorded. Although pottery types of 4th millennium (Sohr Damb I) occur in considerable numbers, the majority of pots belongs to the Nal Cultural Complex (Sohr Damb II) while a few belong to the Sohr Damb III and Harappan traditions.

While the complete samples in the museum provide the unique chance to record more comprehensively shapes, technological features and motives, the more fragmented collection from Sohr Damb/Nal provides a possibility to correlate the former with stratified examples.

In the presentation, an overview about the collection kept by the National Museum of Pakistan in Karachi and its implications for our understanding of the prehistoric pottery tradition from this period will be presented.

Marion Frenger

In the hands of the gods - sun and moon discs held by Indian deities and their different levels of meaning

In North Indian sculptures of the first half of the first millennium CE the discs of sun and moon have been shown as attributes in the images of several deities; among them are images of Īiva and Viṣṇu/Vāraha as well as of Durga Mahiṣāsuramardinī. In all cases the identical or near-identical discs are held up by the deity in two hands and with arms stretched out. In this formative phase of iconic representations in North India they do, however, only occur in single images and for none of the deities mentioned did they become standard attributes in the following centuries. The question what made this pair of attributes - at a certain point in the development of their iconography - acceptable for all major brahmanical deities, is therefore of particular interest. To argue that sun and moon were regarded as the eyes of different gods from Vedic times onward and were therefore connected with them does not sufficiently explain their presence. In the paper different meanings related to the pair of sun and moon will be presented and their relevancy for the theological concepts of each deity discussed; finally possible reasons for the continued presence of the discs in the range of attributes held by "Indian" gods in Central Asia will be briefly considered.

Kishor Gaikwad,

Probing Gender imageries: Evaluation of Human figurines at Inamgaon and Daimabad

Chalcolithism in Maharashtra region (India) reveals variety of proto-types of power structures of historical period, most importantly gender relations in the society. As early farming culture ceramic culture, along with other terracotta artifacts, furnishes some ideas pertaining to sex and gender which were taking roots in chalcolithic psyche. The present paper is focusing on human figurines from two important chalcolithic sites in Maharashtra - Inamgaon and Daimabad. Both sites are well-recorded sites and are embodying all intricate nuances of local chalcolithic culture. Both sites situated in western Maharashtra and display cultural sequence for longer period. Daimabad has longitivity from 2300 BCE to 1000 BCE whereas Inamgaon has cultural sequence from 1600 BCE to 700 BCE. Both have well defined strata of Savalda culture, Late Harappan culture, Malwa culture, Early Jorwe culture and Late Jorwe culture. Daimabad has earliest inhabitants of Neo-chalcolithic phase in the region whereas; Inamgaon has around one hundred and thirty houses. These early farming cultures had varied constellations of power in the social structures. For example, one of the terracotta figurines at Daimabad, shows a male embracing three females. Size, shape, muscular details and expressions provide us a window to peep into gender relation as well as understanding the embedded role and function of each figurine. Likewise, Inamgaon has fifty human figurines, which are mentioned under miscellaneous category in the Excavation Report. The present paper is an attempt to critically study these human figurines from the gender perspective mainly in terms of their possible sex and gender roles, functions, imageries and power relations.

Adalbert J. Gail

Double entendre (śleṣa) in the visual arts of India, Nepal, and Cambodia

Double-entendre, pun, ambiguity (*śleṣa*) is a type of embellishment (*alaṅkāra*) of Sanskrit poetry (*kaṅvyā*) that can boast of a long tradition and was highly estimated by poets and connoisseurs of Indian literature. The simultaneous expression of two (or more) meanings by a single word is preferably used in connection with comparisons (*upamāna*) and metaphors (*rūpaka*). Daṅḍin, 7th century CE, compares the lotus with a female face using three attributes that bear different meanings according to whether they are related to the lotus or to the face. Vāmana's descriptive adjectives (8th century CE) have one sense when related to warriors, another one when referring to women's breasts.

Essentially it should not be surprising that not only poetry, but also the visual arts are here and there imbued by a certain predilection of double-entendre. In some cases this phenomenon cannot be denied at all, in others two modes of reading can at least be assumed.

1. The well known figure of Śiva in the cave Bḍm, dated ca. 550 CE, can be looked at as Ardhanārīśvara or Vādhara depending on the perception of a bowl-shaped elevation on his left upper body: if taken as a female breast, it is Ardhanārīśvara, if taken as the sounding box of the vāḍha, it is Śiva vādhara. The Bḍm figure is a perfect instance of visual ambiguity.
 2. Since Jean Philipp Vogel interpreted the beautiful large relief at Māmallapuram (7th century CE) as a representation of the descent of the Ganges, there rose an intensive debate among scholars whether the image represents Arjuna's penance or Gaṅgavataraḥ. There are indications that both readings are not only justified: they were intended.
 3. Mahāyāna Buddhist art, as we know, in many cases follows Hindu pictorial models. In some cases the proximity of the Hindu original and the Buddhist variant is so close that one could think that the Hindu interpretation is at least not fully to be neglected. The Hāhala Lokeśvara imitates the Umā-Maheśvara figure in such a way that the onlooker is at risk to confuse the Buddhist with the Hindu icon.
 4. The Buddha, taken as the ninth avatāra of Viṣṇu, is doubtless an ambiguous figure. If he is also turned into a four-armed Hindu ascetic, this ambiguity seems to be underlined.
 5. The Nāyaka Bahis is a Buddhist caitya in Kathmandu (19th century CE), embellished with the four directional Jinās: Akṣobhya (east), Ratnasambhava (south), Amitābha (west), Amoghasiddhi (north). With their Vaiṣṇava and Śaiva emblems Amoghasiddhi can also be interpreted as Viṣṇu, Ratnasambhava as Śiva.
 6. The bulky image of a kneeling Garuḍa in the complex of the Cāḍgu-Nārāyaṇa temple in Nepal, north of Bhaktapur, can also be read as a portrait of king Mānadeva (5th century CE). In the same way the cult image of Avalokiteśvara in the Preah Khan temple in Angkor represented, according to a Sanskrit inscription, a portrait (*pitṛmūrti*) of the father of king Jayavarman VII. Along these lines the impressive faces of Angkor Thom can be read both as Avalokiteśvara and as Dharaṅdravarman II., father of Jayavarman VII.
 7. According to old Indian tradition Durgā is connected with a lion as vāhana, Lakṣmī stands on a lotus. If, however, the goddess, equipped with a *cornucopia*, emblem of Lakṣmī, appears seated on a lion, this iconographical collating leaves open both interpretations, Lakṣmī as well as Durgā, or: the one and undivided Devī.
 8. In a recent article (*Artibus Asiae*, vol. 71.1) I have discussed the image of the boar incarnation of Viṣṇu on one face of the Budhagupta Pillar dated 478 CE. Here a boar-head has to be added to the male wearing a lotus. At the same time, however, this lotus has to be understood as the symbol of the earth, as attested by numerous Purāṇic accounts.
 9. The Nāgeśvara temple at Kumbakonam, a temple of the early Coḷa period (9th century CE), disposes of an extraordinary image-program. In addition to the usual Śaivamūrtis the side-niches contain images of a king, women, princes, a guru, etc. The ensemble can be read both as the royal family of the founder as well as the family of Rāmacandra.
 10. The lintel embellished with fleshy flower-garlands is a favourite motif of the Khmer temples of the pre-Angkor and of the Angkor period. In some cases this garland is turned into a *nāga* grasped by its enemy Garuḍa. Yet the body of *nāga* is still distinguished by the floral design of the garland.
 11. A beautiful Mughal painting of Noah's ark is attributed to Miskin, ca. 1590 CE. The middle floor of the vehicle is inhabited by human beings, the upper one by birds, the lower one by mammals. The humans can be interpreted both as Noah's family as well as the family of the prophet.
 12. Double meaning is not limited to the oriental world. A great player with meanings was Picasso. One of his nudes, now on display in the *Pinakothek der Moderne* in Munich, exhibits a fruit (apple?) cut by a curved knife. The fruit also represents the nude's belly pierced by a penis.
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Juan José García-Granero, Carla Lancelotti & Marco Madella

Plant processing activities at Loteshwar (North Gujarat, India): A micro-botanical approach

Plants are, and were in the past, a fundamental resource for human groups. Many edible plants, both wild and domestic, require a certain degree of processing prior to consumption. These processing activities can leave behind specific archaeobotanical signatures that can be then used to track plant consumption. Among these activities, milling is one of the most easily identifiable due to the presence of grinding stones in the archaeological record. The present study aims at understanding plant-processing activities through the analysis of phytoliths and starch recovered from grinding stones collected at the site of Loteshwar.

This research is part of the ongoing North Gujarat Archaeological Project (NoGAP), which studies socio-ecological dynamics in North Gujarat during the Holocene. The site of Loteshwar was excavated in 2009. Zooarchaeological analyses and radiocarbon dates from a previous excavation (1991) showed that hunter-gatherer groups occupied this site between ca 7200-5500 BC, whereas agro-pastoral communities (Anarta) settled in the area between ca 3700-2200 BC. Scholars have often suggested that agriculture was part of the subsistence strategies of the Anarta communities. However, so far there is no published report about archaeobotanical analyses from Anarta settlements.

The analyses show that grinding stones were used for processing plants for both food and non-food purposes. Phytoliths and starch grains suggest that grasses (in particular pooids and panicoids) were widely exploited in both periods of occupation. Currently, identification is not at genus/species level but the intensification of the exploitation of grasses during the Anarta period may be indicative of the higher importance of grain plants in the subsistence strategy of the agro-pastoral groups, which might have led to agriculture.

The lack of chaff charred remains and the low presence of phytoliths from inflorescence of grasses (generally less than 5% of the total) suggest that other processing activities (apart from milling) might have taken part outside the site.

Ranjusri Ghosh

A Few Fierce forms of Śiva and Four Image Inscriptions from North Bengal

The paper will focus on stone reliefs found during a recent tour in Bangladesh and Dakshin Dinajpur district of West Bengal. First we will take up the reliefs depicting the terrific forms of Śiva. The commonness of all the reliefs is that they came from the erstwhile Dinajpur district of undivided Bengal.² This is quite in tune with the iconographic profile of this district. In the assemblage of icons so far discovered from this area we noted quite a good number of Śaiva images (including a few forms of Śakti) some of which are with no peers. This fact should be regarded as a distinguishing feature of this district which throughout the period of visual representation of different deities in stone and other mediums shows a clear tilt towards Śiva-Śakti cult in some of its important settlement zones. Elsewhere³ we tried to focus on one such zone around the historical site of Bangarh, which revealed evidences of continued habitation for a period of about 2000 years (4th century BC-AD 15/16th century). The images under study are found respectively in Gangarampur block (where remains the Bangarh site) in Dakshin Dinajpur district of West Bengal and Biral *Upazila* in Dinajpur district of Bangladesh the latter lying directly about 20 km north from the former. Both of the two administrative units are notable for archaeological remains including a good number of stone sculptures.

All of the four dedicatory inscriptions we are going to present here are in *gaṇḍyā* script and engraved at the bottom of the stele. Three of them show the Brāhmaṇical god Viṣṇu and the fourth shows the Buddhist goddess Tārā. Two again specify the donors as *dāhapatī*. Of the rest two the dedicator of one Viṣṇu image has described himself as *paṇḍita* i. e. a learned person. Another donor is an administrative head, a *mālikā*. These small epigraphs are quite interesting as they present us some notable individuals of society. Number of dedicatory images so far this author came across is not negligible. The corpus of such epigraphs may become a dependable source of social history of Bengal.

² It is now divided into several districts.

³ Ranjusri Ghosh "Saiva cult and Some Images at Bangarh: Dakshin Dinajpur", *Journal of the Asiatic Society* (Kolkata) XLVIII/ 4, 2006: 44-64.

Sandrine Gill & Himanshu Prabha Ray

Locating Buddhism at Sanghol in the Punjab-Haryana plains

The site of Sanghol, district Fategarh Sahib in the present state of Punjab is famous for the typically Kushan style stone railing of its *stūpa*, in Sikri sandstone imported from Mathura, located about 400 km to the southeast. The uniqueness of this find also lies in the circumstances of its discovery in the course of 1985 excavations, buried and carefully packed in a pit close to the main *stūpa*. Beyond this spectacular discovery, excavations by the Department of Archaeology of Punjab and the Archaeological Survey of India between 1968 and 1990 have brought to light at least two monastery complexes at Sanghol itself.

This paper discusses these finds from Sanghol with reference to the expansion of early Buddhism in the Haryana-Punjab plains. Geographers define the southward-sloping Haryana-Punjab plains as located between the Yamuna on the east, the Sutlej on the west, Siwalik hills in the north and the Rajasthan craton in the south. The unique feature of this alluvial plain is the near absence of a trunk or axial river flowing through the region, though a number of channels flow south from the Himalayas. In addition to Sanghol, several other Buddhist sites have been explored or excavated in this region. How is the expansion of Buddhism in the early centuries of the Common Era to be explained? Was it merely a transition zone between the better known centres of Mathura and Gandhara schools of Buddhism? We address these issues based on archaeological work in the region.

Sanjeev Gupta, R. Sinh, A. Singh, K. Thomsen, J-P. Buylaert, A.S. Murray, A. Carter, D. Mark, P. Mason, M. Jain, G. Yadav & M. Ferrat

Large-scale River Channel Shifts on the Western Indo-Gangetic Plains and their implications for the Bronze-age Harappan Civilisation Settlement Patterns

The distribution of settlements in ancient societies is commonly linked to the courses of large river systems. The Bronze Age Harappan civilisation (4800-3500BP) is no exception with the major sites of Harappa and Mohenjo-Daro located along the Indus river system. However, the largest collection of Harappan archaeological sites are associated with the postulated surface trace of a large paleo-river channel in the drainage divide tract between the Ganges and Indus river systems, where no major river currently flows. It has been proposed that this paleo-channel was occupied by a major river sourced in the Himalaya, and that this river provided water resources to sustain the extensive Harappan sites located along its ancient course. The abrupt abandonment of urban centres here at ~3500 BP has been explained as a consequence of river diversion, although alternative explanations for cultural decline have also been entertained. These hypotheses have remained untested because the stratigraphy and chronology of the postulated paleochannel has never been determined. Here we investigate the evolution of these paleodrainage systems using a combination of satellite image analysis, subsurface geophysical analysis and sediment coring to analyse the large-scale planform geometry, and detailed sedimentary and stratigraphic nature of the postulated paleochannel in NW India. We focus our analysis on tracts of the proposed channel that lie adjacent to major Harappan urban centres in NW India, such as the site of Kalibangan in Rajasthan. We find that the postulated surface trace of the paleochannel on satellite imagery is confirmed by subsurface geophysical investigation and detailed coring. The sedimentology and stratigraphy of multiple cores taken at several transects along the trace of the paleochannel shows the evolution of the fluvial system. We determine the provenance of the fluvial channels using U-Pb dating of detrital zircons and Ar-Ar dating of detrital muscovites. These detrital minerals can be fingerprinted with potential source areas in the Himalaya using modern river sands and bedrock ages to constrain sediment sources. We use optically stimulated luminescence dating to develop age models for the cores. These data are combined to reconstruct the spatial and temporal evolution of this paleo-river and consider its influence on settlement patterns of the Harappan civilization in NW India.

Adam Hardy

Temple Architecture in the Samarāṅgaśāstradhara

The *Samarāṅgaśāstradhara*, the treatise on *vastu* ascribed to the Paramāra king Bhoja of Dhar (ruled c. AD 1010-55), contains chapters dealing exclusively with temple architecture. The architecture that they describe

does correspond roughly to Bhoja's period or a little later. Different chapters pertain to different regional stylistic traditions. Several chapters (55-57), relating to temples in central and western India, deal with Nāgara temples, comprising both the basic Latina type and the later composite varieties. One chapter (65) is concerned with Bhīmija temples, a variety that appeared in the eleventh century in the Paramāra realm of Malwa and in surrounding regions. Chapters 61 and 62 are devoted to the Drāviḍa temples of south India.

The paper, deriving from a study being carried out in collaboration with Mattia Salvini, will present an overview of these chapters and of the architecture that they deal with, illustrated by drawings derived from the text. To formulate a coherent image of an intended temple design it is necessary to focus less on the architectural terms themselves, which vary greatly even within a single chapter, than on the relationships between the elements described, keeping in mind the possible temple styles and compositions, and recognising when the words fit a particular pattern. It is only by translating a *vastu* text into drawings that a useful discussion may be had concerning the relationship of the text to practice. To establish the extent to which any particular text may have been useful for creating architecture, it must be shown whether it *can* be used for this purpose. Some chapters of the *Samarāṅgaśāstrā* are mainly concerned with the ingenuity of their internal logic, while others do yield coherent temple designs, provided the designer knows the architectural tradition and is able to interpret the instructions, make choices, and fill in what is missing. The discussion will be amplified by comparison with the engraved architectural line drawings surviving at the temple site of Bhojpur, also ascribed to Bhoja, which I have documented.

Smriti Haricharan

Typology and spatial patterning of Iron Age- Early Historic burials at Siruthavoor, Tamilnadu, India

Iron Age megalithic burials are regionally spread over the Vindhya, Deccan and Peninsular India. They follow the general characteristics of the Indian megaliths but also have certain individualistic characteristics; therefore in the megalithic context both the macro and micro level studies are essential. The Megalithic burials have been typologically classified by archaeologists on a broad perspective, thereby fitting all burial types into limited terms. There is a need to look more specifically at these burial types. This paper explores two aspects of the Iron Age-Early historic burial systems of Tamilnadu through intensive field work carried out at one particular site namely Siruthavoor. This site is 50 kms from Chennai, Tamilnadu and has been occupied since the Early Historical period until today and there are over 500 burials at the site. Besides surveying and mapping the archaeological and geological features at this site, excavations were carried out by Department of Geology, Anna University, Chennai in Collaboration with the Archaeological Survey of India, Chennai circle.

