

Man and Environment

ABSTRACTS

Volume XXIX, No. 1 (January-June 2004)

Geoarchaeological Significance of the Detrital Laterite Discovery in the Karha Basin, Pune District, Maharashtra

S.N. Rajaguru, Sushama G. Deo, Sheila Mishra, Savita Ghate, Sonali Naik and Prabodh Shirvalkar

For the first time, laterites of the Early Tertiary period are reported in the Karha basin, district Pune. Boulders and pebbles of detrital lateritic ironstone were found in moderately consolidated fluvial gravel rich in basalt litho-clasts at Saswad, Jejuri and Morgaon in the Karha basin. The laterite bearing gravel is a relict regolith occurring as an isolated outcrop on a denudational surface (800-600 m AMSL) of the Karha. The Karha is an autochthonous stream, in a region with a semi-arid climate, with an average annual rainfall of 500 mm. overall geomorphological and archaeological observations indicate that the relict gravels may be of Early Pleistocene age or even earlier; the Jejuri outcrop being the oldest and the Saswad outcrop the youngest.

S.N. Rajaguru, *et al.*, *Man and Environment* XXIX(1): 1-6 [2004]
ME-2004-1A01

The Vegetational Context of Early Agriculture in South India

Dorian Q. Fuller and Ravi Korisettar

The first systematically collected assemblages of archaeological plant remains from Neolithic south India (2800-1000 cal. B.C.) are discussed in relation to their palaeoecological context. These include the remains of millet and pulse species domesticated in peninsular India. In order to better understand this process, the vegetational environments of Southern India are discussed in relation to the modern distribution of the wild progenitors of these crops. In order to infer the past distribution of these progenitors and possible environmental factors in their domestication available palaeoecological and palaeoclimatic evidence is reviewed for South Asia and other regions that provide evidence for Holocene fluctuations in monsoon rainfall. There is general agreement from numerous proxy records that the stronger monsoons of the mid-Holocene declined, starting in the fourth millennium B.C. and rainfall was minimized by c. 2200 cal. B.C. The general effects of this monsoon weakening on the vegetational distribution of south India is modelled. This suggests that domestication of native crop species occurred during this drying phase and may have been related to declining availability of the wild progenitors as hunter-gatherers resources.

Dorian Q. Fuller and Ravi Korisettar, *Man and Environment* XXIX(1): 7-27 [2004]
ME-2004-1A02

Marine Archaeology in India

Sila Tripathi, A.S. Gaur and Sundaresh

Marine archaeology, also known as maritime, nautical or underwater archaeology deals with the 'scientific study of the material remains of man and his past activities on the sea'. Marine archaeology has made tremendous progress in India. Over the years, the National Institute of Oceanography, Goa, in collaboration with other Government agencies has undertaken the exploration and excavation of submerged ports and shipwrecks at Dwarka, Bet Dwarka, Somnath, Vijaydurg, Goa and Lakshadweep on the west coast; and Poompuhar and Mahabalipuram on the east coast of India. Further, onshore explorations have also been carried out at various places along both coast of India to locate ports, trading centres and structures related to maritime activities. These findings from various sites in India, confirm her rich submerged cultural heritage, conservation of which is a prime necessity. A modest beginning has been made in this direction and more thrust is required before this submerged heritage is destroyed owing to intense activity along the coast, resulting from globalisation and rapid industrialisation. This article provides an overview of development in Indian marine archaeology, and describes a few important sites and their archaeological significance.

Sila Tripathi , *et al.*, *Man and Environment* XXIX(1): 28-41 [2004]
ME-2004-1A03

A Database of Glass and Glass beads in India

Alok Kumar Kanungo

A.K. Kanungi, *Man and Environment* XXIX(1): 42-102 [2004]
ME-2004-1A04

New Light on the Maritime Archaeology of Porbandar, Saurashtra Coast, Gujarat

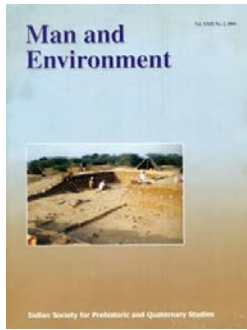
A.S. Gaur, Sundaresh and Ashok D. Oderdra

A.S. Gaur, *et al.*, *Man and Environment* XXIX(1): 103-107 [2004]
ME-2004-1A05

Discovery of an Acheulian Site in Association with Tephra at Rajbag, Taluka Supa, District Pune, Maharashtra

Sushama G. Deo, Savita Ghate, S.N. Rajaguru, Nitin Karmalkar and Makaranda Kale

Sushama Deo, *et al.*, *Man and Environment* XXIX(1): 108 [2004]
ME-2004-1A06



Volume XXIX, No. 2 (July-December 2004)

Preliminary Report on Excavations at the Palaeolithic Site of Attirampakkam, Tamil Nadu (1999-2004)

Shanti Pappu, Yanni Gunnell, Maurice Taieb and Kumar Akhilesh

The Palaeolithic site of Attirampakkam, Tamil Nadu has been investigated sporadically for over a century. Despite a paucity of published reports, several concepts dominating much of early Indian prehistory grew out of this early work. Recent excavations (1999-2004) at Attirampakkam reveal new information on the nature and context of Palaeolithic industries. The site was occupied almost continuously over the Middle to Late Pleistocene, and has yielded Lower, Middle and Upper Palaeolithic assemblages and microliths. An important discovery was that of Acheulian artefacts within a thick deposit of laminated clay, previously assigned to the Avadi series of Cretaceous shales. In addition to archaeology, the geochronology and environmental history of the site are being investigated. This work will provide a better understanding of the occupational history of the site in relation to changing Pleistocene environments.