Firstly the paper explores whether the classification system presently followed takes into account all the typological variations within the Iron Age-Early Historical burial context. This site, like many others in Tamil Nadu has cairn circles, dolmen, dolmenoid cist and cist type burials as well as permutations and combinations of the above. The second aspect of the paper is to analyse the temporal and spatial segregation of the burials within the site. All 500 burials were mapped and classified using the previous classification system. The generated maps then reveal that the circles, dolmen, dolmenoid cist and cists are spatially segregated on the landscape. There seems to be some amount of correlation between burial type and geological features such as elevated areas of the site and water bodies. Dating of the burials indicates that temporality is significant to understanding the spatial differences between burial types. The burials also show signs of spatial pattern within the different burial types, circular and linear alignments are clearly noticed. This paper highlights the importance of understanding the Iron Age-Early Historic burials of this region in context with their landscape.

Jason Hawkes

Finding the Khassa Malla: Recent Archaeological Investigations in West Nepal

West Nepal has received little archaeological attention, and remains one of the least understood areas throughout South Asia and the Himalayas. We have only the sketchiest outline of its history, and the ways in which this key geographical area was connected to and interacted with neighbouring areas of Tibet, India and the rest of Nepal. This lack of knowledge and understanding has real implications today, as concepts of the past are often manipulated and used in the construction of modern ethnic and political identities.

Recent work carried out by the University of Cambridge represents the first archaeological investigation to have been carried out in West Nepal since the explorations of Giuseppe Tucci and Yogi Naraharinath in the 1950s. Initial work focussed on the site of Sinja Khola, the capital of the medieval kingdom of the Khassa Malla, who ruled West Nepal between the 12th and 16th centuries CE.

Following a hiatus brought about by Maoist activities in the area, investigations have recommenced in the Surkhet Valley, on the southern periphery of the Khasa kingdom. The valley is dominated by the remains of a medieval settlement and large Buddhist temple, and would have been an important nexus in the networks of inter-regional connections that spread across West Nepal during the medieval period.

This paper will present the main findings of both of these phases of work, and demonstrate the importance of this large and understudied area—not only in terms of our knowledge of Nepalese history, but also our understanding of the whole of North India and its international contexts during the medieval period.

Julia A. B. Hegewald

The International Jaina Style?: Sola'k Temples Throughout India and Beyond

My paper will explore the transmission of architectural styles and building conventions beyond regional and state borders from the medieval period to the present day.

I will focus on the Sola'k style of architecture (10th to 13th centuries), commonly described by art historians as the high point of Jaina temple building in India. Fascinating for our enquiry, however, is the particular appeal, which this style appears to have for Jains themselves. When they started to return in large numbers to the East of India from the 16th century onwards, they raised Jaina temples in Bihar, West Bengal and Orissa in the north-western Indian Sola'k style, although the east had its own distinct architectural traditions and surviving ancient Jaina structures. The same can be encountered in the south of India, in places such as Tamil Nadu and Karnataka.

One may argue that it is due in particular to the mobility of the Gujarati Śvetāmbara Jaina community who as merchants moved into these new territories and took with them the medieval style of their home region. However, also when Jains went abroad, to Kenya, to the UK and to North America, they - and this is then usually a conglomerate of Śvetāmbara, Digambara and also non-image worshipping Jaina groups - they transferred this style and frequently constructed temples imitating Sola'k architecture. In many instances, a direct link to Gujarat and to north-western Indian craftsmen can be established. In others, it is local master architects aiming to convey a distinct Sola'k impression.

The paper will stress the significant role which styles of architecture play in shaping identities, establishing ties with the past and with one's home region (even if this is simply a perceived mythical home) and as such transgress regional, national and temporal boundaries.

The presentation will focus on primary sources in the form of recently identified and newly documented architectural structures throughout India and in the diaspora. The discoveries and interpretations of this recent fieldwork have not been published before.

Brett C. Hoffman

The Copper Assemblage at Harappa: A Typological and Compositional Analysis

The long-term excavation program conducted by the Harappa Archaeological Research Project (HARP) at the Indus Civilization site of Harappa, Pakistan has uncovered a large number of material culture objects spread across multiple raw material types. Perhaps, other than clay, none of these materials were used by Indus craftspeople to fashion such a broad array of object types as copper. The assemblage includes tools and weapons, items of personal ornamentation as well as administrative and economic objects. Copper and bronze artifacts have been recovered from all time periods and occupation areas at the site. Harappa is not the only Indus site to yield such a copper assemblage. All major excavated Indus sites have a large and diverse collection of copper artifacts. Despite this fact, archaeologists still know comparatively little about the copper metallurgical tradition within the Indus than compared to other 3rd millennium Bronze Age cultures.

Previous research has documented the use of copper alloys of several types across the Indus; however it is not clear if these alloys were used to fashion specific types of objects or how these patterns may have developed. Additionally it is unclear if the forms present in the copper assemblage are consistent or subject to change and modification, particularly over time. This paper attempts to begin to redress these lacunae in our understanding of the copper assemblage from Harappa. Copper artifacts are first divided into broad categories based on morphological characteristics. Using metric measurements, these categories are then divided into sub-types. Finally the types are compared to an existing database of compositional data from Harappa. This type of detailed categorization process will test to see if copper artifact types are correlated with metallurgical technologies (such as alloying practices) or change over time. Additionally, the poster will present images of major artifacts, ores, crucibles, and other key objects from the overall research project. Future research will

determine whether the patterns identified are specific to only the site of Harappa or have broader applicability to other major Indus sites.

Pinna Indorf & Swati Reddy Gudur

Ordering Patterns in the Layouts of Buddhist Monasteries of Andhra Pradesh

Buddhist influences began to spread from India throughout Asia during those early years of its development when iconographic elements were not yet formalized thus posing problems for the interpretation of early Buddhist remains. Aside from the images, remains from this early period include few inscriptions, architectural remains comprised primarily of foundations and fragments of architectural elements and décor. Scholarly effort to link these archaeological artifacts with sectarian development or monastic practices has met with only partial success. Remains from South India and Andhra Pradesh have received less attention than those from the heartland of Buddhism and Northern parts of India. Parts of the South, however, are an important link in the understanding of the earliest phase of Buddhism in Southeast Asia. Sarkar's (1966) work does at least provide a body of information about early Buddhist monasteries of Nagarjunakonda in Andhra Pradesh. He also attempted to link particular monastic ruins with sectarian affiliations on the basis of inscriptions and architectural form. That effort was partially successful. This study builds on that work by analyzing the ordering principles, including relationships between components and evidence of functional zoning in the Nagarjunakonda sites as well as a few other Andhra Pradesh sites. This results in a revised typology and what could be a somewhat clearer pattern of sectarian affiliation with monastic types. It reveals possible links between practices and doctrinal emphasis and types of monastic layouts.

Shreekant.S.Jadhav

The six major unfinished caves at Ajanta – A Geoarchitectural approach

The caves at Ajanta (Lat.20° 32' N: Long 75° 45' E. Dist. Aurangabad) occupy a unique position among the monuments in India due to superb symphony of architectural forms, sculptures, iconography and above all the world famous mural paintings.

In all there are 30 rock-cut caves of which five belong to the early phase i.e. Hinayana. These are Nos. 9, 10, 12, 13 and 15A dated to circa.1st century B.C.-1st-century A.D. on a modest scale. The rock-cut excavation was revived on a more ambitious scale in the middle of 5th century A.D. The phase of activity began during the supremacy of the Vakataka dynasty.(ascribed to the period of Harisena of the Vakataka dynasty who was ruling in the region in the last quarter of the 5th century A.D.

Among these 30 caves at Ajanta, five are *Chaitya-grihas* (prayer halls), i.e. cave Nos. 9, 10, 26, and 29 the rest are *Viharas* (monasteries). There are about six major unfinished caves, viz. Nos. 3, 5, 23A, 24, 28 and 29; these unfinished caves help us to understand the method of excavation.

The present paper deals with the geological setting of the unfinished (incomplete) caves. The major and minor geological flaws, weathering pattern, chlorophaeite enriched zones, siliceous veins, hydrothermal altered tachylites traversing in the amygdaloidal vesicular basalt in all the rock-cut caves including the unfinished caves have been studied.

The unfinished caves tell us about the method of excavation, eg. Cave No.5, 24 and 29. These have been dealt in detail. Cave No. 5 and 24 serves as a model from which one gets an idea as to how a *Vihara* is being excavated and at the same time how simultaneous work was in progress as well as division of work. Cave No. 29 serves as a model from which one can understand as to how a *Chaitya* is excavated.

My studies show that in a majority of the caves, craftsmen have succeeded in maintaining very high standards of cave architecture inspite of obvious flaws. The present paper also deals with the intricate aspects of cave architecture not only geology but also anthropogenic factor. An attempt has been made to find out the complex relationship between geology and human skill observed in the rock-cut caves at Ajanta and also if there is any major geological flaw for the incompleteness of the six major rock-cut caves under study.

Gregg M. Jamison

The Organization of Indus Seal Production: an investigation of style, technology, and power

Inscribed steatite seals are among the most well-known and emblematic artifacts of the Indus civilization (2600-1900 BCE), and are often used to identify the Harappan character of a site. They are diverse in form and function, and would have served many important purposes, including as symbols of wealth and power used by ruling elites to legitimize and reinforce their authority (Kenoyer 2000). This research explores the relationship between seal production, use, and larger issues of social and political organization and control. Using complementary and innovative analytical techniques such as experimental studies, ethnoarchaeological research, and formal stylistic and metric analyses, it has been possible to fingerprint groups of seals that would have been carved in different workshops throughout Indus cities. Examining the nature and scale of these groups within and among sites has provided new insights into the sources of variation in seal manufacturing techniques, trade and exchange networks, and the ways in which production was organized throughout the entire Indus. More importantly, it has also provided a new dataset useful for testing current models of Indus social and political structure and its complex relationship with craft production and use.

Rita Jeney

New data for Sir Aurel Stein's Ghaggar-Hakra tour: In the light of his archives kept in the Library of the Hungarian Academy of Sciences

Sir Aurel Stein conducted his tour along the Ghaggar-Hakra River in 1940–41 making geographical as well as archaeological observations of the dry river bed with the goal of understanding 1.) the time-period when the water carried by the river was sufficient for agriculture and 2.) the chronology of the river's desiccation. Due to his passing away in 1943 he was unable to publish all of his observations; only one article appeared in 1942 in *The Geographical Journal*. The manuscript of his field report, which was published by S. P. Gupta in 1989, contains descriptions of sites he visited and archaeological finds he collected, but no pictures have been so far published of this material.

Sir Aurel Stein in his will, out of respect for his Hungarian origin, left his library, part of his archive and his collection of photographs to the Hungarian Academy of Sciences. In this collection are over 50 gelatin silver prints of artefacts collected by him on his Ghaggar-Hakra tour, photographed by him but never published by him or any later researcher. The photographs show groups of artefacts belonging to different archaeological periods from the Harappan civilization to the Rang Mahal culture but without any reference to the exact site names. In order to identify the provenance of the photographed artefacts and give a complete description of them, I have compared the archive photographs with the archaeological material collected by Aurel Stein, stored in the Central Antiquity Collection of the Archaeological Survey of India at the Purana Quila, Delhi. New research into the material collected by Aurel Stein along the Ghaggar-Hakra bed not only enlarges our knowledge about this archaeologically remarkable area but provides new data for the history of South Asian Archaeology.

Anne-Claire Juramie

Iconography of wooden temples from Himachal Pradesh: tradition, borrowing and invention?

This presentation follows a research project undertaken on architecture and iconography of wooden temples in Himachal Pradesh South valleys, in North India.

Tradition, borrowing, assimilation et adaptation are often used to describe the iconography of these monuments mainly after the classical repertory of India – inherited from stone temples of *nagara* types – to which were juxtaposed, mingled elements or external motives (from Central Asia or even further).

Is it possible to speak, however, not to mention some local specificity, about originality, true invention from these traditional or foreign models? Can a style unique to these regions, these valleys, away from traditional and usual patterns be defined?

Through the study of the reliefs adorning some of the wooden temples of the Indian Himalayas, my aim is to highlight the themes, treatment and perhaps to bring out an original vocabulary.

Kai Kaniuth

The Late Bronze Countryside. Excavations at Tilla Bulak 2007-2010

Excavations have been carried out at the Late Bronze Age site of Tilla Bulak (Southern Uzbekistan) from 2007 until 2010, in a joint effort of the Institute of Art History, Uzbek Academy of Sciences and the Institute for Near Eastern Archaeology, Munich University. The first season of excavations has been reported on during the Ravenna conference.

By 2010, an estimated 40 % of the site have been excavated, allowing for detailed insights into the organization and economy of this early 2nd-millennium village. The present contribution will give an overview over the stratigraphy, absolute chronology, architecture and small finds from the site.

Arunima Kashyap & Steve Weber

Forgotten crops of Indus

To date, reconstruction of agricultural practices at Harappan sites is based almost entirely upon carbonized seed grains. This in turn has led to a focus on cereals and other large seeded crops. Our knowledge regarding vegetables, spices, fruits and nuts; edible oils and plants yielding plants; and roots and tubers has been comparatively limited. With more intensive soil analysis strategies, a growing emphasis on residue analysis from surface of stone implements and ceramic vessels used for processing, cooking, serving and storage of plant foods, and new studies of human and animal dental calculus, a great variety of new crops are now being identified. Based on new and recently collected data, this paper explores and identifies many of the forgotten or previously undocumented crops of the Indus civilization. What is becoming evident is that a much greater variety of plants were cropped and used during the Harappan civilization than previously realized.

Gwendolyn Kelly

Meaning in Context in the Iron Age: Beads and Ornaments in Megaliths, Ritual and Daily Life at Kadabakele, Karnataka (1200– 300 BCE)

Beads and other ornaments are ubiquitous in Iron Age sites in South India. They have been used as indicators of trade, and markers of wealth and social status. Beads (along with black-and-red ware ceramics) have been used to connect megalithic burials with habitation sites of the same period. What is missing from this picture is a contextual understanding of how beads and ornaments were used in different contexts - in domestic life, and megalithic mortuary and memorial (ritual) contexts.

In this paper I focus on recent excavations at Kadabakele, Karnataka, in comparison with Brahmagiri and other Iron Age sites in South India. The overall assemblage of beads and ornaments at Kadabakele is similar in many ways to other sites in the region. However, by comparing the deposition of beads within a megalithic ritual space and domestic spaces at Kadabakele, I demonstrate how this megalithic ritual space was continuous with daily life, not separate from it.

We may envision, based on the patterns of deposition, that people at Kadabakele wore beads everyday, most often just a single or a few beads strung, probably around the neck. They may have lost them while adding on courses to the stone circles, or in ritual activities, such as the offering and eating of food, performance of dance or other physical activities that took place there. Careful excavation shows they were not included in any of the specific offering pits, which included iron artifacts and ceramics.

This argument contrasts with the reports of beads from Brahmagiri and other sites of the same period, where beads were interred as groups of multiple beads of the same or similar type (necklaces), and were clearly placed amongst offerings interpreted as grave goods. Such a conclusion can either suggest that Kadabakele was unique in how its inhabitants interacted with their own megalithic constructions, or that previous reporting of beads and ornaments has been incomplete.

Jonathan Mark Kenoyer

Bead Drilling Technology of the Indus Tradition: Regional Diversity and Legacy

Beads have been used for ornaments by many different cultural traditions in South Asia, beginning during the Upper Palaeolithic and continuing on through the present. This paper will present the results of recent studies of stone bead drilling from major sites belonging to the Indus Tradition (2600-1900 BC), such as Harappa, Mohenjo-daro, Chanhudaro, and Dholavira, as well as beads from settlements in neighboring regions of Mesopotamia. Beads from smaller settlements of the Indus region will also be discussed in order to understand regional patterns of drilling in stone beads.

The technologies used to drill beads changed over time and important regional patterns can be seen in the morphology of drills as well as the types of drilling that was carried out on different types of stone materials. Through a careful documentation of bead drilling, it is possible to determine the general chronological period and technology used to perforate the stone, and also trace the movement of beads from major workshops to consumers in different regions both within and outside of the Indus valley.

The analysis of drilling and the major types of drills used on different types of stone beads will be presented along with the techniques used to identify these drills using Scanning Electron Microscopy. Extensive experimental studies of drilling have now been carried out by the author, using different types of stone drills, and drills made from wood, bamboo, and metal using different types of abrasives. Comparative analysis of the experimentally drilled beads with ancient beads makes it possible to refine and in most cases confirm the identification of specific drilling technologies developed in the past. Many of the stone drilling technologies were replaced at the end of the Indus period with abrasive drilling technologies and eventually with diamond drilling technology.

Through the identification of drilling technologies and bead types used in the Indus tradition it is possible to trace the movement of beads that were traded and curated for hundreds and in some cases thousands of years extending over a vast region from the Mediterranean to South Asia and possibly even to East Asia.