Shanti Pappu, *et al.*, *Man and Environment* XXIX(2): 1-17 [2004]
ME-2004-2A01

The Ahar-Banas Complex and the BMAC

Gregory L. Possehl, Vasant Shinde and Marta Ameri

This paper discusses the most recent discovery of more than hundred clay seals of the end of third and the beginning of second millennium BC period in the excavations at Gilund in Rajsamand District of Mewar, Rajasthan and their significance in the long distance trade links of the Chalcolithic people of Mewar in Central India. These clay seals are unbaked and impressed with sun and a variety of floral motifs. This is the only Chalcolithic site in India outside the Harappan domain producing evidence of impressed seals. Seals impressed with similar motifs have been reported from a number of sites of Bactrian-Margiana Archaeological Complex (BMAC) that flourished in Afghanistan and Central Asia. It is therefore proposed that there was interaction between the Chalcolithic people of Mewar and their contemporaries in Afghanistan and Central Asia. It is obvious the Harappan played significant role as intermediaries in this interaction. This discovery, the first of its kind in the Chalcolithic levels in India, has far reaching implication on Indian History of the third and second millennium BC.

Gregory Possehl, *et al.*, *Man and Environment* XXIX(2): 18-29 [2004]
ME-2004-2A02

Report on Scanning Electron Microscope Analysis of NBP Sherds

Robert Harding

A number of theories have been proposed to explain the gloss of Northern Black Polished Ware, the most distinctive ceramic of the Early Historic. This paper reviews these theories and reports the results of SEM work confirming the presence of iron and the importance of a thin outer slip in creating the gloss.

Robert Harding, *Man and Environment* XXIX(2): 30-36 [2004]
ME-2004-2A03

Shifting Cultivation Studies in India: A Review

K.R. Dikshit and Jutta K. Dikshit

Shifting cultivation, as an agricultural system, practiced largely by tribal communities in India, covers roughly a million hectares of land annually, its total spread being more than 4.5 million hectares. Confined to hilly and forested areas experiencing moderate to high rainfall, largely in Orissa, in the northeastern states of India and parts of Madhya Pradesh it coincides with the areas inhabited by tribal communities who have been practicing this system of farming for centuries. There is thus, a convergence of interest, in this area, of foresters, anthropologists, agricultural scientists and lately of ecologists and even economists.

Though it is undeniably true that the practice has existed for many centuries, or even millennia, there is hardly any record or description of this practice in early Indian literature. The earliest description found in India dates to the late eighteenth century. The present paper critically reviews studies over the last sixty years, and summarises the present context of research in shifting cultivation.

K.R.Dikshit and J.K. Dikshit, *Man and Environment* XXIX(2): 37-69 [2004]
ME-2004-2A04

A Note on the Megalithic Culture found among the Marams of Manipur

Potshangbam Binodini Devi

No abstract

P. Binodini Devi, *Man and Environment* XXIX(2): 70-73 [2004]
ME-2004-2A05

Excavation at Mayiladumparai, Tamil Nadu

K.Rajan, N. Athiyaman and P. Jayakumar

The excavation of a habitation-cum-burial site at Mayiladumparai, revealed the continuous existence of four cultural phases namely Microlithic, Neolithic, megalithic and Early Historic. The rock paintings and engravings unearthed in rock-shelters along with the habitation mound are the most significant part of this excavation. The west facing cist burial without any portable represents the early form of Megalithic architecture. The occurrence of

Tamil-Brahmi inscribed potsherds demonstrates the cultural transformation from the Megalithic to the Early Historic period.

K. Rajan, *et al.*, *Man and Environment* XXIX(2): 74-89 [2004]
ME-2004-2A06

Of Gangê and Gaᅅgâbandar: Location of the Port and Condition of the Harbour

Shahnaj Husne Jahan

In this paper, archaeological, literary and physiographic evidence is utilized to demonstrate that the early historic port of Gangê or Ganges, cited in Roman literary sources, was located at Chandraketurgarh in North 24 Parganas district, West Bengal. It is concluded that the site was an estuarine port with no permanent quay and wharves; the socio-economic environment of the port included production centres, commercial centres, residential quarters and an administrative centre; it was well-connected with South Asian and Southeast Asian port; and functioned from the 3rd century B.C. to the early 4th century A.D.

S.H. Jahan, *Man and Environment* XXIX(2): 90-101 [2004]
ME-2004-2A07

The Myth of Dense Forests and Human Occupation in the Ganga Plain

Rakesh Tewari

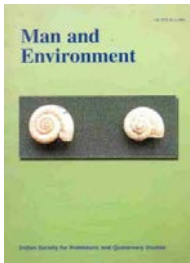
The climatic conditions of the Ganga Plain have been regarded as having favoured the development of an original dense forest cover. References from the epics and other ancient literature are quoted in favour of this view. It has been a general perception that these forests could not be profitably cleared without iron, and that the Aryans who had the knowledge of iron cleared them for large scale human settlement with iron artefacts around 700-800 B.C. this phenomenon is often associated with the well-known 'Videgh Mathav legend' of the Satapatha Brahmana. This paper assesses the plausibility of these views in the light of traditional as well as recent sources of information revealed from archaeological and palynological investigation. This assessment shows that the upper Ganga Plain comprised an open savannah forest with certain thickets and the mid Ganga Plain was covered with a relatively thicker forest, and there were enough open spaces in these regions many of which were occupied by considerable number of human settlements well before the introduction of iron.

Rakesh Tewari, *Man and Environment* XXIX(2): 102-116 [2004]
ME-2004-2A08

A Satavahana Period Shrine of Laxmi-Parvati at Siddhapur, District Solapur, Maharashtra

Vasanta Shinde, P.P. Joglekar, Ravi Jadhav and V. Naiknavare

Vasant Shinde, *et.al.*, *Man and Environment* XXIX(2): 117-13 [2004]
ME-2004-2A09



Volume XXX, No. 1 (January-June 2005)

Quaternary Palaeoenvironments of the Ganga Plain Anthropogenic Activity

I.B. Singh

Indo-Gangetic plain, separating Himalayas from the Peninsular India is one of the largest alluvial plains of the world. It is foreland basin undergoing rapid subsidence and receiving sediments from eroding Himalayas and partly from the peninsular India. Deposition in this basin started in the middle Miocene (c. 16 Ma BP). The sediments of the early history of this basin (16-0.5Ma BP) are exposed as Siwalik Hills; while the present-day near surface sediments of this basin are of Late Quaternary age. The Ganga Plain marks the central part of the Indo-Gangetic plain. It is drained by a network of river channels originating in the Himalayas, some in alluvial plains and some in Peninsular India, where the Ganga River is the trunk river. The climate of the Ganga Plain is subtropical where rainfall is controlled mainly by the southwest monsoon. The southern and western part of the Ganga Plain receives low rainfall and is prone to high monsoon variability. The Ganga Plain exhibits six regional geomorphic surfaces which are depositional surfaces, formed during late Pleistocene-Holocene cycles (128 kyr BP-Present), influenced also by neotectonics and base level changes, all having a Holocene sediment cover.