Muhammad Ashraf Khan

Recent Exploration of Archaeological Sites and Monuments in the District Rawalpindi and Islamabad

The area under present study (Rawalpindi and Islamabad) is rich in archaeological wealth, a transitional region between the high lands of Swat, Kashmir and the alluvial plains of the Punjab played a very active role in the human history since the remote antiquity. The earliest stone tools used by the man of this region, some two millions ago have been recovered along the course of river Soan near Riwat. Then we come across the Bronze Age sites of Jhang Bahtar and Serai Khola, the Gandhara Grave period settlement of Hathial and the great center of the Buddhist art of Gandhara in Taxila Valley. This paper is based on the recent archaeological survey conducted in the region of Rawal Pindi and Islamabad and as a result of this extensive survey one hundred and thirty archaeological sites and monuments were recorded which include rock shelters, historic mounds, historical period monuments are known from caravan serais, Baolies along the ancient routes, religious and secular buildings of Hindu, Muslim and Sikh periods. These sites and monuments range from Stone Age to medieval period.

J.S. Kharakwal, Y.S. Rawat, Toshiki Osada & H. Seth

Kanmer: A multicultural site in Kachchh, Gujarat, India

Kanmer, a multicultural site, is located in Rapar tehsil of Kachchh district of Gujarat. Our excavation has yielded five fold cultural sequence at the site. Period I (KMR I), characterised by bichrome pottery, was identified as pre-urban phase deposit. The subsequent cultural phase KMR II was marked by a urban phase remains of the Harappans including planned settlement and a very strong fortification. The following cultural period i.e., KMR III showed an overall decline in the cultural material including poor quality of structures. Also seals, script material, terracotta cakes were conspicuous by their absence. As most of the urban phase pottery types continued in this phase besides appearance of some non Harappan type pottery, this deposit was identified as Late Mature Harappans. Following the desertion of the Harappans and after a gap of nearly 1800 years the Iron Age people arrived at the site. The discovery of a few Brahmi seal impressions, Red Polished ware and presence of West Asian and Roman pottery attested these remains to the early centuries of the Christian Era. These remains were termed as KMR IV. These Iron Age people deserted Kanmer perhaps during the 4th century

CE. Later on during the Medieval times the site was again occupied. These remains were identified as KMR V. A large number of residential structures, floors and associated remains have been discovered from the site belonging to these different cultural phases.

Prior to the urban phase of the Harappans at Kanmer, the local Bronze Age folks were well aware of semiprecious material like agate and carnelian. Besides beautiful painted pottery, they were using a variety of beads of semiprecious material, paste and terracotta. With the advent of urban phase, Rohri chert blades, large number of drill bits, finished and unfinished beads of variety of semiprecious material together with terracotta cakes, S shaped jars, seals and script material appeared at the site, besides Sorath elements. A major change in frequency and typology of this material was recorded and it is likely that the enterprising Harappans might have mastered the local technology. The settlement was very small (less than 500 people!) and it was protected by a very massive fortification for certain reason(s). It is likely that they were storing and exporting raw material. In addition to this the evidence of a furnace, huge dumping of ash on either side of the defence wall, large number of coarse Red Ware jars burnt on the inner surface and discovery of considerable amount of raw material, over 150 drill bits and rough outs all indicate that the Harappans were engaged in various kinds of crafts and resource management at Kanmer. It appears that the local knowledge contributed largely to the prosperity of the Harappans.

During the Iron Age the Kanmer folks enjoyed trade contacts with the Roman World and with the West Asians. The settlement was enlarged during the Medieval phase when a fort was also constructed on top of one of the hillocks near the ancient site. A few coins of this phase have also been discovered at the site.

The site has yielded varied faunal and floral remains. Cereals such as barley (*Hordeum vulgare*), bread-wheat (*Triticum aestivum*), dwarf-wheat (*Triticum sphaerococcum*), rice (*Oryza sativa*), field-pea (*Pisum arvense*), and green-gram (*Vigna radiata*) besides cotton (*Gossypium arboreum/ herbaceum*) are in the collection. Perhaps rice appeared at the site towards the end of the Harappan settlement. The site has yielded evidence of both winter as well as summer crops. The faunal remains include mammals, birds, fish, reptiles and molluscan species. Among the domestic animals, cattle, buffalo, sheep, goat, pig and horse were identified. More than a dozen wild animals were identified in the collection, including the nilgai, antelopes, deer, carnivores, rodents and elephant.

The geomorphological and phytolith studies indicate that the Harappans enjoyed much better precipitation at the site than what is today.

The find of three unique seal impressions stamped by the same seal is perhaps the most interesting discovery. They have been identified as identity cards. A number of AMS dates indicate that the urban phase can be bracketed between 2500 and 2000 BCE.

This paper is an attempt to summarise the results of the excavation of the first phase at the site. It was an Indo-Japanese effort.

Deborah Klimburg-Salter

Mes Aynak and the Cultural History of Kapisa-Kabul

Gerald Kozicz

Two 11th Century Stupas from Ladakh

The 11th century was a period of cultural and economic prosperity for the region of today's Ladakh, when Buddhism spread under the patronage of the Kings of Guge and Purang and political stability secured the trading routes. The monastic complex of Nyarma became the intellectual and religious centre of a wide-spread monastic network in the neighbouring districts along the Indus and its side valleys. Today almost all these places are in ruins and only a few intact remains have come to light. Complete temples seem to have survived only further down the Indus, namely the so-called Alchi Group of Monuments.

In summer 2011 the present author surveyed two of the ruined sites and their extensive stupa fields on the left banks of the Indus. One stupa with a conical chamber fully decorated with murals was newly discovered. Another so far un-documented stupa was surveyed near Stok next to a large temple ruin. It has a spatial conception which has not been found elsewhere in the western Himalaya based on three linked, parallel chambers and it is fully decorated. The three facing walls are extensively decayed or damaged. However, a large number of painted Buddhas in rows has survived on the lateral walls. They provide evidence for AN early date on stylistic grounds. In addition, the stupa contains unusual and comparatively large-scale depictions of stupas. These paintings neither mirror the 'Kashmiri'-style stupa paintings of Alchi nor do they follow the

composition of stupas which survived in murals inside the Nyarma stupas. The paper will discuss the spatial aspects and the related iconographic systems as well as the paintings of the stupas inside the Stok stupa. The comparative study both in regional context (including Alchi and Nyarma) as well as in a cross-regional context (including rock-carved stupas from Chilas) will probably shed new light on the vigorous religious practice of Mar-yul/Ladakh as well as the ways Buddhism and cultural influences spread along the Trans-Himalaya trading routes.

Carla Lancelotti, Bernardo Rondelli, Alessandra Pecci, Fernanda Inserra, Andrea Luca Balbo, Javier Ruiz Perez, Victoria Yannitto, Charusmitha Gadekar, Marco Madella, Ajithprasad P, Miguel Angel Cau Ontiveros

Ethnoarchaeology of domestic activities in Northern Gujarat: a spatial approach

This paper describes an ethnoarchaeological approach aiming to: a) evaluate the understanding of spatial patterns of domestic activities within farmer groups in Northern Gujarat and b) to identify possible anthropic markers of domestic activities that can be then correlated to the archaeological record.

Ethnoarchaeology is a consolidated approach in Indian archaeology and is oriented a) to the creation of reference collections for the interpretation of archaeological record (analogical reasoning); b) to the improvement of field research strategies for the detection of anthropic markers (reflexive reasoning). In both cases, ethnoarchaeological studies are more qualitative than quantitative. On the contrary, in this paper, we propose a spatial, qualitative and semi-quantitative approach.

In a compound within a village of Northern Gujarat (Jandhala), after a detailed topographical survey of structures and domestic activity features, we have applied a systematic sampling strategy for archaeobotanical (phytoliths and micro-charcoal), geoarchaeological (micromorphology) and chemical (35 elements ICP-AES and spot tests) analyses. The objective was the exploration of spatial correlation between mapped daily activities of food processing, food storage and fuel use and patterns emerged from the combination of sampling results.

In this paper we present the results of multi-element and fat analysis as well as micromorphological study of different structures (fireplaces, floors and walls). The results show the potential of this approach to understand spatial variability of bio-markers within domestic structures. The possibility offered by this approach to recognise domestic activity signatures in the archaeological record is pivotal for our understanding of past use of space and resources in Northern Gujarat.

Randall Law

Indus Civilization stone and metal acquisition networks: A comparison of patterns from Dholavira and Harappa

Large-scale geologic provenance studies of stone and metal artifacts from the site of Harappa, located in Punjab Province, Pakistan, have enabled us to examine, in unprecedented detail, patterns of inter-regional interaction and raw material acquisition during the development and urban phase of the Indus Civilization (ca. 2600-1900 BC). In this paper, those patterns are compared to the preliminary results of a similar study presently underway on materials from Dholavira – the southernmost Indus city located in the Kachchh District, Gujarat, India.

Instrumental neutron activation analysis (INAA) of steatite artifacts indicates that although residents of Dholavira acquired some raw steatite from deposits in the Gujarat/ Rajasthan border region, most of it came from the same sources (in Khyber Pakhtunkhwa Province, Pakistan and Jammu, India) that residents of Harappa primarily relied on. INAA of chert debris confirmed that Harappans in Gujarat, like their fellows in the Punjab, largely obtained this stone from the Rohri Hills of Sindh. INAA of agate-carnelian manufacturing debris indicates that most of the stone used by beadmakers at both Dholavira and Harappa came from deposits in Kachchh rather than the famous raw material source at Ratanpur in southern Gujarat. Isotopic analysis of lead and silver artifacts has shown that southern Balochistan was the primary source region for Harappans across northwestern South Asia. At Dholavira, however, a minor amount of both metals, as well as some copper, was obtained from the Ambaji area of northern Gujarat. Stone such as vesuvianite, serpentine and chlorite came from sources outside of Gujarat while materials like limestone, gypsum, amazonite, basalt, sandstone and, quite probably, "Ernestite" were available within that region.

Overall it can be stated that, unlike residents of Harappa, who dwelled hundreds of kilometers from any source of stone or metal, people at Dholavira participated in intensive local (Kachchh) and regional (Gujarat) rock and mineral trade networks. Certain materials were acquired through inter-regional networks. However, as

was the case at Harappa, those networks were largely confined to northwestern South Asia. Evidence for stone or metal obtained through external trade networks (e.g., to the Gulf region or Mesopotamia) is, at the present time, limited.

Laurianne Lecat

Sculptures of Hinglajgar

The images studied are known as “the sculptures of Hinglajgarh” because they were kept for a long time in the fort of the same name located in the Mandasaur district in the north of the present Madhya Pradesh. The sculptures come actually from Hindu and Jain sites of which only a few foundations remain, most of them located in the vicinity of the fort. These sculptures are now preserved in various museums of Madhya Pradesh. The study focuses on the photographs of 414 sculptures taken during two trips.

The research conducted on these sculptures is based on an iconographic study, in order to bring out the elements needed to identify those which may come from the same set and to place them back, as far as possible, in the iconographic program to which they originally belonged. The study, which takes into account various elements, from the nature of the stone to the types of jewelry which adorned the figures, has already provided a better understanding of this collection of sculptures.

Most of these works have never been studied, this research will highlight the importance of this collection which is of an exceptional artistic quality and of great interest from the point of view of iconography.

Coline Lefrancq

A part of the ancient daily life in Bangladesh: Study of the pottery from the “Mazar” area of the Mahasthangarh archaeological site

The poster will present the first results of my PhD research which started in October 2010, under Dr Bautze-Picon’s supervising.

My study is based on the analysis of the pottery from the “Mazar” area of the Mahasthangarh archaeological site in Bangladesh. This *corpus*, containing 80% common ware, has not been studied yet.

During the last congress of the European Association of South Asian Archaeology in 2010, Dr Ernelle Berliet and Dr Barbara Faticoni presented the data excavations.

This year, I propose to expose the contribution of the pottery analysis, related to the stratigraphy spreading from the Maurya period to the 13th century.

I have specified the type of pottery characterizing each period and established the chrono-typology using three methods:

- Study and characterization of the diverse productions by the fabric analysis and clay identification;
- Ethno-archaeological observations to reconstruct the operational sequence work and the uses of the vases;
- Comparison of the results in order to shed a new light on economical exchange networks that developed during the different periods in the area of Mahasthangarh in the Bay of Bengal.

Johanna Lhuillier

Early Iron Age “painted ware Cultures” in Central Asia: Review of current researches

After the Middle-Late Bronze Age Oxus civilization, the Iron Age is characterized by major ideological upheavals throughout Central Asia. During this period (Yaz I period), various cultures coexist, which are known as “handmade painted ware cultures” and developed between ca. 1500 and 1000 BC. It is characterized by an important transformation of material culture, of cities and by a radical change of funerary practices, announcing the Middle and Late Iron Age, probably in link with the development of proto-zoroastrism. All of them are sedentary cultures, whose economy is based on agriculture and cattle breeding, and whose ceramics are mainly handmade and sometimes painted. Analyzing a large corpus of firsthand data, especially ceramics, from the major sites where French missions are currently working (Koktepe and Dzharkutan in Uzbekistan, Ulug-depe in Turkmenistan) and from other sites, a general reflexion is lead about continuity/discontinuity of material complexes, living conditions, social status and urban evolutions. The pluridisciplinary approach developed

(considering all material features) of the Early Iron Age cultures in Central Asia could determine the common and specific features of these “painted ware cultures” and define their regional cartography.

Linda Lojda

Can there be a Daoist influence in Bāmiyān?

In her book *The Kingdom of Bāmiyān* (1989) Deborah Klimburg-Salter tentatively identified a group of 5 arhats in Bāmiyān cave N and a fragment of Mahākaśyapa in cave G dating from the end of the 7th to early 8th century. By analysing the respective Buddhist texts the identification of these figures as arhats can be strengthened.

Visually, it is striking how these figures were depicted similar to “sages” in the Chinese Daoist pictorial tradition. Therefore the question arises whether the Chinese pictorial tradition could have impacted Bāmiyān. Thus, this paper will firstly, analyse the textual evidence for the identification of the figures as arhats and secondly, discuss the possible impact of the Chinese tradition on the art of Bāmiyān.

Alice Lowson, Smriti Haricharan & Danielle Wootton

Addressing current concerns in the recording and reporting of portable antiquities

While ideally archaeological artefacts are recovered from the ground through excavation, they may be accidentally unearthed during agricultural or other land use activities. Or, they may be retrieved by enthusiastic amateurs, sometimes with the help of metal detectors. Regardless of the means of discovery, there is considerable information and data to be gathered from recording the origin and context of such portable artefacts.

In India the Archaeological Survey of India (ASI) has initiated a project titled National Mission on Monuments and Antiquities. The stated objectives of this mission are ‘to develop a national database with a view to enhance access to the students, scholars, researchers and to the general public and preserve it for the posterity. The main emphasis should be to improve awareness about cultural inheritance and encourage their use for educational and research purposes for lifelong learning.’ ASI. This project also addresses the issue of conflicting stake holder interests.

The Portable Antiquities Scheme (PAS) in England and Wales provides an interesting example of a system which addresses this very problem. The PAS is an archaeological heritage project which has been running since 1997 and has demonstrated considerable success in the documentation of antiquities and the inclusion of the general public in an endeavor to preserve their heritage.

Funded by the Nehru Trust in association with the Victoria and Albert Museum, the authors are currently researching the workings of the PAS alongside its Devon Finds Liaison Officer. The research is carried out in the context of its relevance to the future of portable antiquities preservation in other countries such as India, and will be completed in January 2012. In view of the current Indian initiatives within the area of antiquities protection and recording, such research efforts are both necessary and beneficial.

This poster aims to explore the results of this pilot project. Attention will be given to PAS artefact recording and public outreach methodologies, and these will be considered against the backdrop of current challenges within the South Asian context.

Elise Luneau

The fall of the Oxus civilization and the role of exchanges with the Neighboring societies during the first half of the second millennium B.C.

The Final Bronze Age in southern central Asia (ca. 1750-1500/1450 B.C.), considered until now as a phase of crisis and general collapse of the Oxus civilization, can be characterized in a renewed way thanks to new researches carried out on the existing data (publications, studies in the Central Asian stockrooms) and on unpublished data collected with archaeological expeditions in Uzbekistan (Dzharkutan, MAFOUZ - Protohistoire), in Turkmenistan (Ulug-Depe, MAFTUR) and in Tajikistan (Gelot, Russian-Tajik Expedition). With a multidisciplinary and historical point of view, the systematic comparative analysis of the whole material culture and social components coupled with a global reflection about the notions of "decay" and continuities/discontinuities on a long term since the end of the Middle Bronze Age until the beginning of the Iron

Age allowed to underline important characteristics of the Oxus civilization during this period. Some sociocultural processes and transitional phenomena between the Middle Bronze Age and the Early Iron Age are obvious. With the refinement of the periodization, this evolution appears less linear that was supposed. Several phenomena can be interpreted, in a point of view totally new, in terms of resilience and adaptation of the populations to the upsets, allowing a cultural, and probably sociopolitical, survival in altered form during almost 300 years.

Several explanations about these transformations can now be invalidate or moderated. Among them, the shifts of the networks of exchange are still questionable. Whereas the relations with the southern area are well known in the Middle Bronze Age, the slowing down of trade between Central Asia, South Asia and Mesopotamia is noticeable in the first half of the second millennium B.C. Consequently, we had to take into account the sociopolitical and cultural conditions of the neighboring societies at this period. The aim of this paper will be to develop new perspectives about the transformations of the Oxus civilization during the Final Bronze Age and to understand the implication of the changes, occurred at the beginning of the second millennium B.C., in the neighboring societies.