The upland Interfluvial Surface (T_2), also known as Bangar (Older Alluvium) is regionally most important showing of microgeomorphic features like wetlands, lakes and ponds, and *bhur* ridges. This surface shows kilometre scale undulations and areas of centripetal drainages. An important tectonic event between 8-5 kyr BP produced undulatory topography and converted small tributary channels into lakes and ponds. Mineralogical, chemical, faunal, palynological, and teeth enamel isotope studies have helped in reconstruction of palaeoclimate and palaeovegetation changes in the Ganga Plain. High rainfall with short dry spells between 50-25 kyr BP, low rainfall between 25-13 kyr BP, high rainfall between 13-5 kyr BP (a dry spell of Younger Dryas between 11.5-10.5 kyr BP, very high rainfall between 9-7 kyr BP), low rainfall between 5-3.5 kyr BP, high rainfall between 3.5-3.0 kyr BP, and several century scale fluctuations during last 3.0 kyr BP. Isotopic studies of calcrete and palynology indicate that Ganga Plain was a grassland with a few forest thickets during Late Pleistocene-Holocene. Alkaline soils started developing in the last 3000 years.

The oldest record of human occupation in the Indo-Gangetic plain is about two million years old. The record in the Ganga Plain is throughout Palaeolithic, Mesolithic, Neolithic and historical times. Reasons for paucity of old records of human occupation are due to their burial under tens of metres of sediments. Near surface records are mostly younger than 3.5 kyr BP. Older archaeological material can be found in cliff sections, tectonically uplifted areas and deep excavations. The Ganga Plain was occupied by humans since the Palaeolithic due to rich fauna, vegetation and plenty of water.

Some kind of agricultural activity (slash and burn cultivation) is indicated by the presence of Cerealia, pollens and micro-charcoal since 15 kyr BP. So far, the oldest cultivated rice in Ganga Plain has been dated to around 8.4 cal. kyr BP. The western and

southern Ganga Plain and alluvial valleys in Vindhyan plateau and Bundelkhand must have witnessed prominent changes in palaeomonsoon during latest Pleistocene-Early Holocene. It seems probable that the Neolithic revolution, took the place in Ganga Plain rather early. It was a potential zone of domestication of rice and other cereals. A proper understanding of landscape evolution, palaeomonsoon and palaeovegetation changes of the Ganga Plain can be helpful in understanding its human history.

I.B. Singh, *Man and Environment* XXX(1): 1-35 [2005]
ME-2005-1A01

Archaeological and Anthropological Research in South Asia: Developments over the Past Fifty Years

Kenneth A.R. Kennedy

Kenneth A.R. Kennedy, *Man and Environment* XXX(1): 36-41 [2005]
ME-2005-1A02

The Practice of Agastya Worship among the Shankhari Caste of Bengal: an Ethnoarchaeological Investigation in Bishnupur and Kolmijod of West Bengal

Madhulika Samanta

Archaeological evidence shows that conch shell industry was more widely distributed than it is at present. This craft was popular in India and different types of artefact were found from the Neolithic period onwards. Bengal is an exception where shell artefacts appeared only after the Gupta period. Presently this craft activity is mainly practised in Bengal and chiefly dealt by the Shankhari caste. Their arrival coincides with the appearance of conch shell artefacts. Their origin is still unknown to us. In every aspect except the practice of Agastya worship, the caste is similar to modern Bengali populations. This custom is unique to them, and probably relates to their origin. The present paper deals with this practice as investigated in Bishnupur and Kolmijod in West Bengal.

Madhulika Samanta, *Man and Environment* XXX(1): 42-53 [2005]
ME-2005-1A03

Radiocarbon Chronology of Balathal, District Udaipur, Rajasthan

V.N. Misra

The archaeological site of Balathal, located in Udaipur district of Rajasthan, was excavated jointly by the Deccan College, Pune and the Institute of Rajasthan Studies, Udaipur for seven continuous seasons from 1994 to 2000. The excavation produced extremely rich evidence of a long period of occupation, covering Chalcolithic and Early Historic periods, with a stratigraphic gap between the two. Forty-five radiocarbon dates (30 from Chalcolithic and 15 from the Early Historic deposit), all derived from charcoal and processed independently by

two laboratories, are available for the site. Of these, five dates from the Chalcolithic and four from the Early Historic period are stratigraphically inconsistent and therefore need to not be taken into consideration. The remaining 25 Chalcolithic dates range in their uncalibrated form from 3020+90 B.C. to 1810+110 B.C. and in calibrated form from 3700-3620 B.C. to 2200-1830 B.C. none of them is younger than 1800 B.C. For the Early Historic period the 10 homogeneous and stratigraphically consistent dates range, in their uncalibrated form from 760-400 B.C. to 130-380 A.D. None of the uncalibrated consistent dates is younger than 130 A.D.

V.N. Misra, *Man and Environment* XXX(1): 54-60 [2005]
ME-2005-1A04

Towns, Villages and Desertion: Exploring the Early Medieval Phase in Indian Archaeology

Suchi Dayal

The early medieval period in Indian history is characterised by desertion of settlements in the period from the fourth to tenth centuries A.D. It is represented by the presence of a sterile layer at many urban sites. The problem of desertion has been researched well by historians who treat it as an aspect of 'urban decay', which the early medieval period witnessed on account of the decline of long distance trade. Historical research on the early medieval period has amply demonstrated that desertion of settlements was balanced by a continuous process of emergence of new settlements. However, it has been claimed that some regions, for e.g. the Deccan, were devoid of early medieval settlements. This, however, is a mere reflection of a major lacuna in archaeological research, and methodological surface surveys can, to a large extent, address this problem successfully. Further, only through meaningful archaeological research one can hope to find answers to such crucial issues as desertion of settlements, urbanism and rural complexity.