Marco Madella, Ajithprasad P, Andrea Luca Balbo, Francesc Cecilia, Charusmitha Gadekar, Juan Jose Garcia Granero, Carla Lancelotti, Jose Luis Mateos, Bernardo Rondelli, Rajesh SV
Recent excavations in North Gujarat: the NoGAP project 2009, 2010 and 2011 field-seasons

The NoGAP project, a collaborative project between the IMF-CSIC and the MS University of Baroda, aims at exploring socio-ecological dynamics in North Gujarat during the Holocene.

Within this framework, the NoGAP team has carried out a series of excavations of selected sites since 2009 to revisit the ontological characterization of the archaeological patterns in this area.

With this work we propose to overcome the use of terms like “Microlithic”, “Mesolithic” or “Anarta”, presently more a source of bias than keys for our understanding of the past. We prefer to consider a socio-ecological perspective, assuming the manifold systemic interdependence between ecological and social processes. The understanding of different patterns of resource exploitation and land use during the Holocene is an open issue within Indian archaeology in North Gujarat. The archaeological record has often been interpreted on the basis of material culture and thus associated to different mobility strategies and socio-economic behaviours (e.g. domestication versus hunter-gathering). Indeed, if the presence of pottery within the archaeological record has often been associated with domestication and sedentarism (agro-pastoralism), the presence of microliths has often been interpreted as the residue of activities of hunter-gatherers groups. However, the mere presence of these artefacts without further studies on the subsistence strategies is not enough to define the behaviour of the group that produced and/or used them.

This paper presents the preliminary results of the excavations carried out at Loteshwar, Datrana, and Vaharvo Timbo. During the fieldwork extensive sampling for archaeobotanical macro- and micro-remains, geoarchaeological and zooarchaeological data has been carried out. The data proceeding from the analysis of the sampled material is giving the possibility to define a) site formation processes, b) subsistence strategies, c) resource exploitation and it can inform more precisely on the “interactions” between groups of hunter-gatherers and agro-pastoralists.

Qasid H. Mallah

The Archaeology of the Lost Hakra River System in the Thar Desert of Sindh, Pakistan

The now dry river system which once flowed parallel to the Indus river system has been referred by many names, including the Saraswati-Ghaggar-Hakra-Nara River. The researchers have different thoughts about its passage, nature of flow and have disagreement about the causes of complete desiccation. Hence, the present investigation avoids the question of why and how this river died but emphasizes on the archaeological perspective of the region through investigating in and around the traces of ancient drainage system. A large number of settlements have been already recorded in the upper reaches known as Cholistan. Nevertheless, only recently the lower reaches have been explored where it enters in the Thar Desert of Sindh Pakistan. This region demarcates the western edges of the greater desert of South Asia. Several kilometres long, two to three meters deep and several meters wide courses; some filled with water (now brackish) and others dried; lakes filled with water (now brackish) and dried; all geomorphological features located within high sand dunes and outlining the river catchment area remained major focus of present survey. At least 75 sites were recorded and many more will be added as research progresses; among which, three are associated with Mesolithic period; 10 with Hakra 05

Kot Dijian and 21 sites were related with the Mature Indus period. The remaining number of settlements which is associated with Late Indus period to recent historic times is excluded from this paper. These discoveries have begun to shed new light on the settlement patterns of human communities along this river system. The presentation conveys detail about developmental phases of the culture i.e. Mesolithic to Indus period (8000 BCE to 1900 BCE). The initial review of results will be based on the essential aspects such as (a) preview of settlement patterns, (b) mobility and resource exploitation and (c) cultural complexity in chronological sequence. Most importantly, this presentation would explain how the people of Hakra system interacted with those who living on Indus river system and in further regions of Cholistan and Harappa in North and settlements of Gujarat in Southeast and the settlements in Baluchistan and Persian Gulf.

Richard H. Meadow & Ajita K. Patel

The 2200 calBC Abrupt Climatic Event and the Archaeology of NW South Asia

A ca. 4.2kya (ca. 2200 calBC) abrupt climatic event is attested in proxy records from localities across the world. The proposal that this event severely affected ancient civilizations has established a research agenda throughout Eurasia for the past 2 decades, with investigations in some areas leading to a refinement in our understanding of cultural responses to rapid climatic change. One region that remains intractable as far as our understanding of human settlement systems and their relations to changing climate, weather, habitats, and river regimes is that of NW South Asia, which is characterized by a scarcity of high quality data, both environmental and cultural. For example, the period of the Indus Civilization, which includes the 4.2kya event, is rather poorly understood in detail. From its first recognition in the 1920s, it has often been conceptualized as a monolith both spatially and temporally, although we now know that it was no such thing. Instead it was characterized by marked regional variability as well as by important changes through time. These are well attested where there have been excavations that have stressed the importance of radiocarbon dating the remains of short-lived organics from secure archaeological contexts. At most ancient settlements in the region where there are long occupational sequences, it is increasingly clear that past excavations overwhelmingly recovered remains from ca. 4.2 and 3.9kya and that relatively little is known about the first 3–4 centuries of what was a dynamic 700 year regionally differentiated cultural phenomenon. Because little attention has been paid to change in material culture during the period of the Indus Civilization, it has been difficult to break down the results of settlement surveys into when during the ca. 4.6–3.9kya period a site was occupied. As a result, it is impossible to monitor changing settlement patterns over time and thus to evaluate the effects of the 4.2kya climatic event on the contemporary peoples of NW South Asia. Excavations at sites that have focused on temporal detail suggest that there were significant changes beginning at that time, possibly with habitat tracking into the better-buffered areas from environmentally marginal zones.

Michael W. Meister, Luca M. Olivieri & Abdul Samad

Gumbat Balo-Khale (Swat): Architectural Analysis, Conservation, and Excavation (2011)

The Buddhist shrine of Gumbat-Balo Khale in the tributary valley of Kandak, is one of the most interesting and best preserved ancient monuments of the Swat valley. Usually described as a Vihara, it was first visited and documented by Aurel Stein (1926), Evert Barger and Ph. Wright (1938), and again studied in the 1960s by D. Faccenna. Under the ACT project approved in 2010 by the Pakistan-Italian Debt Swap Program Commission, a comprehensive program of study, conservation, and protection of the site was launched in February 2011. From February to June, ACT, in collaboration with the Pakistan Army, carried out preliminary conservation of the Balo-Khale Gumbat. Both physical and photographic reconstructions help clarify this monument's relation to chapels and possibly relic shrines in Swat and Gandhara.

A reevaluation of the scholarly documentation and position of Balo-Khale Gumbat in relation to all architectural traditions in the northwest regions of Pakistan was presented in "At the Foothills of the Hindukush: Art and Archaeology of the Swat Valley, Pakistan," a symposium organized at Drexel University, Philadelphia, in May 2011. Further excavations aimed at locating stupa remains and monasteries around this shrine will be launched in November 2011, in collaboration with Hazara University Department of Archaeology, School of Cultural Heritage and Creative Technologies.

New data concerning structural phases, architectural features, and chronology (including C14 analysis of ancient wooden architectural parts) can bring new light to one of the most significant monuments of Buddhist Swat and will be summarized in this report.

Gudrun Melzer

Disease-eradicating deities in Eastern Indian Art

Different types of disease-eradicating deities appear all of a sudden during the 11th century in Eastern Indian Buddhist and Hindu Art. Their meaning is clearly conveyed to the beholder through the iconography. In the presentation the iconography of these deities will be discussed in a wider context, also including some lesser known forms.

Gerd J.R. Mevissen

The lost Śrīya temple of Pātharghā (Bihar)

Near the banks of the Ga'g north-east of Kahalgaon in the Bhagalpur district of Bihar, a short distance to the east of Valēśvarsthān or old Pātharghā, and to the west of Antichak (Vikramaśilī), in a secluded temple right in the middle of a bamboo grove dedicated to the goddess Āsīvarī near the village of Oriyap (Oriup), two pillar-like stone fragments are presently seen flanking an image of Mañjuśrī from the Pāla period. Both fragments, hitherto unnoticed, show several seated figures of the solar Ādityas in vertical arrangement, implying that they once served as *dvārasīkhas* or door jambs for a temple of the Sun-god Śrīya, now lost.

In order to put the fragments into a wider perspective, the paper will survey Śrīya temples from northern India that show *dvārasīkhas* adorned with Āditya figures. It will also discuss a large fine sculpture of Śrīya presently kept in a nearby temple at Valēśvarsthān as the possible cult image of a former Śrīya temple at Pātharghā.

Heidi J. Miller

Ceramic Continuity and Change from the Urban to the Post-Urban Phases at the site of Chanhu-daro, Sindh

The site of Chanhu-daro in the Indus Valley (c. 2600-1700 BC) was extensively excavated by E.J.H. Mackay (1935-36) whose work revealed an urban phase (Harappan) craft production center followed by a post-urban occupation, referred to as the Jhukar culture. The material collected by Mackay includes the largest assemblage of Jhukar material found to date. My on-going research re-analyzes the materials Mackay collected (as well as his archived records) in light of recent studies of the Harappan Civilization.

The relationship between the Harappan and the Jhukar has been debated for decades, and in the 1970s M.R. Mughal first suggested that the later, post-urban material culture was a pottery style that essentially continued the Harappan ceramic tradition. A close study of the ceramic remains from Chanhu-daro reveals that while there is some continuity in formal attributes, there are striking changes: vessel forms that disappear while others evolve, a shift in manufacturing technology, and a conspicuous change in surface decoration with different paint colors used and a more highly stylized motif repertoire.

This poster will present primary data illustrating shared vessel forms and features between the ceramic assemblages of the Harappan and Jhukar occupations at the site. Common formal attributes and some examples of possibly new developed forms will be presented as well as the formal differences between the two assemblages. The remarkable change in painting styles will be well illustrated and it will be argued that while the data does suggest a degree of continuity between the two major occupation phases at the site, the significant changes documented may be linked with the changing nature of the urban structure and the new elite needs that were created as the urban superstructure fell apart.

Ashoka K. Mishra

Leelar: A Megalithic Iron Smelting Centre

Megalithic (Greek origin, *megas*, 'large'; *lithos* 'stone') builders in Chhattisgarh (17°46'N-24°05'N and 80°15'E-84°20'E) have been mainly rice cultivators, iron users with Black-and-Red Ware tradition. J.B. Beglare (1871-74) subsequently M.G. Dixit (1956-57) explored 100 and 500 Megaliths respectively in Durg District of Chhattisgarh. They are *Menhir* Megalith (Standing Stone both singly and in alignments) in East-West orientation,

albeit in South Asia, they are usually North-South oriented. Locally famous as *Satee Pillar* (Women used to immolate themselves on the funeral pyre of the dead husbands). Leelar (20°30'40"N; 81°40'E) in Dhamtari district emerged from erstwhile Durg district is a habitational site and 2 km away from it is Arod (20°30'34"N; 81°40'11"E), burial site in the same vicinity. Geologically this region is underneath Cuddaph and Dharwar sediment of Cambrian period having largest hematite iron (Fe₂O₃) ore deposit (60 to 90%) of the world. The tropical red and yellow laterite soil (Al₂(OH)₄ SiO₅.Fe₂O₃.Al₂O₄) on the top surface developed in *situ* by laterization during Pleistocene phase. The British records confirm local iron extraction whose antiquity goes back to *circa* 1000 B.C. by C¹⁴ dating.

Leelar was an iron smelting center during Megalithic time revealed by iron objects and heaps of iron slag on the surface of the maund, albeit no furnace is reported. The chemical analysis of slag and metalographic study of iron objects is a new discovery of the area confirming the (1) Ore-slag-metal correlation of the area; (2) High %age of iron ore in slag confirm the technique of iron smelting was in rudimentary form; (3) Unintentional carburiation by increasing ratio of charcoal fuel to ore in the iron by prolong heating above 900°C. (4) What was local source of charcoal? (5) How they maintain the ration of CO:CO₂ in their furnace by 4:1, because, if the ratio is changed then reduced iron (Fe) will reoxidise into hematite (Fe₂O₃), however the temperature of the furnace may increase to any degree (6) What was the optimal temperature of the furnace?

R. K. Mohanty, Monica L. Smith, P. P. Joglekar, Tilok Thakuria & Tosabanta Padhan
Situating Sisupalgarh in Time and Space: The Landscape of Early Historic Cities in Eastern Odisha

Sisupalgarh, Radhanagar and Jaugada are Early Historic urban centres in Odisha (Eastern India). Investigations at these sites have revealed systematic urban layouts and fortifications, residential structures, and impressive household objects. The three cities are separated by 80 to 100 km and are located on the major rivers or their tributaries with forest on one side and fertile alluvial soil on the other side stretching to the Bay of Bengal. These environments provided resources for the growth and sustenance of these urban centers through the exploitation of forest products, agricultural products, and marine resources.

Recent fieldwork at rural settlements in Eastern Odisha has provided additional information about the interactions that these cities had with their rural surroundings, indicating not only a strong economic integration but also the cultural integration of the coastal region once known as Kalinga. From 2010-12, a team from Deccan College has undertaken investigations of regional settlements to bracket both the spatial and chronological developments of the Early Historic urban phase.

The chronological portion of the study has focused on a settlement of the pre-urban period (Golbai Sasan) and a settlement of the post-urban period (the port site of Manikapatana). At Golbai Sasan, investigations confirmed the presence of 7.5 meter cultural strata that included a substantial Neolithic and Chalcolithic deposit along with subsequent occupation. At Manikapatana, excavations and intensive survey indicate that the site was occupied from the 5-6th century AD until the 17-18th century AD with material remains suggesting contact with Southeast Asia, China, Ceylon and South India.

The spatial portion of the study is currently underway and focuses on the remarkable recent discovery of two fortified settlements that appear to be smaller exact copies of Sisupalgarh. The site of Talapada, located 60 km southwest of Bhubaneswar city, is marked by a square fortification that measures 550 meters on each side with four gateways. Another similar fortified site was discovered near Berhampur town, located 40 km south of the Early Historic city of Jaugada in southeastern Odisha. These newly-discovered sites, located at strategic distances from the largest urban settlements, provide the opportunity for examining the cultural and political dynamics of the Early Historic period in the region.

Sara Mondini

Political power, role of Sufism and fabric of society through the eyes of the architectural patronage in Deccan

The geographical region of the Deccan, in South-Central India, for long time was only marginally interested by in depth surveys and multidisciplinary investigations and only during the last years has systematically attracted the attention of the international community. The results of new accurate analysis, together with the attentive study of the sources, attested how, since the beginning of the Bahmani sovereignty (1347-1527), a new strong relation between the religious authority and the political power had a leading role in conditioning and characterizing the Islamic presence in the region. In the Muslim Deccan, in fact, after the new independence a "new" elite of Sufis – saints, sheikhs and major disciples – emerged as crucial interlocutor for the court and as essential legitimator for the sovereigns. This articulated relation, apparently confirmed also in

the location of the monuments patronized in the first Bahmani capital, Gulbarga, seems to accompany the whole history of the Deccan until the Mughal annexation in 1636 by Aurangzeb. Besides the leading Sufi role, between the XIV and XVI century the articulated socio-political composition of the courts – local substrate, Central Asian and African immigrants – deeply influenced the whole cultural evolution of Deccan, the court tendencies and was the cause of the power struggles that often brought the Deccani sultanates to the collapse.

Intent of the paper is to demonstrate that the main political, religious and social dynamics in some ways are depicted by the artistic production, and to trace them out through the peculiarities of the architectures patronized in the area, seeing how emblematic monuments have been able to artistically resume and represented the social, religious and political realities.

Kathleen D. Morrison

Agrarian Transitions in Iron Age Southern India: Social and Environmental Implications

Although agriculture began relatively late in southern India, agricultural strategies in this region have undergone several periods of dramatic change. In this paper I focus on early transitions to intensive agriculture, beginning in the Iron Age, and consider some of the social and environmental consequences of intensive farming. The paper reports on new data from four seasons of excavation at the site of Kadebakele, in northern Karnataka, including information from residential contexts and middens and analyses of pollen, plant macroremains, phytoliths, and starch grains. Preliminary results suggest that the Iron Age saw significant transformations in agricultural strategies, including a new focus on irrigation and shifts in cropping regimes. Such changes are clearly related to changing patterns of settlement, with large aggregated settlements becoming common across the semi-arid interior. The environmental consequences of agricultural and other land use changes included erosion of the ubiquitous granitic hill slopes of the region, as previously reported at this meeting. Here I contextualize this geomorphological shift in terms of its consequences for farmers from the Iron Age onward.

Benjamin Mutin, R. Abdurazzokov, R. Besenval & H.-P. Francfort

Resuming joint fieldwork at Sarazm (Tajikistan): Preliminary results of the 2011 Tajik-French field season

Sarazm is an archaeological site located in northwestern Tajikistan in the Zeravshan Valley near the city of Penjikent and approximately 45 km east of Samarkand in Uzbekistan. The site was discovered in 1976 and excavations were conducted by Tajik, French, and American archaeologists beginning in 1977. The results have shown that Sarazm was occupied mostly during the fourth and third millennia BC and it was at that time an important place that attracted people from several major cultural spheres located over hundreds of kilometers apart in Pakistan, Iran, southern Turkmenistan, near the Aral Sea, and in the Steppes of Central Asia. The site, with vestiges spread over hundreds of meters, has been classified as a U.N.E.S.C.O. World Heritage site in July 2010.

The last joint Tajik-French excavations at Sarazm ended in the early 1990s. Renewed efforts began in the fall 2011 as a collaboration between the Academy of Sciences of Tajikistan and the French Archaeological Mission in Central Asia (M.A.F.A.C.: C.N.R.S. and French Ministry of Foreign Affairs). This paper will provide an overview of the previous discoveries made at Sarazm including a presentation of the chronology, the local culture, and the outside cultural influences. In addition, problematic of the new Tajik-French Project and preliminary results of the 2011 field season will be presented.