Suchi Dayal, *Man and Environment* XXX(1): 61-66 [2005]
ME-2005-1A05

Water Management Systems in Guhagar Taluka, Ratnagiri District, Maharashtra

Ashok Marathe and Viraj Shah

From the earliest times, humans have tried to tap water to make it available wherever there was scarcity because water being the most essential elements. There are innumerable direct and indirect evidences of different water management systems used in ancient societies. The data were collected on the types of water management systems prevalent in the village of Guhagar taluka in Ratnagiri district, Maharashtra. The survey included a thorough exploration of 22 villages. The survey has revealed the existence of mainly medieval structure remains, which are predominated by a variety of wells, step-wells, tanks and water channels. This study aims to bring into light the architectural features of these structures, to classify these into various types/sub-types and to chronologically date and compare these with other such structures from the different parts of Maharashtra and also in other regions. An attempt is made to explore the factors behind the occurrence of these structures in such a large number and to understand the historical context of these structures.

Ashok Marathe and Viraj Shah, *Man and Environment* XXX(1): 67-78 [2005]
ME-2005-1A06

For Jean Claude Gardin: Archaeology and the Long Lineages of Tradition

Shereen Ratnagar

This paper refers to a small body of work in order to scrutinize the way in which archaeologists of South Asia make inferences about long-enduring traditions. It suggests that archaeology, given its units and modes of analysis, may not be the social science that can give us a meaningful insight into traditions.

Shereen Ratnagar, *Man and Environment* XXX(1): 79-85 [2005]
ME-2005-1A07

Terrestrial Gastropod Shell Assemblage from the Mesolithic Cave Site of Muchchatla Chintamanu Gavi in the Kurnool District, Andhra Pradesh

Arati Deshpande-Mukherjee, M.L.K. Murty and G.L. Badam

Molluscan shells were recovered from the excavations conducted by M.L.K. Murty in the 1970s at Muchchatla Chintamanu Gavi (MCG II), a cave site in the Kurnool district of Andhra Pradesh. Five molluscan taxa of terrestrial origin are identified. The shells neither have any evidence of human activity nor do they represent food refuse. Hence these shells are considered as naturally incorporated into the deposit during the Mesolithic period. Presence of these species indicates a wet humid phase at the time of occupation.

Arati Deshpande-Mukherjee, *et al.*, *Man and Environment* XXX(1): 86-93 [2005]
ME-2005-1A08

Plant Economy at Ancient Mahorana, Sangrur District, Punjab (c. 2300 B.C. – A.D. 200)

Chanchala Srivastava

Food grains from Mahorana, have been recovered from Period IB (c. 2100 to 1900 B.C.), covering the gradual transformation from the Pre-Harappan Culture to the Bara Culture. Carbonised food grains and seeds comprising cereals, such as hulled barley, dwarf wheat, club wheat and bread wheat; two leguminous crops-lentil and hyacinth bean, and grape seeds have been recovered. The evidence of hyacinth bean at the site of Mahorana is the earliest evidence of its kind in India; and occurs in the Harappan context as garden crop, thereby revealing a great advancement in arbori-horticulture over general agricultural practices. Cultivation of grapevines in this region suggests that the Harappans in Punjab were a stable community (Saraswat 1990-91). In comparison to seed and fruit remains, wood charcoal is found frequently, in almost all cultural periods; *viz.* during the Pre-Harappan (Pd. IA), Bara (Pd. IB), Black-Slipped-cum-Painted-Grey-Ware (Pd. II) to Kushan (Pd. III) occupational periods at Mahorana. Anatomical investigations reveal the predominance of *Acacia* sp., *Albizia* sp., *Anogeissus* sp., *Cedrela toona* and *Ziziphus* sp., which typify arid conditions

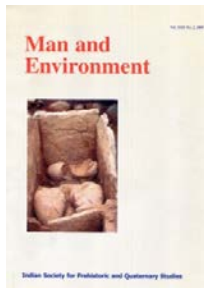
prevailing from Pre-Harappan to Kushan times; analogous to present day conditions. The exploitation of various timbers belonging to tree taxa – *Shorea robusta* (Sal), *Adina cordifolia* (Haldu), *Cedrela toona* (Toon), *Anogeissus latifolia* (Axle-wood), *Anogeissus pendula* (Dhau), *Acacia* sp. (Babul), *Albizia* sp. (Siris), *Holarrhena antidysenterica* (Kurchi); and *Zizyphus* sp. (Jujube) by ancient settlers of different cultural periods is also noted at the site. Through time, a progressive increase in the exploitation of timber taxa is seen along with an increase in the know-how of the use of quality timber like Sal during Kushan Period.

Chanchala Srivastava, *Man and Environment* XXX(1): 94-102 [2005]
ME-2005-1A09

Ethnographical, Historical and Archaeological Records: Tracing the Metalcraft tradition in West Bengal, Bihar, Jharkhand and Orissa

Pranab K. Chattopadhyay and Nupur Dasgupta

Chattopadhyay and Dasgupta, *Man and Environment* XXX(1): 103-105 [2005]
ME-2005-1A10



Volume XXX, No. 2 (July-December 2005)

Early Middle Palaeolithic: a Transition Phase between the Upper Acheulian and Middle Palaeolithic Cultures in the Orsang Valley, Gujrat

P. Ajithprasad

Miniature Acheulian bifaces are found associated with the Middle Palaeolithic flake industry showing a transition phase between the Acheulian and Middle Palaeolithic cultures in the middle Orsang valley. Distinctive features of the tool types and technology of this phase are described on the basis of morphometric attribute analysis. Stratigraphic context and interpolation of absolute dates of comparable strata from adjacent regions indicate a late upper Pleistocene date to the transition phase.

P. Ajithprasad, *Man and Environment* XXX(2): 1-11 [2005]
ME-2005-2A01

Perceiving the Landscape: Lithic Scatters in Ayodhya Hills, Purulia, West Bengal

Bishnupriya Basak

The location of microlithic sites/scatters and assemblage structure in the Ayodhya hills, are used as a case study in order to investigate how far perception of the landscape can be inferred. Indigenous communities have a rich and vibrant body of ritual, ceremonies, myths and symbols surrounding the hills and other natural features in the landscapes. This paper investigates how far ethnography can be used to offer insights into past perceptions. Archaeological, anthropological and culture-geographical approaches to landscape are drawn on, with a perspective that the landscape is a culturally constructed phenomenon.