Eva Myrdal

New focus on the settlement material from Rang Mahal, India

Museum collections throughout the world all have their specific histories of acquisition and subsequent management. This paper presents some preliminary data related to the renewed study of the Early Historic archaeological material from Rang Mahal, Rajasthan, India. It came to Sweden as a result of the Swedish Archaeological Expedition to India 1952-1954, led by the Swedish archaeologist Dr. Hanna Rydh. The material is at present stored in the Museum of Far Eastern Antiquities (MFEA) in Stockholm. The Lund University Historical Museum (LUHM), Lund, manages the surface finds collected by the project within a radius of about 30 km to Rang Mahal (Harappan to Early Historic). Apart from a temporary exhibition of the surface finds at the

LUHM in 1954 the material has never been put on display and after publication no research on the material was carried out.

The collection consists of household related artifacts indicating a rural settlement dated on the basis of coins and 14C analyses to between 200 and 600 AD. The painted pottery, the finds of portable art objects, the coins and the personal ornaments, the agricultural implements and the devices related to pottery production, the animal bones and the botanical macrofossils all form part of a village history which can be delineated in a human perspective of everyday life.

In contrast to exhibitions in Sweden related to other Asian regions the everyday life and rural perspectives are lacking in presentations of pre-colonial South Asia. With the present plans of integrating material from Rang Mahal in the South Asian gallery at MFEA follows a need of understanding the settlement in its contemporary setting, taking up some of the questions left open by Dr. Rydh. Material that is in focus of this study is the painted pottery, the moulded pottery and the pottery moulds, the coins and the anthropomorphic and zoomorphic stone and terracotta objects, an inscribed clay tablet and a clay seal.

Sayantani Neogi & Charles French

Geographical investigations of Indus period settlements in Northwestern India (Alamgirpur, Masudpur & Burj)

This poster presents results of the geoarchaeological investigations of soil and sediment sequences associated with a series of pre-urban and post urban phase Indus sites in northwest India that have occupation dating between c. 2800 and 1500 BC: This period is particularly significant because it marked by the rise and decline of the urban phase of the Indus Civilisation had declined and its major cities were abandoned, and it was not until c. 300 B.C that large urban centres re-emerged in the Ganges region. This study provides new insights into site formation processes and associated landscapes. It thereby helps to understand human impact on this landscape, human responses to environmental change, and the process of cultural change.

Micromorphology from Alamgirpur (in Uttar Pradesh) has revealed evidence of a lengthy accumulation history (c. 600 years), marked by the presence of several compacted floors, settlement-derived debris, and periods of abandonment. Landscape analysis has also shown that many sites in the surrounding area were established on terraces and levees related to former floodplains, which are no longer affected by seasonal inundation and alluvial deposition.

Landscape studies around two settlements at Masudpur (in Haryana) indicate that there is up to 2m of alluvial aggradation around the margins of the archaeological mounds. At some places these are directly accumulating on sandy channel fills. Towards the north of the mound of Sampolia Khera there appears to be *in situ* palaeosol survival, with alluvial accumulation intermixed with local Indus pottery, which is probably indicative of post-urban alluviation and cultivation practices.

Profile observations from Burj (in Haryana) shows that the underlying drift geology is a pale yellow calcitic silt and very fine sand with calcitic nodules. The horizon above has accumulated through low velocity flood action but certainly has become stabilised since as a 'B' horizon with the development of a more organic upper (A) horizon of silt above. This represents a weakly developed palaeosol and old land surface.

Atsushi Noguchi, Q.H.Mallah, Nilofer Shaikh, G.M.Veesar, S.Bhanbhro & H.Kondo

Recent Research on Paleolithic sites in Rohri Hills and Thar Desert of Sindh, Pakistan and its implication for Modern Human Dispersal to South Asia

Pakistan is located on the western gate to South Asia. All population from West to South Asia must pass through Pakistan both coastal and inland route. With recent achievement of genetic anthropology, South Asia is focused on the cradle of Modern human in Eurasia. Thus dispersal route of Modern human from Africa to South Asia become major subject in recent Palaeolithic studies. However there is less information between Iran and India for the moment.

Since 2000, the Department of Archaeology, Shah Abdul Latif University, Khairpur continues independent investigation in Rohri Hills subsequently to Italo-Pakistani joint mission in 1990s, and extends research field into Thar Desert region both south and east of the hills. We have recorded many Upper Paleolithic workshops and localities in Rohri hills and Thar Desert region. Up to now, only a few sites are excavated intensively. However we have collected a number of components which including backed blade, burin, end scraper and other Upper Palaeolithic types based on blade technique. Those components will be compared with known other Pakistani Upper Palaeolithic components (e.g. Sanghao Cave and Riwat 55), and neighbours.

Similarity or differences between *Aurignacian* components/ or South Indian Upper Palaeolithic components must be examined.

Toshiki Osada

RIHN's Indus Project 2007-2012

Research Institute for Humanity and Nature (RIHN) has found in 2001 to make an interdisciplinary research on environmental problems in global perspectives. The project on “environmental changes and the Indus civilization”, which was called Indus project, was to study a focus on the decline of Indus civilization. The organization of Indus project was consist of five groups: 1) Palaeo- environmental research group (PERG), 2) Material cultural research group (MCRG), 3) Subsistence system research group (SSRG), 4) Inherited culture research group (ICRG), and 5) DNA research group(DNARG). PERG investigated (a) the palaeo-channel of the Ghaggar-Hakra; (b) the palaeo-coastline in Gujarat; (c) climate change; (d) palaeo-seismological patterns; MCRG reconstructed the Indus societies and cultures through excavated at two sites, Kanmer (Gujarat) and Farmana (Haryana); SSRG reconstructed the subsistence system of the Indus civilization using archaeo- and ethno-botanical methods; ICRG reconstructed the Indus societies and cultures using linguistic methods. In this paper Osada, the project leader of Indus project, will present on the Indus project as a whole.

Lalit Pandey

Archaeological evidence of metallurgical activities in Rajasthan

Since the pre-historic times the various human societies have been evolving and using different kinds of technologies according to their needs and requirements. Thus, it can be inferred that there exists a natural relationship between technology and socio-cultural phenomena, in archeological, historic and contemporary contexts.

The present paper deals with the Southeast Rajasthan in terms of metallurgy. The Aravalli formations of the region have a major role in it because the Aravalli formations are rich in metallic as well as non-metallic minerals. The schists, which have been found in the region, contain five crystals of Garnet, Mica, Copper, Lead, Zinc, Silver, Iron, Manganese and Beryl. Out of these, Copper, Iron and Zinc attracted the man of protohistoric and historic cultures. The exploration of Copper in southeast Rajasthan has a long history which goes back to the prehistoric times. It can be said that Copper played the role of magnet in the process of development of early cultures. Geo-archaeologists have studied the possibilities of old Copper working sites of the region and their studies are quite rewarding. After the investigation, they expressed their opinion that most of the Copper working activities had ceased towards the beginning of nineteenth century (Majumdar, G.G. and Rajaguru, 1962-63, p.31-33). Likewise the Copper, Zinc is also found in abundance in Southeast Rajasthan.

In addition to this, southeast Rajasthan also attracted the man of Iron age. There are numerous examples which prove the Iron working in the past. For example, in 1873 there was a report of 30 pre-industrial furnaces working in Alwar area which also has old mines (Chakraborti, 1992, pp.26-28).

The explorations and excavations of various archaeologist including the author provide the information that Ahar, Balaqthal, Aguncha, Bhoion-ki-Panc-holi, Iswal and Nathrara-ki-Pal were the major centres of iron working in the past. The evidence, which have been recovered during the course of exploration and excavation, prove that this region had been playing an important role in the economy. It is very interesting to that certain tribes of the region are still using these practices in their daily life.

Danika Parikh & Cameron A. Petrie

Urban-rural interactions and Indus ceramic production in northwest India

There has been an increase in the intensity of research on the Indus Civilisation in northwest India, yet the nature of ceramic production and distribution is yet to be characterised. It has been noted that there is a distinctive regional ceramic style, known as Sothi-Siswal, but there is no formal typology of this material and little understanding as to how they are similar or different to the better-known classic Indus ceramic types. This paper presents an analysis of the ceramic vessels excavated from the sites of Sampolia Khera and Bhimwala Jodha. These village sites, excavated by the *Land, Water, Settlement Project* lie in the hinterland of the Indus city of Rakhigarhi. Characterising the nature of these locally produced ceramic types will enable a greater

understanding of the dynamic between the urban and rural sites, and the distribution of classic and local Indus types. In particular, the differences in surface treatments and decorative motifs involving painting and incision will be examined in terms of iconography and the negotiation and reproduction of identity. The results have important implications in terms of rural social identity and integration within the greater Indus.

Edith Parlier-Renault

Mango-tree and mangoes in Indian art

Mango-trees and mangoes are rather well-known symbols of welfare and fertility, but also of pleasure and love, as shown by mythological texts and by sculptures. The mango tree can appear as a tree of paradise, and stands thus in contrast to “wisdom trees” such as the pipal or the banyan. The communication will try to analyse how this iconological sign has been used to give a specific meaning to certain scenes in various religious contexts.

Ajita K. Patel & Richard H Meadow

The domestication and spread of bovines in southern Asia: the zooarchaeology of cattle and water buffalo in light of recent genetic evidence

Since their domestication in the 6th and 3rd millennium calBC, respectively, zebu cattle and water buffalo have been the two most important domestic bovines in South, Southeast, and East Asia and integral to the agricultural economies of those regions. Zooarchaeological evidence has shown that zebu (*Bos indicus*) went through multiple local domestication events, a scenario supported by subsequent genetic research. The same is true for water buffalo (*Bubalus bubalis*) for which genetic evidence indicates that at least two wild populations were involved in the domestication process. The combination of archaeofaunal and genetic research suggests a complicated pattern of dispersals quite possibly from South into SE and East Asia. Study of the Chinese water buffalo remains dating from the Neolithic through the Bronze Age indicate that those animals were never domesticated and were hunted to extinction to be replaced most likely by South Asian domestic forms at a later time period. Likewise, zebu cattle were dispersed into southern China from South and SE Asia, perhaps as late as the mid-1st millennium BC. This paper focuses on the current evidence for domestication and dispersal of these two bovines, which has implications for understanding interactions between human populations across the broad sweep of southern Asia.

Cameron A. Petrie & Ravindra Nath Singh

Living in the hinterland of Rakhigarhi: the Rakhigarhi Hinterland Survey and excavations at Sampolia Khera (MSD I) & Bhimwada Jodha (MSD VII).

Rakhigarhi was the largest, and potentially the most prominent Indus site in northwest India. However, we have a relatively limited understanding of the relationship between Rakhigarhi and its hinterland during periods of urban growth, consolidation and decline. In order to establish the geographical context of settlement sites in the immediate hinterland of Rakhigarhi, the *Land, Water and Settlement Project* carried out a systematic village-to-village survey of the area within a 15 km radius of the site in August-September 2009: *Rakhigarhi Hinterland Survey*. To ensure good chronological control this survey was accompanied by excavations at two village settlement sites that lie roughly 12-15 km away from Rakhigarhi: Masudpur I (Sampolia Khera) and Masudpur VII (Bhimwada Jodha). This paper will review the results of the *Rakhigarhi Hinterland Survey* and introduce the excavations at Masudpur VII, which was occupied in the pre-urban, urban and post-urban phases, and Masudpur I, which was occupied in the urban and post-urban phases. This paper will be complemented by specialist studies on the pottery (Parikh), archaeobotany (Bates) and geoarchaeology (Neogi and French) at these two settlements.

Oliver Pryce

TBA

Teresa P. Raczek, Namita Sugandhi, Prabodh Shirvalkar & Lalit Pandey
Recent Research at Chatrikhera

The site of Chatrikhera in Rajsamand District, Rajasthan, has a long occupational sequence stretching from approximately 3000 BC to the present day. Located near the Banas River, the site was one of many agro-pastoral settlements that dotted the Mewar Plain during the Ahar-Banas and later Iron Age, Early Historic, and Medieval periods. Preliminary research at the site in 2009 indicated that the initial Chalcolithic population was smaller than that of nearby Gilund. However, the Iron Age and Early Historic settlement appears to be much larger than that of Gilund, indicating the possibility of a population shift after the end of the Chalcolithic. Other long-term regional processes are evident at the site including shifts in political, economic, and social practices and processes.

This paper will present the results of the winter 2011-2012 research season conducted at Chatrikhera by the joint team from the Sahitya Sansthan Institute of Rajasthan Studies, Deccan College Postgraduate and Research Institute, Indiana University, Northwest, and Kennesaw State University. The goals of the research season include a finer assessment of the occupational sequence, identification of exchange networks, and identification of the presence of craft production activities. In addition, the research team will report on the condition of the mound, as only a small portion remains intact. We will report on our efforts to engage local residents in site preservation activities.

Ellen M. Raven
The Emperor's New Clothes

Digital imagery offers increased opportunities to identify details in the clothing, ornaments and hairstyles of the Gupta kings portrayed on their gold and copper coins between circa AD 300 and 550. Not surprisingly, these miniatures in metal reveal a surprising diversity. Although artistic license may well have resulted in minor differences, overall the diversity is not random. The nature of the king's outfit relates directly to the entire coin design (the 'type') of which the king's image is a pivotal part. Samudragupta offering at an altar, e.g. is dressed differently from when he is hunting a tiger. The entire corpus of Gupta coins reveals changes in royal apparel through time as well. This paper then also investigates the extent to which royal clothing, ornaments and hairstyles in Gupta coins seem to reflect deliberate choices in the presentation of individual kings on the one hand and in the representation of Gupta kingship on the other.

Gethin Rees
Buddhism and Donation: Rock-cut Monasteries of the Western Ghats

This presentation examines interaction between Buddhist monastic communities and wider society in Early Historic South Asia, specifically the influence of donation on the rock-cut monasteries of the Western Ghats. Scholarship has focused on monasteries that accommodated large numbers of monks and incorporated ostentatious architecture such as sculptures, inscriptions and architectural features. These monasteries have been prioritised for study over smaller rock-cut monasteries that accommodated fewer monks and nuns, and were plain in design. This presentation examines the role that donation played in the development of this diverse monastic architecture, drawing on texts, inscriptions, and the comparative analysis of archaeological evidence from rock-cut monasteries and their landscape context. Data from surveys of over fifty rock-cut monasteries conducted by the author provide evidence of the resources that were required to cut monasteries. These data will be examined in relation to topography and settlement archaeology in a Geographical Information System with a focus on the relationship between rock-cut monasteries, urban centres, trade routes and ports. Through this analysis, donations are shown to have had an important impact on the distribution of monastic architecture. The presentation re-evaluates previous emphasis on the importance of trade that passed through the Western Ghats and provides a framework for examining Buddhist monasteries located throughout South Asia. The introduction

of a spatial approach allows interpretation to go beyond the study of inscriptions and texts to examine religious interaction as a process.

Elke Rogersdotter

Ruined Places: on order and irregularity in an ancient urban environment

Irrespective of time or space, every separate, social structure consists of certain common features, on the basis of which it becomes both distinguishable and specific. The Bronze Age Indus Valley site of Mohenjo-daro has for example traditionally been interpreted as a rather well-arranged urban settlement whose inhabitants probably enjoyed relatively comfortable life-styles, reflected in its overall, planned outline, structurally well-defined houses and the like. However, this starting point is not without problems, since all patterns of society necessarily must include dimensions that as well are inconsistent with the 'official'; that do not fit in or, more sharply expressed, are not allowed (otherwise, it would be about rather static and conform formations). It is of course difficult to conclude what may have been regarded as allowed or not in a particular, ancient settlement. Yet, this paper aims to explore a way to consider and problemize what is apparently ordered and arranged. It is based on selected results from a spatial analysis of finds from Mohenjo-daro that were traditionally given a game-related explanation. The results indicate that the objects, rather than randomly scattered, display repetitive features in their spatial distribution. By that, they form what can be described as localities or places. Although of repetitive content, these places also stand out as untied though, that is, they seem not connected to for example specific areas or particular types of structures. The 'place' as place could thus likewise be called into question, which will be further illustrated by comparing the places with game-related localities of a different, more permanent character at the historical site of Vijayanagara. Based on these ambiguous qualities and following the reasoning by the sociologist Robert E. Park concerning the social function of unofficial or 'natural' areas, they can thereby be discussed in terms of non-sanctioned phenomena. With this line of thought, questions regarding spatial use can be raised and established ideas of structural divisions at the settlement reflected upon.

Jean-François Salles & Marie-Françoise Boussac

Recent archaeological research at Mahasthan (Bangladesh): towards a re-appraisal of the history of the city

The history of the ancient city of Pundranagara and its environment, the Varendra, have been the subject of many rich and detailed studies by Bangladeshi and Indian scholars: the sources were some texts, few in number, some inscriptions, also rare, and archaeological data, scattered because little published and understood. The most recent synthesis (D.K. Chakrabarti 1992 / + 2nd edition) presented a state of affairs without much novelty compared to the pioneering works of P.C. Sen or N. Ahmed.

Nearly twenty years of Franco-Bangladeshi research on this site lead to re-evaluate the data hitherto accepted, as the present communication will summarize.

The chronological landmarks of the site are now better known thanks to stratigraphy and radiocarbon dating: the foundation of the site can be dated to the end of the fourth century BC, and therefore we can better understand now this ex nihilo creation. The main stages of its history until the thirteenth century are better assured, alternating brilliant phases (post-Mauryan and Pala-Sena periods) and other lesser known (Gupta and medieval periods) - at least in the current state of excavations which cover only a small part of site. Finds and the rich architectural and material unearthed shed light on different aspects of the life of the ancient city and of its inhabitants. Furthermore, archeology has revealed some unexpected events (armed conflict, earthquake[s?], etc.)-which raises new questions.