Bishnupriya Basak, *Man and Environment* XXX(2): 12-23 [2005]
ME-2005-2A02

Biological responses to subsistence transitions in Prehistory: Diachronic Dental Changes at Chalcolithic Inamgaon

John R. Lukacs and Subhash R. Walimbe

A climate induced shift to arid conditions stimulated an adaptive response among Chalcolithic cultures (1400-700 B.C.) of the Deccan plateau, western India. Climate change

promoted higher levels of mobility, cultural adjustments, and increased dietary diversity at the site of Inamgaon. Prior study of enamel hypoplasia and bone growth in sub-adults shows that childhood health improved across this subsistence transition. This paper seeks to determine if other measures of human biological response to the stress of dietary change, such as dental caries, linear enamel hypoplasia (LEH), and tooth size, exhibit a change in concert with the shift from agriculture to semi-nomadic foraging at Inamgaon. If biological responses are discernible, are they consistent with theoretical predictions of Subsistence Transition Theory? The prevalence of dental caries and LEH, and mean tooth size were established: and values for Early Jorwe farmers (1400-1100 B.C.) were compared with Late Jorwe foragers (1100-700 B.C.). Permanent teeth exhibit a decrease in caries rates and an increase in tooth size across the transition, however the prevalence of LEH in permanent teeth remains unchanged. Deciduous dental caries rates and tooth size do not change across the transition, and appear to be less influenced by the subsistence shift, though enamel hypoplasia in deciduous teeth reveals a significant decline from farmers and foragers.

John R. Lukacs and Subhash R. Walimbe, *Man and Environment* XXX(2): 24-43 [2005]
ME-2005-2A03

A Late Harappan Port at Kindar Kheda on the Saurashtra Coast

A.S. Gaur and Sundaresh

During onshore exploration along the Saurashtra coast a Protohistoric site at Kindar Kheda was visited and a large number of artefacts were observed within agricultural lands. The potsherds noted here point to this representing a late Harappan settlement. The discovery of a stone anchor from the site, and the study of an ancient map suggests that this site might have served as an active port in past. This port was approachable by boat through creeks from Porbandar and Kindari (Visawada) till A.D. 1856; however, due to geomorphological changes, the creeks are today at distance from Kindar Kheda.

A.S. Gaur and Sundaresh, *Man and Environment* XXX(2): 44-48 [2005]
ME-2005-2A04

Excavations at Thandikudi, Tamil Nadu

K. Rajan, N. Athiyaman, M. Rajesh and M. Saranya

The explorations and excavations carried out in the pepper and cardamom growing area of the Lower Palani hills revealed continuous occupation from megalithic times to the present. The occurrence of dolmens, cists and urns point to the convergence of different cultural traits. Etched carnelian, quartz and gold beads; along with the large amount of iron objects recovered from the excavation suggest cultural contact with people in the plains, during the Megalithic period. The pattern of placing four urn burials directly on the floor of the cist, is encountered for the first time in Tamil Nadu. It is possible that spices and forest goods attracted the attention of traders. Inscriptional evidence indicates that trade guilds existed and that trade related disputes occurred at this site.

K. Rajan, *et al.*, *Man and Environment* XXX(2): 49-65 [2005]
ME-2005-2A05

Was Pattanam Ancient Muziris?

K.P. Shajan, V. Selvakumar and Robert Tomber

In the past settlements of the Early Historic period in Kerala were represented only in the texts with no evidence on the ground. Archaeological research has revealed the first Early Historic urban settlement of Kerala at Pattanam, represented by architecture, geological and etymological analyses suggest that Pattanam could be the port of Muziris, extolled by ancient writers for its vital role in the Indo-Roman (or Indian Ocean) trade network. This paper discusses the evidence from the Pattanam region and supports the identification of Pattanam with the ancient emporium of Muziris.

K.P. Shajan, *et al.*, *Man and Environment* XXX(2):66-73 [2005]
ME-2005-2A06

The Role of the State in the Maritime trade of Early Historic Bengal

Shahnaj Husne Jahan

Bengal Participated in a well-organised maritime trade of considerable significance in the Early Historic period. However, the role of the state in the organisation of this trade is still unclear. This paper discusses this issue, drawing on archaeological and literary evidence. The investigation shows that during the period under study, maritime trade of Bengal was privately controlled with varying degrees of state control; and that complementary relations existed between that state and private merchants who were organised into guilds.

Shahnaj Husne Jahan, *Man and Environment* XXX(2): 74-82 [2005]
ME-2005-2A07

Brahmana Settlements in a famine Zone: a Case-study of Shorapur-Doab in the Early Medieval Period

Suchi Dayal

The Shorapur Doab has been categorized as a famine zone. What is surprising is that despite being a famine zone, inscriptions of the early medieval period occurring at various villages of the region point to the presence of a high density of brahmana settlements in the past. Settlement pattern studies conducted in Tamil Nadu have shown that these brahmana villages, were, as norm, located in areas which could boast of ample agrarian and water resources. This paper investigates a marginal habitat and shows how brahmana villages were exploiting advantages of land and water to create prosperous agricultural tracts. The paper

further offers suggestions as to how such villages by their very location managed to successfully initiate colonization of the virgin tracts.

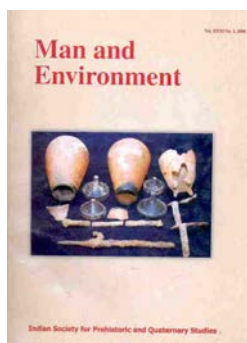
Suchi Dayal, *Man and Environment* XXX(2): 83-89 [2005]
ME-2005-2A08

Handedness: the Archaeological Record

Amitava Chowdhury and Manas K. Mandal

Data on handedness retrieved from the archaeological record reveals the ubiquity of right-handedness across cultures. A review of data collected from cranial and post-cranial indicators of handedness, artefact manufacture and use, mobility and parietal art, and external symbolic storage devices, unfolds the potential of handedness studies from archaeological remains. It helps understanding the evolution and peculiarity of cerebral and behavioural lateralization. This also opens a new vista for analysing and explaining specific traits in the archaeological record. Aspects of side-bias can lead to meaningful contribution to cognitive archaeology that has remained almost neglected in archaeological literature.

Amitava Chowdhury and Manas K. Mandal, *Man and Environment* XXX(2): 90-96 [2005]
ME-2005-2A09



Volume XXXI, No. 1 (January-June 2006)

From 'Banda' to 'Bailu' (the Hills to the Plains): An Ethnographic Model of Chenchu Settlement Systems in Nallamalai Hills, Andhra Pradesh for the Reconstruction of prehistoric Settlement Patterns

L. Anjana Reddy

This paper is an ethnographic study of Chenchu settlement types with respect to their plan and layout, the nature of their dwellings and other minor structures. It also documents the manner in which these settlements adapt to the surrounding landscape, with a view towards interpreting available archaeological evidence. In tracing the geographic and chronological transition of these Nallamalai hunter gatherers from the 'Banda' (hilly or rocky land) to the 'Bailu' (*plains* and valleys), it is the existence of present day traditional Chenchu settlements on this rocky undulating terrain that provide probable ethnographic parallels for studying Stone Age settlement patterns in the area. Studies show that this shift of settlements from the higher reaches of the Nallamalais to the lowlands, although rapid and wide spread, are relatively recent in the time-scale, as determined by archaeological evidence. This is coupled with the continued preference to locate many Chenchu settlements in the rocky and interior forest areas and in relative isolation. Thus, this paper attempt to elucidate the impermanence in the building techniques of existing dwellings and other vestiges of settlements like hearths, burials etc., in order to understand probable causes for their lack of survival in the archaeological context.

L. Anjana Reddy, *Man and Environment* XXXI(1): 1-18 [2006]
ME-2006-1A01

Evidence of Human Occupation from a Terrace dated to 7.8 kyr at Sakshal Pimpri, District Bid, Maharashtra

Sheila Mishra, Sushama G. Deo, Sonali Naik, P.P. Joglekar, Arati Deshpande-Mukherjee, Savita Ghate, Anupama Kshirsagar, and Utpala Adhav

Crude handmade pottery, animal bones and molluscan shells were found in ploughed field on the left bank of the river Sindaphana, opposite the village of Sakshal Pimpri. Radiocarbon dating of the molluscs gave an age of 7.8 kyr. The pottery, along with bones and burnt mud is found in ploughed field, while the shells occur as a discrete heap close to the river. The shells were broken and charred before deposition showing that their accumulation was a result of

human action. The pottery is similar to the “Neolithic” pottery reported from Patne by Sali (1996) as well as to early pottery from the Vindhya described by Pal (1986) as representing “Mesolithic” pottery.

A date of 14.2 kyr was obtained on shells from a gravel exposed 4 m below the terrace surface. Ostrich eggshell and microliths were found in this gravel. A cobbly-bouldery gravel, resembling high level gravel is found at the base of the alluvial sequence. An exposure of high level gravel is seen 4m above the Bindusara river, a tributary of the Sindaphana at Namalgaon, 20 km to the east of Sakshal Pipmri. A brief summary of our observations on the Quaternary geology of the area is given here.

Sheila Mishra, *et al.*, *Man and Environment XXXI(1)*: 19-26 [2006]
ME-2006-1A02

Excavations at Sisupalgarh 2005

R.K. Mohanty and M.L. Smith

The walled city of Sisupalgarh presents an ideal opportunity to examine the growth and development of urbanism in the Early Historic period (c. 3rd Century B.C. to 4th Century A.D.). Excavations in 2005 have concentrated on two areas of the site:- the habitation area within the walls and the upper portion of the rampart wall. Excavations within the habitation area were undertaken to provide information on domestic architecture within the fortification walls; and to expose further the area of architectural remains recovered in the 1948 excavation. To provide new material for chronological dating, a small trench in the habitation was also dug to the level of natural soil, with over 5 m of cultural deposits, including well-preserved faunal and botanical remains. Excavations at the top of the rampart revealed a stone and brick wall at the crest along with a considerable volume of pottery indicative of the use of settlement debris for the uppermost reconstruction of the city's encircling rampart.

R.K. Mohanty and M.L. Smith, *Man and Environment XXXI(1)*: 27-32 [2006]
ME-2006-1A03

Excavations at Bokhira (Porbandar) on the Saurashtra Coast

A.S. Gaur, Sundaresh and P.P. Joglekar

Excavations at Bokhira (Porbandar) on the Saurashtra coast revealed a Protohistoric settlement dating back to the mid 3rd millennium B.C. Four trenches were laid in agricultural land where a habitational deposit of 50 cm was noticed. A large quantity of pottery, animal bones and other antiquities similar to those reported from Bet Dwarka, Rojdi and Rangpur were found at the site. The place being close to a creek must have been suitable for maritime activities and would have served as a safe harbour. A few ancient jetties have been reported earlier along the Porbandar creek.

A.S. Gaur, *et al.*, *Man and Environment XXXI(1)*: 33-39 [2006]
ME-2006-1A04

Man-Land Relationships in Ancient Coastal Karnataka

C.B. Patil

Coastal Karnataka has evidence of Palaeolithic, Mesolithic, Neolithic, Megalithic and Early Historic cultures. This coastal strip has also witnessed sea level fluctuations and climate changes including variations in vegetation. This paper attempts to examine the distribution of sites of different cultural periods and looks at how different cultures adapted to changing environments. This is done taking into consideration recent investigations in the region. The paper also stresses on the use of a multidisciplinary approach towards the study of past cultures.

C.B. Patil, *Man and Environment* XXXI(1): 40-47 [2006]
ME-2006-1A05

A Gazetteer of Archaeological Sites in Rajasthan (From Palaeolithic to Early Historic)

V.N. Misra

V.N. Misra, *Man and Environment* XXXI(1): 48-96 [2006]
ME-2006-1A06

Man and Environment, 1995-2004: A Bibliometric Study

Keshava and Sujatha Kumbhar

A bibliometric study of all articles published in *Man and Environment* from 1995-2004 was carried out. Around 17 to 26 articles were published per volume, with an average of 29-37 references per article. The number of single authored papers is slightly higher, being placed at 55.68% or 116 papers out of a total 205 during the period of our survey. The prolific author is P.P. Joglekar who has contributed 10 articles. Around 80% of the authors are geographically affiliated to India; and the highest number (38.35%) of authors represent universities; the most productive institution being the Deccan College Post-Graduate and Research Institute, Pune.