But the historical and cultural evolution of Pundranagara, backed by very few written sources, must be inserted, in order to be better understood, in the regional context of North Bengal / Varendra and, more broadly, in the relations of the region with its neighbors. Archaeological interactions reveal multiple relations and trade, business, cultural and religious, in a complex and changing political context, and this is a preliminary attempt to synthesize it that is presented here.

Aurélie Samuel

The “Mata ni Pachedi” of the Krishnâ Riboud collection

Among the very fine textiles of India, the unique temple hangings of Gujarat, sometimes called « The Kalamkari of Gujarat », have often been overlooked in the history on Indian textiles. These pieces are locally known as *Mata-ni-Pachedi* or *Matano Candarvo*. They are extremely different from the other narrative textiles from Western India.

These textiles are made of cotton, painted and block-printed in accordance to a complex traditional technique that demands a very specific preparatory work. The cotton is soaked in several successive preparations, a mix of natural dyes and elements of animal origin.

They are the works of the Vaghri (or Vaghari), a formerly nomadic rural community now settled in central Gujarat, around Ahmedabad, who use them for their specific religious rituals. These imposing textiles are used as canopies over the image of the mother Goddess. The central character is *Mata*, the Goddess seated on a throne or an animal, brandishing weapons. This terrible form is obviously related to the theme of Durga Mahisasura. During the Vaghri religious ceremonies, the clothes are used to delimit a temporary shrine (a remnant of their nomadic past). In the space drawn by the clothes, worshipers of the Goddess offer sacrifices as thanks for the accomplishment of a vow, generally the removal of some evil, such as a dire disease.

Krishnâ Riboud's very rich collection (numbering about 4 000 textiles) holds five extremely telling Vaghri painted hangings, all in a very fine state of conservation.

The goal of this article is to bring back into the light, through the pieces of Krishnâ Riboud's collection now kept at the Musée Guimet, to identify the historical, cultural and social development of these works and to show the creative process that led to the crafting of these very special artefacts.

Ilaria E. Scerrato, Giuseppe Morganti, Fabio Colombo, Danilo Rosati, Andrea Benassi

The Cultural Heritage in Baltistan (Pakistan): a multi-disciplinary research.

The ISIAO scientific activity within the Social Economic Environmental Development (SEED) Project, launched by EV-K2-CNR Committee, is to survey and document the cultural heritage present in the valleys of the Central Karakorum National Park region and the Buffer Zone in Baltistan and identify the strategies required to promote it. The research has focused on some important subjects in two valleys, the Upper Braldu Valley and the Basha Valley:

- The project activity comprises the identification of the architectural typologies, preservation and sustainable restoration of traditional fabrics, local materials analysis and recovery, documentation of local building cultures and historical construction techniques. The study of the different groups of buildings highlights the differences and the vernacular solutions adopted in the two valleys for specific aspects. All the religious buildings have been surveyed; the most significant buildings have been assessed to include them in the rescue, conservation and restoration programme.
- The unique building techniques and interesting decorative motifs are evidence of sophisticated craft activities that have deep roots in the complex cultural history of Baltistan and continues today, ensuring the transmission of traditional knowledge. In the Braldu and Basha Valleys the artisan presence is significant: we have individuated 18 carpenters in the Braldu valley and 10 in the Basha Valley). This fact demonstrates the continuity of the important activity of carpentry and wood carving. Indeed also in the present days the role of the carpenter for the construction of any building, either religious or secular, remains central.
- The pastoral activity certainly plays an important role in the economic strategies adopted by the community relating to CKNP. The pastoral and farming practices are both the mode of production of dairy products and wool, but are also important in determining business alliances and links between villages. Furthermore, the pastoral activities and management of grazing areas play a significant role in social life. The pastoral areas are therefore interpreted, in this perspective, as an important part even if outside the villages in the social and historical process of anthropic transformation of the mountain.

Heidrun Schenk

The pottery sequence from Tissamaharama (Sri Lanka) and its chances for the Early Historical Indian Ocean trade

The final pottery sequence from Tissamaharama (Sri Lanka) spans a period of more than 1500 years. The study was focused at first on the local development of common utilitarian potteries. Comparison with material from further South Asian sites however indicates familiarities of vessel shapes and fabrication techniques even over some distance. Therefore the sequence provides a chance for a better chronological differentiation of pottery originating from the Indian subcontinent. This includes pottery usually known as "Indian Red Polished Ware".

Among the group of imported potteries, the final pottery study also revealed further chronological information on "Rouletted Ware", Wheeler types 10 and 18 and further types related thereto such as NBP.

Conclusively, the pottery sequence contributes to a better reconstruction of Indian Ocean trade. Such a reconstruction indicates alternating of trade routes and peak times and confirms an extended time range beyond the usual focus on Roman times.

Carolyn Woodford Schmidt

A Proposed Reconstruction of a Small Niche from Tapa Kalan, Hadda, Recovered in 1926 by Jules Barthoux, under the Auspices of the French Archaeological Delegation in Afghanistan, during Preliminary Excavations

The vibrant Buddhist monastic complexes at Hadda, located on the old pilgrimage and trade route connecting Bactria with Taxila, represent an extremely important link in the transmission of Buddhism to East Asia. The subject of this effort is the reconstruction of a diminutive, degraded, painted niche, dating from circa third–fourth century C. E. The niche was recovered from the Buddhist site of Tapa Kalan, Hadda, in 1926 by Jules Barthoux, and is now on permanent display in the Musée Guimet, Paris. As is often the case with the Buddhist art of Afghanistan, the niche presents evidence of a once unified combination of painting and sculpture. With its painted surfaces, it originally incorporated stucco statues of a seated Buddha and two standing Bodhisattvas. The upper back of the interior displays a painted motif composed of a pair of *erotes* or *maladharas* suspending a floral wreath above, what would have been, the head of the now missing Buddha image. Painted remains of the aureole and nimbus of the Buddha image, and the nimbuses of the two Bodhisattvas can be seen, respectively, at the back and on the sidewalls. Also on the sidewalls are painted representations of two devotees, a monk and a female, each holding a long-stemmed lotus blossom.

This unique niche is part of a research corpus made up largely of Gandharan relief and stele sculptures in schist, which are classed as visions or displays of heavenly realms. In these symmetrically ordered works, the images are presented hierarchically, focused on an image of a Buddha seated on a large lotus dais and displaying the gesture of teaching. Invariably, for sculptures in this corpus, the Buddha image is attended by a pair of Bodhisattvas, emanated by him as manifestations of his infinite compassion, and transcendent wisdom. As insightful examples of connections with East Asia, each component, or reconstructed component, of the niche, has been carefully analyzed stylistically and iconographically, demonstrating its relationship to other paintings and sculptures from Hadda, and to comparable features found in the displays or visions of paradise scenes in the research corpus.

Britta Schneider

New light on Mārīcī

From the 9th century onwards we see the Buddhist goddess Mārīcī in many forms in Bihar, Bengal, Orissa and Ladakh, and later in Nepal and Tibet. The earliest testimony for a goddess named Mārīcī is found in the Chinese translation of her Dhāra from the early 6th century.

When dealing with Buddhist iconography the major sources considered are the Niṣpannayogavalī and the Sādhnamālā, but not all representations of Mārīcī can be adequately identified by them. The fact that Mārīcī is mostly depicted driving a chariot drawn by seven pigs (rarely seven horses) led many scholars to link her with Sūrya. New sources are therefore needed.

Two so far unpublished commentaries on the Mārīcīdhāra preserved in Sanskrit and Tibetan can now be added to our sources. In addition, some more sādhanā-texts from the vast corpus of Tibetan translations which can be traced back to an Indian origin are considered.

By this study so far unnamed iconographic varieties of Mārīcī are identified and new light is shed on her character and her significance for the devotees and priests.

Tamara I. Sears

Practicing Penance in Śiva's Forest of Pines: The Mattamayūra Monastery at Ranod, c. 9th-11th centuries

A late tenth-century inscription affixed to a rare survival of a Śaiva monastery (*maḥā*) just outside the central Indian village of Ranod (Shivpuri district, M.P.) tells the following story. Once upon a time, an emissary entered the court of a king named Avantivarman carrying news of a renowned sage named Purandara. Struck with a desire for initiation, Avantivarman invited Purandara to settle in his kingdom. There Purandara-*guru* established two monasteries, one in the glorious city of Mattamayūra, and the other as a *tapovanam* at a place called Araṅṅipadra, or present-day Ranod. This inscription, when noted by other scholars, has been taken as a key source for unraveling the origins and early history of the Mattamayūra lineage of Śaiva sages, who emerged in the seventh or eighth centuries and rose to prominence as Rājagurus for many dynasties by the ninth and tenth centuries.

In this paper, I re-examine this inscription in light of my field survey of the standing architecture, both at Ranod and at other contemporary Mattamayūra monastic sites. I suggest that the inscription must be contextualized in three key ways. The first is in relationship to its own history as a material object that was produced not at an early moment in the sect's formation but at least 150-200 years after the events that it describes. The second is as a document whose primary purpose was not to record the monastery's foundation, likely in the ninth century by Purandara, but its extensive renovation five generations later by a sage named Vyomaśiva, who is praised at great length for his construction of the nearby stepwell. The third is in conjunction with the architectural history of the monastic residence and geography of the larger site. Together the evidence suggests that Ranod as a whole may have been re-imagined in the tenth century as a forested penance grove for a group of sages, who, not uncoincidentally, traced their genealogical origins back to the encounter between Śiva and Brahmā in the famed Dāruvana, or Forest of Pines.

Nilofer Shaikh

Lakhan-jo-daro, Sindh: New excavations at an urban center of the Indus Civilization

Indus valley civilization is one of the largest civilizations of the world which covers huge area of South Asia i.e. the entire length of present Pakistan and parts of India. More than 2000 settlements are recorded with several major urban centers. The largest settlements so far known are Harappa, Mohenjo Daro, Dholavira, & Ganweriwala. Recent excavation at the site of Lakhan-Jo-Daro has revealed this new site as another large urban center.

The settlement of Lakhan-Jo-Daro is located along right bank of Indus River in a industrial area of Sukkur City at Latitude 27°.43'.27" North & 68°.50'.51" East degrees longitude. Until now three major mounded areas such as western mounds, central mounds & eastern mounds; collectively all mounds encompass area more than 03kms radius. The central mounds are further divided as "A", "B", "C" & "D" mounds. These mounds have been investigated since 1988 & six excavation seasons (1994, 1996, 2000, 2006, 2008 & 2009/10) have been launched. In the course of the most recent excavation project important new features of Indus architecture & artifacts have been recovered that confirm the overall significance of the site.

This presentation will furnish an overview of the recent and most distinctive discoveries which are not only unique to this settlement but for Indus valley as well. Among those unique finds, the "T" shape tablet, a ritual spot, cluster of four huge platforms, and the human skull dumped into garbage are the main components that would open new dimensions in overall understanding of Indus civilization.

Vasant Shinde

Harappan Burial Customs in the Ghaggar Basin: A Case Study of Farmana

A few Harappan sites in the Ghaggar basin have produced the evidence of human burials, most of which in the vicinity of the habitation area. Considerably a good number of human burials have been excavated at some of the important sites such as Kalibangan, Rakhigarhi, Farmana and Sanauli. The burial site of Sanauli has Late Harappan evidence, whereas at other sites mentioned above have burials of different sub-phases of the

Mature Harappan period. Based on the evidence, it appears that the burial customs followed in the Ghaggar basin confirm to the broader Harappan tradition, however, there are some regional variations. Three types of burials are found – primary, secondary and symbolic and they orient north-south direction. One of the most significant sites in the Ghaggar basin is Farmana, where the largest Harappan necropolis has been discovered, which is spread over an area of 3 ha. In all 70 burials have been excavated at Farmana, majority of which are slightly northwest-southeast direction. The remaining of the burials are either in north-south or northeast-southwest direction. All the burials are in rectangular pits, some of which are lined with clay. On the basis of the size and nature of burial pits, their locations and quality and quantity of burials goods inside, there is an ample scope to study social and economic organizations of the Harappans at Farmana. There appears to be three different groups in Farmana and each one preferred its own tradition. A few of the burials have two skeletal remains buried at different time period; the latter one buried after carefully opening the earlier pit. It is quite likely that they were related to each other and hence buried in the same pit. The scientific Stable Isotope Analysis of the human bones from Farmana has revealed the presence of non-local female at the site. There is a possibility that in the Harappans had matrimonial alliance with their contemporaries from whom they obtained necessary resources and raw materials. The present paper deals with the results of some of the scientific analyses carried out and interpretations of the Harappan burials in the Ghaggar basin.

Prabodh Shirvalkar & Y.S. Rawat

A Problem Oriented Excavations at Kotada Bhadli in Gujarat: A small site archaeology

Large numbers of small and big sites of the Harappan period are excavated in Gujarat by various institutions. This has brought to light various facts of civilization in Gujarat, but at the same time many new problems are posed by the new data as well as by re-analyses of older material. The sites in Gujarat are always seen or interpreted in the light of migration theories and accordingly the function and nature of the sites has been identified. The major issue which has been highlight by scholars is of fortification and its function, later dates of Harappan civilization in Gujarat and sub-standard material culture compared to typical Harappan sites (?). The region of Kachchh is considered as an corridor for the migration of Early and Mature Harappan into mainland Gujarat.

The site of Kotada Bhadli, in Nakhatrana Taluka, District Bhuj, Gujarat. The site was discovered by J.P. Joshi of Archaeological Survey of India in 1962. He found three sites which were labeled as Kotada Bhadli I, II and III. Out of these site I and II are half a kilometer apart from each other whereas III is located almost 3km from Kotada Bhadli I. The site of Kotada Bhadli II has been selected for long term excavations for various purposes. The selection of small site for excavations is intentional and is appropriate to answer some of the major research problems in Gujarat Harappan as well as of Kachchh such as the use of fortification wall, the Late Mature Harappan phase in Kachchh and the contribution or the place of small sites in large Harappan economical models and its role in the regional trade network.

The paper will discuss the findings of the excavations and probable role or function of the small site based on material evidences.

Ajay K. Singh

Western Himalayas Wooden Sculptures and Stylistic Connection with the Art of Medieval Kashmir

This abstract is based on the study of some rare Buddhist wooden sculptures discovered during late nineties from a remote valley region of river Sutlej bordering western Tibet in the western Himalayas by the author. The area had been a buffer state between the Indian states of Western Himalayas and Tibet. It is known that during the time of second diffusion of Buddhism in Tibetan provinces in particular western Tibet (gNari-Khorsum) Kashmir played a key role in the process by extending full support and supplied scholars, monks and artists. Still in many old Buddhist temples of Western Tibet art works of Kashmiri artists are preserved.

Aesthetically being superb in artistry, the sculptures under investigation present a very interesting case of diffusion of an art style, that is Kashmiri, about which still not much is known. In medieval period from 8th to 10th century when Kashmir consolidated its power in Northern India, Western Himalayas, and Central Asia and established her hegemony in the region, the state of artistic tradition too achieved a high watermark. The artistic expression of Kashmir became eclectic rather more international due to intense cross cultural contacts in the North-Western peninsula which from very beginning was open to various influences from the west. During the hay days of political hegemony Kashmiri art too permeated far a field. In the making of Kashmiri art expression

elements of Gandharan, Gupta Indian, Persian, Central Asian, Chinese, Tibetan, Byzantine, Greco-Roman and folk of native valleys of Western Himalayas can be discerned

The wooden sculptures under discussion display maturity of the style and its further transition. This paper will present a study about the regional development of Kashmiri style, its extension, and various stylistic sources. Indeed, the contribution of Chamba School needs to be examined carefully for scientific evaluation of Kashmiri expression, the paramount style in the western Himalayan region. Chronologically, the material can be ascribed to a definite frame of time that is from ninth to twelfth century AD.

Dheerendra Pratap Singh

A Note on Scientific Study of Copper Objects from Khairadih, Ballia, India

The ancient settlement of Khairadih (Ballia) has been excavated by Banaras Hindu University between 1980 to 1986 and in 1996-97. The excavations yielded one hundred and fifty seven copper objects ranging between Chalcolithic Period to early Historic Period. Their archaeological significance, distribution and typological have already been described by the excavators in a number of publications. From among the hundreds of specimens recovered from the site, a few were subjected to metallographic and Atomic Absorptions Spectroscopic studies. It has been observed that the surface patina was composed of sulfates and oxysulfates in the outer layers while the inner layers were rich in copper oxides. The bowl exhibited smaller grain sizes near two of the surfaces while the structure in the interior was equiaxed. The deformed grains and inclusions near the surfaces and variation in the microhardness of the sample from different faces proved that the copper bowl was processed by cold deformation after initial casting. The higher rate of corrosion has been attributed to the presence of second phase sulfide inclusions. Analytical data confirms the alloying practice. There is definite evidence of low tin bronze. On the basis of the present study an attempt has also been made to identify the sources of copper ore used in this area.