Keshava and Sujatha Kumbhar, *Man and Environment* XXXI(1): 97-103 [2006]
ME-2006-1A07

Discovery of a Megalithic Rock-cut Cave at Kodakkal, District Malappuram, Kerala

Ajit Kumar

Ajit Kumar, *Man and Environment* XXXI(1): 104-107 [2006]
ME-2006-1A08

A Preliminary Report of Excavations at the Satavahana Site of junnar, District Pune, Maharashtra

Shreekant S. Jadhav

Shreekant S. Jadhav, *Man and Environment* XXXI(1): 108-113 [2006]
ME-2006-1A09

Samudra and Sarasvati in the Ṛgveda

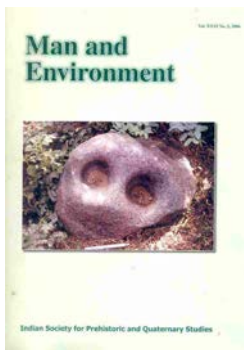
Nicolas Kazanas

Nicolas Kazanas, *Man and Environment* XXXI(1): 114-120 [2006]
ME-2006-1A10

Ṛgvedic Pur

Nicolas Kazanas

Nicolas Kazanas, *Man and Environment* XXXI(1): 121-125 [2006]
ME-2006-1A11



Volume XXXI, No. 2 (July-December 2006)

Megalithic High-tin Bronzes: Ethnoarchaeological and Archaeometallurgical insights on Manufacture and Possible Artistic and Musical Significance

Sharada Srinivasan

The Megaliths of Peninsular and southern India represent one of the enigmatic aspects of Indian archaeology, with few burial-cum-habitation sites having been uncovered near cairns or burials. Archaeometallurgical investigations by the author on a range of thin vessel fragments from a range of megalithic sites such as Adichanallur and the Nilgiris in Tamil Nadu, and Mahurjhari in the Vidarbha region of the early to mid 1st millennium B.C. point to the use of binary copper tin alloys with a higher content of tin. The sites in the Nilgiris and at Adichanallur in particular, showed well developed use of wrought hammered and quenched higher tin beta bronze (with around 23% tin) and rank amongst the finest earliest examples of this craft from anywhere in the world. With extraordinary rim thinness of up to 0.2 mm. Although the provenance of some of the fine Nilgiri bowls was previously thought to be of foreign origin, original ethnoarchaeological and archaeometallurgical studies conducted by the author have established, partly in previous papers (Srinivasan 1994; Srinivasan and Glover 1995; Srinivasan and Glover 1997) and partly here, that these could well have been of indigenous manufacture. This is seen from comparisons with surviving rare crafts for making high-tin bronzes in Kerala which are amongst the very few well reported studies of such craft survivals in the world. Evidence of slag from co-smelting copper and tin ores was found by the author from Kalyadi in Karnataka, which suggests that there may have been minor local tin resources in South India which could have been exploited (Srinivasan 1997a). This paper explores some further aspects of the technology and related archaeological issues, and explores significance of this intriguing material culture. It is pointed out from ethnographic comparisons with high-tin bronze bowl making traditions in Kerala, that the rings, the knob-base, the polish and fluted shapes seen in the Nilgiri and Adichanallur bowls could have been part of a local tradition. Apart from artistic significance it is also pointed out that since the traditional high-tin bronze bowls from Kerala are known as *talavetta* or musical vessels, it is also possible that the megalithic high-tin bronze bowls could have had musical significance. Quenched high-tin beta bronze alloy (23% tin) is still used to make cymbals in parts of northern Kerala. A proclivity for musical materials in south Indian prehistory may perhaps be postulated given that Boivin (2004) has argued that rocks from Neolithic Kupgal has percussive functions. Thus the paper well demonstrates the usefulness of ethnoarchaeological approaches in archaeological and archaeometallurgical studies.

Sharada Srinivasan, *Man and Environment* XXXI(2): 1-8 [2006]
ME-2006-2A01

Flood Plain Record of the Southwest Indian Monsoon during the last Glacial

Dhananjay A. Sant, Govindan Rangarajan, K. Krishnan, N. Basavaiah, Chintan Pandya, Mitesh Sharma and Yogi Trivedi

Rapid oscillation in the intensity of the Southwest Indian monsoon during the last glacial phase have been inferred for the first time, from newly generated continental records from the site of Bhimpura, located in the Mahi river flood plain in the tropical semi-arid parts of western India. The flood plain sediment belonging to the last Glacial is characterized using grain size, degree of sorting, sediment facies, magnetic susceptibility, carbonate percentage (calcrete, CaCO₃ and calcite), opaque magnetic heavy minerals, common rock forming minerals, and clay minerals percentages. Synthesizing these climate sensitive variables, seven flood periods and non-flood periods are identified. These episodes reflect strong and weak monsoonal phases at a time scale of a few thousand years.

Dhananjay A. Sant, *et al.*, *Man and Environment XXXI(2)*: 9-20 [2006]
ME-2006-2A02

Early Agriculture in Orissa: Some Archaeobotanical Results and Field Observations on the Neolithic

E.L. Harvey, D.Q. Fuller, R.K. Mohanty and Basanta Mohanta

The development of agricultural communities is poorly understood in the state of Orissa. This is not due to lack of archaeological sites, because there appear to be many, but the result of no systematic environmental sampling and flotation. Orissa is potentially an important area in terms of agricultural development and may be crucial for understanding broader patterns of early agriculture in India as a whole. A number of crops may have originated in this region including rice, pigeonpea, urd and mung bean, several gourds, and root crops such as taro and yams. The investigations into these particular issues began with intensive field explorations and the recovery of archaeobotanical samples from a number of sites across the state by the Deccan College, Pune. Preliminary results of analysis for macro-botanical remains from some of these sites are presented here along with a review of the types of sites found so far and a summary of what this means in terms of the development of agricultural communities in this area.