Ravindra Nath Singh, Cameron A. Petrie, V. Pawar, A.K. Pandey & D. Parikh

Investigating settlement along the Ghaggar and its hinterland: the Ghaggar Hinterland Survey

This paper presents a preliminary report of the *Ghaggar Hinterland Survey*, which was a focussed village-to-village survey of the hinterland of the middle course of the Ghaggar River (particularly Fatehabad District, Haryana and Mansa District, Punjab) carried out by the *Land, Water and Settlement Project*. During November and December 2010, a total of 182 sites were visited, and a sizable proportion of these were previously unknown, including sites of all periods. The results of this survey reiterate a number of problems with the existing site distribution data sets for the region and have important ramifications for our understanding of the dynamics of settlement in Haryana and the southern Punjab throughout proto- and early history. They also make an important contribution to our understanding of the rise of cities in western India during the periods of the Indus and Early Historic urbanisation, and the role that proximity to rivers and water sources played in these processes.

Ravindra N. Singh, Cameron A. Petrie, Charles A.I. French & David I. Redhouse

Excavations at Dabli Vas Chugta, Hanumangarh, Rajasthan, India

The Banaras Hindu University and the University of Cambridge have jointly undertaken a small scale excavation at the Early Harappan site at the village of Dabli vas Chugta under the *Land, Water and Settlement project* (<http://www.arch.cam.ac.uk/rivers/>). This project is a multidisciplinary endeavor involving scholars from several Indian and UK institutions, which have the specific objective of investigating the relationships between archaeology, geography, landscape and climate in northwest India.

This report describes the most recent season of work, which saw excavations at the single-period site of Dabli vas Chugta. Excavations revealed the level of preservation at the site was surprisingly limited, and this appears to have been largely due to extensive site leveling and soil removal. However, a wide range of cultural material was recovered from the excavations. The most common material recovered was fragments of fired ceramic vessels of various periods, but there were also a range of other small finds recovered, including beads of various types, clay discs, grinders, and clay figurine, bangle and toy cart fragments.

The pottery recovered from the excavations at Dabli vas Chugta were exclusively Early Harappan in date. In general, the material presented a range of distinct fabric types that have previously been described at Kalibangan, which is unsurprising considering the proximity of the latter site. A few antiquities were recovered during operation, including a large number of steatite beads, several copper based metal objects, including an arrowhead reminiscent of Ganeshwar types and a fragment of what appears to have been a fish-hook.

The excavations at the site focused on recovering well stratified cultural material, carbonized organic remains for new radiocarbon assay, samples for phytolith and soil micromorphological analysis, and samples for flotation to collect macro-botanical remains. A multi strand analysis of this material is currently underway, and this will allow for a far more refined interpretation of site date range, use and function than is currently available. In order to date the land-surfaces upon which these archaeological sites were established, samples for OSL dating were taken from the natural sand at the base of each trench.

Carla M. Sinopoli

Ceramic Change and Ceramic Use in Late Prehistoric South India: The Evidence from Kadabakele (Koppal District, Karnataka)

From the late second millennium BCE through the early first millennium CE, the inhabitants of the South Indian settlement at Kadabakele (Koppal District, Karnataka) produced, used, and disposed of countless thousands of earthenware pottery vessels. This paper draws on data from four seasons of excavations at Kadabakele conducted by the University of Chicago, University of Michigan, and Karnataka Directorate of Archaeology and Museums to examine changes in pottery technology and use, and to contextualize these in their larger sociopolitical contexts. Evidence from Kadabakele reveals long lasting ceramic traditions that were punctuated by periods of experimentation with and introduction of new wares and vessel forms, as potters and consumers alike responded to, and generated through their actions, changing social and economic conditions. In this paper, I examine the sequence of ceramic change at Kadabakele in reference to larger patterns known from elsewhere in Southern India. Further, the analysis of large, systematically documented ceramic samples from diverse Iron Age ritual and domestic contexts at Kadabakele, allows a consideration of patterns of consumption and deposition of these ubiquitous goods.

Peter Skilling

Stupas and the spread of Buddhism in India: the early period

Buddhism spread rapidly during the lifetime of the master and the centuries that followed. In this paper, I present the results of field trips conducted in 2010 and 2011, during which I visited recently excavated and lesser known sites in Madhya Pradesh. These include Deo Kothar, Dhunigarhi, Satdhara, Murel Khurd, Ujjain, Panguraria, and Talpura. They do not constitute or fall along any single route, but in general belong to the communication network of the Dakshinapatha, the route to the south.

Many of the sites (though not necessarily the monuments) can be presumed to date from the Nanda or Mauryan periods. Most seem to have been abandoned by the fifth or sixth centuries of the Buddhist Era (that is, by the beginning or early centuries of the Christian era). The monuments consist of stupas made of bricks and dressed stone. In addition to several immense stupas, there are stupas of all sizes – large, medium, and small. Many, including the small ones, have ambulatories to be reached by flights of steps. Large and enigmatic stone platforms are often placed near to the main stupas. The sites are often associated with rock shelters and rock paintings.

The number of stupas attests to a remarkable diffusion of Buddhism along these routes. Inscriptions have been recovered from some sites, but for the most part the monuments have no names and no written history. In the attempt to understand them, it is necessary to read the monuments together with texts, bearing in mind that in their redacted forms the texts are generally later than the artefacts.

Anna A. Ślaczka

Dancing Śiva images from Bengal and their Southeast Asian counterparts

Images of dancing Śiva are known from all over India. The northeast of the Indian Subcontinent, however, produced a number of images of a distinct iconographic type. This type occurs almost exclusively

there, i.e. in the area of the present-day modern state of Bengal in India and in Bangladesh and, occasionally, in a few adjacent regions: Śiva dancing on the back of his 'vehicle', the bull (*vr̥sa* or *vr̥sabha*). Several such images were already listed by Bhattasali in his *Iconography of Buddhist and Brahmanical Sculptures in the Dacca Museum* (1929). Since then, however, several more images came to light. Not all of them have been published and studied carefully and the available publications often vary among each other as far as the descriptions of the sculptures and other details are concerned. This paper discusses the iconography of the thus far discovered sculptures of Śiva dancing on the bull, their chronology, possible textual basis, and compares Indian examples with similar ones in Southeast Asia.

Monica L. Smith & Rabindra Kumar Mohanty

Archaeology at Sisupalgarh: Chronology and Conclusions About an Early Historic Urban Centre in Eastern India

Sisupalgarh in eastern India has been the focus of a ten-year project of surface survey and collection, geophysical survey, and excavations by a joint University of California (Los Angeles, USA) and Deccan College (Pune, India) team. The main objective of the research project was to investigate daily life through the study of architecture and artifacts. The team has investigated areas of domestic and monumental architecture at the site, as well as the rampart and gateways along with areas inside and outside of the fortification wall.

Sisupalgarh was a strong regional center of consumption and also was integrated with a larger ritual landscape as seen in surrounding Buddhist and Jain monuments. Sisupalgarh's political effects also included the site's potential identification with the location of the Kalinga War of the third century BC, the severity of which was cited by the Gangetic ruler Asoka as a rationale for adopting *dharma* as a guiding political principle.

A comprehensive series of radiocarbon dates from Sisupalgarh now has enabled us to provide insights on the longevity of the site. In several areas we excavated to bedrock or to virgin soil, providing the opportunity to date the earliest occupations in those locations. Five different locations have returned calibrated C14 dates of the seventh to the eighth centuries BC. Additional radiocarbon dates from throughout the sequence of excavation add confirmation that the site was in existence well before the historical events of the third century.

Sisupalgarh may never be proven to be the definitive location of the Kalinga War, but as a large population center it would have been affected by the dramatic regional events attributed to Asoka's military campaign. Significant artifact and architectural changes noted by our team also can be attributed to this time period, in which the city continued to thrive but with distinctly different production and consumption strategies.

With a decade of investigation now completed at the site and publication underway of the final report, we are now using the project information to direct our attention to the surrounding region. Sisupalgarh was one of the largest sites in eastern India, but its articulation with other population centers is as-yet unknown. A regional study is now underway to identify the sites and regions over which Sisupalgarh exercised political, economic and social influence.

Kirsten Southworth

Decoration, assimilation or incorporation – Hindu (?) Gods in Buddhist contexts along the Silk Road

Depictions of Hindu gods appear in a number of Buddhist sites along the Silk Road. They vary in size, position and material: they appear in wall paintings, relief carvings or on paper flags. Their iconography can be very close to contemporary Indian models or hardly recognizable from an Indian point of view and in many cases they bear no obvious connection to the Buddhist sites housing them. Although their presence has been noted for a long time their meaning in a non-Hindu context is only gradually being understood. The paper will discuss selected examples of these "Hindu" deities and will try to suggest possible reasons for their inclusion in the visual repertoire of this region.

Doris M. Srinivasan

Laksmi's Choice

Although Visnu allied himself with others, he and Laksmi are the preeminent Vaisnava couple. Less emphasized is that Laksmi also chose others before her union with Visnu. This paper analyses her choices

mentioned in the epics and substantiated in the puranas and discusses what they reveal about Sri-Laksmi's primary nature and powers before her alliance with Visnu.

Her partners have a common attribute. Sri-Laksmi's choices possess 'kingship'. Whether divine or demonic they can all claim kingship over some domain. She avows as much in the Mahabharata, saying "I (Sri-Padma) am steadfastness, success, prosperity... I dwell with victorious kings" see 12. 221. 22 - 23).

These pre-Visnu alliances reveal that Sri-Laksmi is primarily the Goddess of Sovereignty, depicted as such when shown as abhiseka (or Gaja-) Laksmi. This depiction begins from c. the 2nd century BC onwards, and the sovereignty notion is reinforced in post-Kusana and Gupta imagery by providing her with the simhasana, or lion seat. These early depictions - including a newly discovered post-Kusana relief, plus some reinterpreted Gupta coins and a sculpture - establish her initial independent worship as Goddess of regal power of prosperity and of life-sustenance. In the Gupta Period when her connection with Visnu becomes established, Vaisnava king Skandagupta, believing himself to be ritually transfigured as Visnu on earth, can proclaim that he is Laksmi's choice to clinch his claim to the royal succession. Prior, King Candragupta II seems to insinuate the same on some of his coins.

However in the first sculptural relief showing the ideal Vaisnava couple, Sri-Laksmi's considerable powers stemming from her independent cult phase expand to incorporate the Vaisnava worldview with its Samkhya inclusions. The 6th century Deogarh Anantasayin masterpiece portrays Sri-Laksmi's universalized yet dependent role which complements that of her spouse in the extraordinary drama of cosmology.

Sharada Srinivasan, Carla Sinopoli, Kathleen Morrison, R. Gopal, S. Ranganathan
Ferrous metal finds from the south Indian iron age site of Kadabakele, Karnataka

The South Indian site of Kadabakele is located on the northern bank of the Tungabhadra River in Koppal district of northern Karnataka. More than 60 hectares in area, occupation at the site spanned from the first millennium BCE Iron Age period into the first millennium AD as indicated by excavations by a collaborative team from the University of Chicago, University of Michigan, and Karnataka Department of Archaeology. Ferrous finds included projectiles, nails, rings and some slag specimens. Metallurgical studies are under way on some of the ferrous metals in collaboration with National Institute of Advanced Studies and Indian Institute of Science, Bangalore. Apart from iron artefacts, the finds also include some medium to higher carbon steels. Though from an earlier context, such finds may also assume significance in terms of unraveling the trajectory of the development of 'wootz', a high carbon steel known to have been widely produced in southern India from the accounts of European travelers from at least about the 16th century.

Razia Sultana

A Profile of New Discoveries of Durrani Monuments in Kyber Pakhtunkhwa, PK

The rule of Durrani in the present Khyber Pakhtunkhwa had begun in 1747 and remained till the end when eventually it was taken over by the Sikhs in 1818. Although it militarily came under the control of the Sikhs but politically it remained in the hands of the Barakzai Sardars who were very close kiths and kin of Durrani and basically belonged to the same large tribal configuration.

After capturing the main land of Afghanistan KPK was one of the most initial possessions of Durrani Empire. It remained not only an integral part of Durrani Empire but also enjoyed central position from political, economic and strategic perspectives, to an extent that KPK's main city, Peshawar used to be the winter capital of the Durrani rulers from the times of Taimur Shah (2nd Durrani ruler) till the last ruler Shah Mamood.

During their rule the Durrani rulers preferred to reside in the Balahisar (Fort) at Peshawar. To ensure better security to the royal family they constructed their palaces within the compound of the Balahisar. After the Durrani kings the Balahisar was occupied by the Sikh military commanders who destroyed Durrani monuments. At present Balahisar is occupied by the Frontier Constabulary and it is next to impossible to visit and identify the basic remains of the residential quarters of the royal family.

As the Durrani were defeated by the Sikhs and they established their sway over KPK by destruction and massacre so there is great likelihood that many monumental contributions of the Durrani were destroyed which do not have existence any more. However, there are some monumental remains of the Durrani rule in some parts of KPK such as Peshawar and Kohat of which some are still intact which are revisited and explored historically and archaeologically in this study.

So far hardly any comprehensive study of the Durrani monuments has been done, what we find in this regard is in bits and pieces. Through this piece of research an attempt has been made to project new study on the Durrani monuments in a compact form in archaeological and historical context.

Uthara Suvrathan

Complex societies on the periphery: Archaeological survey in Banavasi

This poster presents preliminary results from a systematic archaeological survey around Banavasi (75° 5' E, 14° 33' N), the fortified capital of a regional kingdom and the adjacent contemporaneous, lower order center of Gudnapur, both located in Karnataka, India.

A full coverage archaeological survey, surface artifact collection and analysis were undertaken over the course of three summer field seasons (2009-2011). A 5×5 km block around Banavasi was completely surveyed with a more targeted survey in a similar sized block around Gudnapur.

From at least the 1st century AD the political situation in peninsular India was extremely complex. Not only were there large states or empires located in different 'core' areas at different points in time but numerous smaller complex polities maintained a presence in various sub-regions, reflecting the presence of a strong substratum of regional elite groups. The organization of these small polities is not clearly understood due to a continuing emphasis on the importance of the development and expansion of large states and empires in the region.

Banavasi rose to prominence as the capital of the small regional kingdom of the Kadamba dynasty (4th-6th centuries AD) and continued to be important as a regional administrative center until the 14th/15th centuries. The polity centered on Banavasi did not retain its independence throughout this sequence although local elite groups remained important in the region. From the 7th to the 10th centuries the region came under the control of successive imperial powers that held sway over large parts of southern India: the Chalukyas (6th-8th and 10th-13th centuries AD); the Rashtrakutas (8th-10th).

This poster presents analyses on the type and distribution of archaeological sites and artifacts in order to document the material patterning that will help to identify regional as well as larger imperial or pan-subcontinental socioeconomic groups, processes, and activities. This archaeological data is integrated with historical and epigraphic sources to develop a complete picture of regional socio-political and economic organization at Banavasi over time. This study of a 'peripheral' complex polity contributes new data on regional forms of complexity, and responses to and interaction with large states and empires.

Francesca Tagliatesta

The iconographic representation of the Wheel of Life, from India to Italy, via Afghanistan, with particular reference to the third meeting of the Bodhisattva.

In a very old study dedicated to the rock caves of Ajanta, Foucher highlighted the link, at least formal, between the so-called scene of the zodiac, the wheel of life, and the pictorial cycle painted in the Campo Santo of Pisa by Benozzo Gozzoli. The intuition was correct and this paper aims to take up this subject and to update it, by introducing new working hypotheses and investigating not only the iconographic aspects but also the textual and cultural implications related to the main artistic topics. Starting from the cave 17 at Ajanta, proceeding westward to the pictorial cycle of Kunduz (Afghanistan) and from there to Italy, the enquiry is not only focused on the search into Campo Santo at Pisa, as Foucher had suggested, but also within similar pictorial representations widespread in Medieval Italy, including those of cave Santa Margherita in Melfi (Basilicata, Southern Italy), where is represented the meeting of three living with three dead. Every single iconographic representation of the wheel of life will be analyzed in its (one's own) cultural context, with reference to the scenes which are next. With the help of texts, which have suggested and inspired it, I will try to decipher, at first, the moral and religious teaching that implies, and, subsequently, by an artistic point of view, to identify the pictorial and stylistic choices of the masters who have made, in respect of certain details rather than others. Finally, the iconographic representations will be compared to each other, to assess how the initial and common schema of inspiration has evolved in the transition from one context to another and if the moralizing discourse remains unchanged, or, if not, how it is

adapted to another cultural setting. The research will follow a precise chronological way, from origin of the iconographic and textual model to its propagation in the West. The pictorial scenes will be photographed in detail, to be read and studied more easily. With regard to Ajanta, most likely, I shall avail myself of images taken during the “Indo-Italian project for the conservation of wall paintings of Ajanta Cave 17” by Institute for the Conservation and Restoration of Rome, with which I have already started the procedures necessary to view all the material collected in this useful survey. In summary, according to the suggestions by Alfred Foucher, this research should broaden the topic concerning the spread of a pattern (the wheel of life) from East to West, and where possible to open a debate about the adaptation or reworking of symbolic content of a specific iconographic model.

Tadashi Tanabe

New Interpretation of Dionysiac Images on Gandharan Reliefs

Among Gandharan sculptures, there are many reliefs depicting scenes of drinking, banqueting, flirtation, playing music and dancing which are often called ‘Dionysiac’ or ‘Bacchanlian’. Most scholars specializing in Indian art have regarded these reliefs as irrelevant to Buddhism, either saying that they represent a Dionysiac (Bacchanalian), or fertility, cult. However, my recent study of the huge relief-complex (H:ca.4m) excavated from Zar-dheri in the Hazara District of Pakistan by the Tokyo National Museum team, which depicts the Descent of the Buddha from the Celestial World of the Thirty-Three Gods, demonstrated that all the Dionysiac images of Gandharan Buddhist reliefs must be interpreted within the context of Buddhist religious beliefs, rebirth in the Heavens of Desire (*Kamaloka*).

This conclusion is based upon an iconographical analysis of the two vertical panels of this relief-complex which depicts pairs of musicians, banqueters, amorous couples and so on all of whose images derive from the Dionysiac or Bacchanalian imagery of Greek, Hellenistic or Roman art. Although the relevant figures are Greek or Roman in appearance, they symbolically depict the sensuous pleasures of the Celestial World of the Thirty-Three Gods.

The celestial sensuous pleasures obtainable after death are well attested by literary evidence in such *sutras* as the *Jataka*, the *Saundarananda* and so on. Furthermore, according to other *sutras* such as the *Ksdrakavastu*, vol.29 of the *Mulasarvastivadins*, and the *Vimalakirtinirdesa*, ch.11, lay Buddhists of the time strongly desired to be reborn after death in the Realm of the Thirty-Three Gods presided over by the God Indra and enjoy blissful lives in the company of *apsaras* (celestial courtesans) for millennia.

The conclusion to be drawn from the above observations is that all the Dionysiac or Bacchanalian images of Gandharan Buddhist art do not represent a Dionysiac or Bacchanalian cult but sensuous pleasures to be obtained mainly by lay Buddhists after death in the Celestial World of the Thirty-Three Gods.

Pushpa Tiwari

Architectural Remains of circa 10th Century Temple at Hathigan

This article is the outcome of my fieldwork and digital documentation of the site of Hathigan—25° 18' 0" N longitude and 81° 52' 30" E latitude across river Yamuna approximately 24-25 kms in south-east direction from Allahabad city—from where architectural remains of a magnificent temple have been discovered. Architectural fragments along with several *malakas*, crowned *rathiks*, *paśākh* offsets, pillars and pilasters are lying scattered around the temple mound. Documentation and a careful analysis of this temple site proves that it may be assigned to *circa* 10th CE.

Temple was east facing with well-defined structures: *mukhamaṇḍapa*, *maṇḍapa*, *antarṇā*, *triratha garbhagṛha* with recessed angles of the socle. At the west, from the exterior wall to wall *garbhagṛha* is 4.88 m square in plan. Inner sanctum would have been 3.05 m square chamber as the wall on each side seems to be of 91.50 cm thickness [91.50 cm + 91.50 cm (walls) + 3.05 m (inner chamber)=4.88 m]. Usually, the height of *ja'ghṛ* equals the height of *Adhiṣṭhāna* and that of *śikhara* at least twice the height of *ja'ghṛ*. Taking these as reference point we can say the present temple would have been approximately 18-20 m in height. Hathigan temple was built in *Nāgara* style as per the architectural canons. *Mṛti-parikara* suggest this temple being a *Vaiṣṇava* temple.

Prayāga has been one of the most important religious centres in ancient India. During early medieval period it came under the rule of successive dynasties. Kara stone inscription dated CE 1035, Jhusi copper plate

grant dated CE 1027, Khairaha Plates of Yashahkarna, and Khajuraho stone inscription—they suggest the presence of Pratihāra, Chandell and Kalachuri during 10-11th CE in this region.

Hathigan is important for understanding the royal patronage and purpose of building such temples in Yamuna par region—which is a rich source of sandstone and also strategically positioned from military point of view. This paper deals with such challenging issues.

Mudit Trivedi

Stones in the Iron Age: A study of the lithics from Kadebakele (Koppal District, Karnataka)

This paper presents an analysis of the lithic assemblage from the site of Kadebakele. After 4 seasons of excavations by the University of Chicago, University of Michigan, and Karnataka Directorate of Archaeology and Museums the lithic assemblage provides detailed and well-provenienced information about the continued use of small blades and flakes in the Iron Age. The assemblage is marked by the presence of a variety of backed and retouched blades, lunates, scrapers and ground stone-axes. In addition this paper draws upon a smaller sample of data on the lithic density and variability in the earlier Neolithic and later Early Historic periods at the site. It uses these to present an analysis of the specificity of the use of lithics in the context of the Iron Age, in comparison with published data from other sites in the region. The evidence reveals broad trends in technological variation in knapping styles and raw materials and their treatment. This paper additionally connects these data to questions of site-structure and probable patterns of use across different areas of the site based upon the context of their recovery and associations between different artifact types.

Akinori Uesugi

Ceramic sequence in the Ghaggar Plains

The Ghaggar Plains, which extend in modern states of Punjab and Haryana in India has been known for rich archaeological remains from pre-Indus (pre-urban) to post-Indus (post-urban) periods. Excavations at several sites like Kalibangan, Siswal, Mitathal, Banawari, Bhagwanpura, Rakhigarhi, Bhirrana, Baror, etc. have demonstrated the archaeological potentiality of this region, but the ceramic sequence in this region have not been well established so far. As a results, most of the sites that have been located on the archaeological map by many surveys have not been properly dated. This situation makes it difficult to understand the contemporaneity of sites across the region and to evaluate a distribution pattern of sites through times.

This paper focuses on ceramic evidence from recently excavated sites in this region in order to establish the ceramic sequence that can help us dating sites and making more defined archaeological maps of the pre-/proto-historic period in this region. Especially, the sites of Girawad, Farmana and Mitathal where the present author has worked on primary evidence of ceramics from excavations, are mainly discussed in this paper, as well as surface collections from a number of sites across the region.

At the site of Girawad, a number of potsherds were unearthed from numerous pits including pottery kilns. The typological features and a few ¹⁴C dates suggest that this site dates to the pre-Indus period. The site of Farmana that consists of a settlement and a cemetery dates to the Mature Indus period. The settlement area of this site has a deposit of 3.5 m in thickness giving us a good sequence of ceramics based on stratified contexts with ¹⁴C dates. In the meanwhile, the cemetery of this site provided a good number of complete vessels. Finally, the site of Mitathal that is currently excavated by our team yielded a sequence from the Mature Indus to the post-Indus (or Late Harappan) periods. Based on the evidence from these three sites, a ceramic sequence will be proposed and will contribute to our understanding of the distribution pattern of sites in the Ghaggar Plains.

Massimo Vidale, Luca Olivieri, Atif Iqbal & Noor Agha

A new light on the protohistoric graves of Swat

In the frame of the project “Archaeology Community Tourism”, Swat, Khyber Pukhtunwa, Pakistan, the writers in November 2011 carried out a test trench in a protohistoric graveyard near the present village of Gogdara. The site, labelled Gogdara 4, is a large Iron age cemetery of the same periods and cultural horizons previousl explored in the 60’ies by Italian archaeologists. We suggest that in the past the relevance of the archaeological contexts outside the graves’ shafts has been seriously underestimated. By paying attention and recording the ancient trampling surface of the graveyard, rather than focusing on the grave goods, we discovered

substantial traces of wooden architecture at the mouths of the burial pits. By evaluating such new information, stratigraphic formation processes and ethnohistorical evidence we propose radically new reconstructions of the ancient burial rituals.

Natalia M. Vinogradova, Yu.G. Kutimov, M. Toufer, J. Lombardo
New Monuments of the Vakhsh Culture in the Basin of River Kyzylsu (Tadjikistan)

In 2007–2011 the South Tadjikistan archaeological expedition in cooperation with the German Archaeological Institute (Berlin) and the Museum of Oriental Art (Roma) discovered new monuments of the Vakhsh culture – the burial grounds of Gelot and Darnaichi in Vosseisky district of the Khotlon region of Tadjikistan. The monuments are situated on the second terrace of river Yakhsu, on the loess hills next to the kishlaks of Gelot and Darnaichi, 6 km to the north-west of Kulyab city. Researches traditionally consider the Vakhsh monuments as the steppe cattle-breeding culture.

2. Besides the Vakhsh burials in the burial grounds of Gelot and Darnaichi there were found a few graves of the early stages of the Sapalli farming culture. The excavation in Gelot revealed the stratigraphy of burial bedding of these cultures. In certain cases the Vakhsh burials overlap the Sapalli ones evidencing their chronological difference.

3. For the first time with respect to the Vakhsh culture there was uncovered a podboino-catacomb construction of funeral structures situated in the basin of river Kyzylsu. Three types can be singled out: a pit, a podboi and catacomb. A burial chamber in graves with podboi or catacomb is unearthened towards the hill rising.

4. The rite of burial is inhumation. There were no traces of cremation. The dead body is in a very crouched position facing north-west. The male skeletons rest on the right side and the female ones on the left side. Double inhumations and burials containing dismembered skeletons occur. Separate bones of the skull, legs or arms and sometimes bones of a ram or wild animals (deer) are available.

5. The grave goods is of standard type. The grave had from one to four vessels. The ceramic is handmade or wheel-thrown. All outer surface of vessels is ornamented by use of polishing technique of “herring-bone” pattern. The graves also contain ivory arrows, pebbles-paintgraiters, beads made from paste, cornelian and agate. More than one hundred beads was found in one of the graves.

6. In terms of chronology of the pottery material the Vakhsh burial grounds of Gelot and Darnaichi can be compared with the late catacomb burials of the Early Tulkhar burial ground and the necropolis of Makoni-Mor – the second half of the IInd mill. B.C.

7. In the grave goods of the Vakhsh burial grounds in the basin of river Kyzylsu the farming wheel-thrown ceramics is not only available but sometimes prevails over the handmade pottery and the handmade vessels imitate wheel-thrown pottery “standards”. In this region the closest contact of farming and steppe tribes takes place and the bearers of the Vakhsh culture partially borrow some rites and customs of the farming inhabitants.

Karen Weissenborn

Some examples of forgeries in illuminated palm-leaf manuscripts from Eastern India and Nepal of the 11th and 12th centuries

In recent years a number of forged miniature paintings in Indian and Nepalese Sanskrit manuscripts have surfaced on the art market and consequently in private as well as in Museums' collections. Some imitate the style of Pāla and Nepalese book painting of the 11th and 12th centuries but are devised in terms of iconography. Others are copied more or less accurately from original miniatures of well known manuscripts. The palm leaf folios bearing these faked paintings are usually genuine and originate from manuscripts of various types of literature.

This paper aims to expose the different types of copies, imitations and forgeries that have appeared on palm leaves and book covers so far.

Verena Widorn

Rajput-Style Influence on the Carvings of the Wooden Temples in the Indian Himalayas

The ruined stone temple in the Nurpur fort in Kangra district, dated to the 16th century, is carved with a row of figures and decorated by fanciful vegetal ornaments. The frieze displays a procession of gods of the Hindu pantheon, attended by male and female figures and different animals, running around the plinth of the monument. The style of the figures and the patterns of their dresses refer to a Rajput style found in the plains of North India mixed with Mughal ornaments and some traditional local elements.

Friezes of this kind can also be found in the wooden carvings of numerous temples throughout Himachal Pradesh, like the Mirkul Dev Temple in Udaipur, Lahul, or the Hidimba Dev Temple in Manali, Kulu. While the first one shows a rather sophisticated, more elegant style similar to Nurpur, the carvings in Manali depict crude, simple forms in folk art tradition.

The paper aims to analyze the different adaptations of the procession type frieze from Nurpur, unknown in the Himalayan art before the 16th century, and tries to identify the historical and cultural backgrounds of the various transformations.

Kelly Wilcox

New Insights on the Ritual Use of Animals in the South Indian Iron Age (1000-300 BC): Faunal Analysis at Kadabakele

In aiming to contribute further insight on the dynamic ways animals were incorporated into the social, political, and economic dimensions of human activity during the South Indian Iron Age, this paper focuses on recently excavated faunal material from ritual contexts at Kadabakele. Kadabakele, a settlement site located in northern Karnataka, is the research focus of the Early Historic Landscapes of the Tungabhadra Corridor project. Material obtained over four seasons of excavation have provided insight into local forms of social, political, and economic organization to be considered along side larger regional processes occurring throughout the Iron Age (1000-300 BC).

Previous analyses on fauna have yielded a wealth of information surrounding subsistence practices and the symbolic roles of animals in the social lives of Kadabakele inhabitants. Occupants consumed a variety of locally available wild taxa including birds, turtle, fish, rabbit, and deer, and relied on sheep and goat herds for secondary products. Additionally, the recovery of juvenile cattle remains containing higher degrees of burning and skeletal completeness provide evidence for communal feasting and ritual activity in areas associated with megalithic architecture.

Evidence of ritual animal use at Kadabakele comes largely from material excavated in the southern area of Kadabakele's Upper Terrace, an area known as the Southern Slope. Beginning in 2005, excavations took place within a megalithic architectural zone along the northwestern edge of the Upper Terrace, unit Block A. Initial assessments of the fauna from Block A were limited due to shallow excavation depths and a lack of radiocarbon dates. Thus, the relationship between animal use and ritual activity at Block A has yet to be fully explored. Continued excavation of Block A in 2009 and 2010 revealed a complex sequence of ritual and commemorative events that occurred during and after Iron Age occupation at Kadabakele, showcasing a remarkable commitment to place and a multiplicity of small-scale practices. Using methods of zooarchaeological analysis, this paper addresses how animals feature into these events and practices and their social, economic, and political implications.

Michael Willis

Moving Beyond Boundaries: Religion, Region, Language and the State

The Gupta dynasty dominated South Asia from *circa* 320 to 500 CE. Their period, one of relative political stability, has often characterized as India's 'Golden Age'. The Gupta dispensation has been the subject of considerable scholarly attention over the last century and recent years have seen progress toward an understanding of royal centers of ritual and the development of temples as socio-economic institutions. Despite these advances, knowledge is fragmented by entrenched disciplinary protocols, distorted by nationalist historiographies and constrained by regional languages and associated cultural and political agendas. As a consequence, this pivotal historical moment is understood only from its parts. Hemmed in by intellectual and

political boundaries, the Gupta dynasty remains a specialist subject, little-mentioned outside area studies and Indology.

The aim of my current project is to move beyond these boundaries. Informed by an interrogation of disciplinary practices and supported by new field research, I plan to develop a fresh picture of Gupta civilization, representing it as a vibrant international entity with wide connections across Asia. This will place India on the global historical stage, positioning it in the late antique 'worldsystem' for the first time. To develop this new picture, it is necessary to cut across disciplines, regions and modern countries, critique and synthesize existing knowledges, and develop innovative theoretical positions based on new evidence. The new evidence will come from a study of the distribution of political, religious and ritual centers and their operation, the spread of land charter and coinage systems and the archaeology and textuality of inter-religious dynamics. The paper proposed for EASAA 2012 will present some of the new research and discoveries in these areas.

Rita P. Wright

The Jiroft, the Kulli and the Indus

This paper addresses questions related to overland trade at mid- to late-third millennium sites in the Jiroft, the Kulli and the Indus. In distinction to maritime trade and exchanges, which have been documented based on archaeological studies involving surveys, excavations and museum collections throughout the Indus and on the Arabian Peninsula, the precise nature of overland routes, even their existence, has been disputed. Publications, discoveries and analyses during the past decade have brought to light artifactual evidence for the interconnected nature of these three regions. In this paper, I highlight some aspects of the similarities and differences that in the end, argue for and east-west contact over this broad region.

Mumtaz Ahmad Yattoo

Neolithic Baramulla: Discovery of new Neolithic material culture with similarities found across South Asia

A recent systematic field survey of Baramulla District (northwestern Kashmir, India), led to the discovery of six hitherto unknown Neolithic sites dating to between c. 3150-1550 BC. These new Neolithic sites bear common features and similarities in material culture with Burzahom and Gufkral, the key excavated Neolithic sites in Kashmir. Moreover, similarities in material culture were also found with Neolithic sites in northern Pakistan and in China. The similarities found in this material culture included pottery vessels (design and decoration), stone tools and pieces of wattle and daub plaster with reed impressions (thought to be part of what have been interpreted as Neolithic dwelling pits).

Scholars who studied Burzahom and Gufkral in Kashmir, the Swat sites in Pakistan and Yangshao and Lungshan in China called this the 'Northern Neolithic Complex' or 'Inner Asian Complex' due to significant similarities in the material culture for each area, suggesting that such similarities were due to trade and interactions between these regions.

The discovery of the new sites in Baramulla District which have homologous material to that found among the Neolithic sites of the surrounding areas in South Asia, raises the question of the integration of Baramulla District into, and its role within the so-called 'Northern Neolithic Complex'. The similarities (observed in several different categories of material culture) possibly suggest that Baramulla District formed a part of a trade network or other communication link along with Burzahom and Gufkral during the Neolithic period in Kashmir. The similarities found in material culture, therefore, could possibly be the result of interactions due to long distance trade through Baramulla District as is evident at six new sites. This paper will discuss this possibility, and suggest other interpretations as well.

Monika Zin

The Buddha's Relics and the Nāgas

As stated in the *Mahāparinirvāṇa-sūtra*, Buddha's relics were divided in eight parts. The legend of King Aśoka tells us that he opened the *stūpas* built above seven and distributed the relics into 84,000 *stūpas*, while the Nāgas refused to give him the portion they were taking care of.

The reasons behind the narrative are not difficult to guess; one of them was surely the worship of the Nāgas, especially as the guardians of the treasures, but certainly also the belief that the “untouched” relics, the direct result of the cremation, which connected the people with the sacred times of the Buddha, still exist.

Especially in the Amaravati School of sculptures, the tradition of depicting the *stūpas* guarded by Nāgas was widespread; as one inscription in Kanaganahalli (1st c. CE, Karnataka) affirms, the *stūpa* referred to was the one in Rāmagrāma. But in Andhra there were also other scenes represented that were unknown in other parts of India. The scenes show the attempt to open the *stūpa* of the Nāgas. Probably those attempts were even regarded as being successful.