E.L. Harvey, *et al.*, *Man and Environment XXXI(2)*: 21-32 [2006]
ME-2006-2A03

Settlement Pattern of the Predecessors of the Early Harappan at Bhirrana, District Fatehabad, Haryana

L.S. Rao

The discovery of the Hakra ware settlements in the Cholistan region of Pakistan, and their stratigraphic occurrence below the Kot Dijian phase at Jalilpur near Multan, enables one to situate the Hakra ware cultures as being predecessors of the Early Harappans. In India ,

Hakra wares are reported to be associated with wares of the Early Harappan period as noted at excavations at Kalibangan, Banawali, Rakhigarhi and Kunal. The Bhirrana excavation has revealed, for the first time, an independent stratigraphic existence of the Hakra wares deposit underlying that of the Early Harappan. This paper deals with the settlement pattern and the other related aspects of the Hakra wares culture.

L.S. Rao, *Man and Environment* XXXI(2): 33-42 [2006]
ME-2006-2A04

Lohari Ragho – a Harappan Satellite Site Revisited

Tejas Garge

While dealing with the distribution of cultural phenomena over space and in a particular time bracket, it is generally assumed that there is an unchanging relationship between parent and satellite archaeological sites. If a parent urban settlement is engaged in industry and trade, its satellites are thought to have been engaged in basic subsistence activities and are considered 'feeder' settlements. The present case study provides new insights into prehistoric economy where a reciprocal relationship existed between parent and daughter settlements.

Tejas Garge, *Man and Environment* XXXI(2): 43-49 [2006]
ME-2006-2A05

Biographies of the Skeleton: Pathological Conditions at Balathal

Gwen Robbins, Veena Mushrif, V.N. Misra, R.K. Mohanty and V.S. Shinde

The small assemblage of human remains from Balathal (5 adult individuals) presents a unique opportunity to examine the biocultural characteristics of people from the Ahar Culture of Chalcolithic and Early Historic Rajasthan. This small sample represents the first collection of human remains to be published from this chrono-cultural context in Rajasthan. Although the sample size is small, and thus no palaeodemography or biodistance studies will be attempted, there is a wealth of information about lifestyle in the Chalcolithic period presented in pathological conditions of the skeletons. Within this collection, we have found evidence for cervical and thoracic spondylosis, vertebral compression fractures, degenerative joint disease, a lunate fracture, a fracture of the anterior ischiopubic ramus, and dental disease. In addition, skeletal remains from an Early Historic occupation of the site were found buried in a posture that has been described as reminiscent of the Samadhi position of modern Hinduism. This paper describes the human remains and the pathological conditions that were observed during our investigation in the early part of 2001.

Gwen Robbins, *et al.*, *Man and Environment* XXXI(2): 50-65 [2006]
ME-2006-2A06

Palas Leaf Impression on Burial Pot from Chalcolithic Utawad, Madhya Pradesh

S.B. Ota and Prabhash Sahu

Excavations at the Chalcolithic site at Utawad revealed two cultural phases. Phase II revealed the evidence of non-sepulchral symbolic pot burials. The significance of these burials lies in the *palas* leaf impression found at the base of the burial pots. Since the *palas* leaf is mentioned in the Satapatha Brahmana, Sruta and Asvalayana Grhya Sutra, an attempt has been made to interpret it in context of Chalcolithic burials at Utawad.

S.B. Ota and Prabhash Sahu, *Man and Environment XXXI(2)*: 66-69 [2006]
ME-2006-2A07

A Study of Site Catchment Analysis of Gilund: A Chalcolithic Settlement in the Banas Basin, Rajasthan

Debasri DasGupta

Site catchment analysis helps us in understanding the level of technological development of a society by reconstructing the interrelationship between man and the environment. It studies the relationship between technology and natural resources lying within the catchment area of an archaeological site. Catchment area is defined as the area exploited by a population for its natural resources and which lies within a reasonable walking distance from the site. In this paper, a study of site catchment analysis has helped in understanding Gilund as an agro-pastoral site which had flourishing trade contacts with other sites within and outside the 10 km catchment area.

Debasri DasGupta, *Man and Environment XXXI(2)*: 70-74 [2006]
ME-2006-2A08

Faunal Assemblages from Kanenur , Kaveripur and Kannikere: Iron Age/ Early Historic Sites in Karnataka

P.K. Thomas, Arati Deshpande-Mukherjee and V. Shobha

Although a large number of iron Age/Early Historic sites have been reported in Karnataka, there is very little information regarding the faunal material found at these sites. Recent explorations and excavations in the Mysore district (undivided) of Karnataka conducted by the third author as part of her Ph.D. dissertation, have brought to light many sites of this period. Seventeen new sites were located by her, of which three sites namely Kanenur, Kaveripura and Kannikere have yielded faunal remains. This paper presents the results of faunal studies conducted at these sites. The results indicate a heavy dependence on animal for food and other activities.

P.K. Thomas, *et al.*, *Man and Environment XXXI(2)*: 75-80 [2006]
ME-2006-2A09

Scientific Rationale of the Underground Storage System in Ancient India (up to c. 550 A.D.)

Sudarsana Choudhury (Bhaduri) and Tushar Jash

The underground storage system was practised from ancient times and is still prevalent in some part of India. A brief description of different types of underground storage systems practised in north India and the Deccan till c. 550 A.D. is given here. An attempt has been made to investigate the scientific rationale behind this type of storage system. It is argued that this type of storage technology is environmental benign.

Sudarsana Choudhury (Bhaduri) and Tushar Jash, *Man and Environment XXXI(2)*: 81-89 [2006]
ME-2006-2A10

Towards an Understanding of Medieval Glazed Pottery manufacture from Lashkarshah, Khambhat, Gujarat

Kuldeep K. Bhan

This paper discusses glazed pottery manufacture on the basis of the craft residue collected during surface survey of a medieval production centre at Lashkarshah, Khambhat, Gujarat. Though glazed pottery has been reported from a large number of sites in India, Lashkarshah is the only site reported which has revealed evidence indicating its importance as major production centre. The reason for not being able to locate other production centres elsewhere is possibly owing to the unfamiliarity of archaeologists with craft indicators. This paper also tries to address these questions; and highlights various craft indicators archaeologists should look for in order to identify glaze manufacturing centres.

Kuldeep K. Bhan, *Man and Environment XXXI(2)*: 90-107 [2006]
ME-2006-2A11