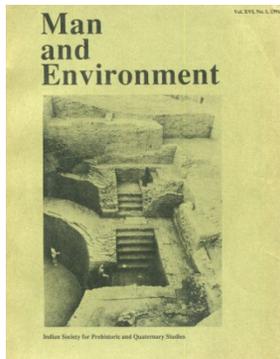


Man and Environment

ABSTRACTS

Volume XVI, No. 1 (January-June 1991)



Ancient Indian Iron Metallurgy

K.T. M. Hegde

This paper presents a brief summary of the author's work on ancient Indian iron metallurgy. Iron technology in India developed on the basis of a long tradition of successful copper technology. By the 4th century B.C., knowledge of iron technology had spread all over the country. The Asokan pillars and the cave temples bear testimony to the excellent quality of ancient Indian iron technology and tools. Aspects of the development of this technology are described in this paper.

K.T.M. Hegde, *Man and Environment* XVI(1): 1-3 [1991]
ME-1991-1A01

Planned Cooperation between Archaeologists and Scholars of Ancient Literature – a Crying Need

B.B. Lal

This paper lays emphasis on the importance of and necessity for close cooperation between archaeologists and scholars of ancient literature to achieve a better understanding of India's past. The author gives examples from the excavations of Hastinapur, Kausambi, Srirangapur and Sisupalgarh and demonstrates how archaeological findings from these sites acquire a new and fuller meaning when they are seen against the background of descriptions in the *Brahmanas*, *Epics*, *Puranas* and Kautilya's *Arthashastra*. The author also makes a plea for renewed excavations at the site of Sisupalgarh to find out how the criteria given in the *Arthashastra* for the planning of a capital were followed at this site and to demonstrate the value of planned field work on the basis of the data obtained from literary sources.

B.B. Lal, *Man and Environment* XVI(1): 5-21 [1991]
ME-1991-1A02

Blade and Blade Tool Assemblages of the Upper Palaeolithic and Mesolithic periods – a Case Study from the Mid-Kasai Valley in the Jhargram Sub-Division of Midnapur District, West Bengal

Asok Datta

Blades and blade tools constitute the major elements of the Stone Age industry in West Bengal. But so far no attempt has been made by any scholar to study the evolution or succession of the blade tool industry from the Upper Palaeolithic to the Mesolithic period. This paper aims at solving this issue through a case study in the mid-Kasai valley which shows that the Upper Palaeolithic blade tools gradually evolved into microlithic blade tools of the Mesolithic culture.

Asok Datta, *Man and Environment* XVI(1): 23-31 [1991]
ME-1991-1A03

Some Basic Issues Related to the Metric Analysis of Stone Tools

P.P. Joglekar and M.S. Vaishampayan

It is seriously felt that the statistical techniques employed in the study of stone artefacts from prehistoric sites in India, lack necessary methodological care. To overcome this serious lapse on the part of archaeologists, the standard protocol for data analysis is described in this paper, and involves the checking of assumptions, and choosing the variables and appropriate test procedures. Such standard protocol, if adhered to, would lead to a more meaningful interpretation of the raw data.

P.P. Joglekar and M.S. Vaishampayan, *Man and Environment* XVI(1): 33-35 [1991]
ME-1991-1A04

Some Archaeology of Dharmapuri District, Tamil Nadu

K. Rajan

Archaeological sites in Dharmapuri District, Tamil Nadu range in age from the Early Palaeolithic to the Megalithic. Recent explorations have brought to light a Lower Palaeolithic site, 42 Neolithic sites and about 170 Megalithic ones. Trial excavations have yielded data on settlement patterns and burial practices during the Megalithic Period. In addition the rock paintings which occur in the vicinity of Megalithic burials and on the orthostats of dolmens have also been described.

K. Rajan, *Man and Environment* XVI(1): 37-52 [1991]
ME-1991-1A05

Rangpur Seal – Probable Egyptian Connection of the Harappan Civilization

Rabindranath Bhattacharya

The seal under discussion was found at the site of Rangpur in Saurashtra. It is round, made of steatite and bears motifs on both sides but no script. It is more in the nature of a seal-amulet

as the rim is pierced so that it can be suspended on a string. The figures on it consist of a coiled snake, Apis-like bulls and a throne or chair suggestive of Egyptian influence. The author discusses the probable Egyptian connection of the seal and draws the attention of scholars to a potential line of research.

Rabindranath Bhattacharyya, *Man and Environment* XVI(1): 53-57 [1991]

ME-1991-1A06

Archaeology of Kumaon: Problems and Prospects

D.P. Agrawal, Diva Bhatt, Sudha Malaiya and Jeevan Kharkwal

Little is known of the archaeology of this area prior to the 8th century. However, work carried out in the last two decades provides evidence for Palaeolithic and megalithic cultures, as well as for a number of painted rock shelters. This paper summarises the work done to date and draws attention to the research potential of the area.

D. P. Agrawal, *et al.*, *Man and Environment* XVI(1): 59-63 [1991]

ME-1991-1A07

Archaeology Palaeovegetation and Palaeoenvironmental Inferences from the Quaternary Palynostratigraphy of the Western Indian Plains

Chhaya Sharma and M.S. Chauhan

This paper reviews the pollen analytical work carried out in Rajasthan and Gujrat. Studies on desert lakes situated in Rajasthan show that before 10,000 years B.P., extremely arid conditions with strong winds prevailed in the region, resulting in the in the deposition of sand dunes and the formation of inland basins. Stabilisation of sand dunes and the advent of herbaceous vegetation coupled with freshwater conditions in the lakes is evident between 10,000-9,000 years B.P. Except for the increased annual precipitation, the climatic and vegetational conditions remained the same between 9,500 and 5,000 years B.P. The lakes started turning saline and arboreal elements entered the area between 5,000 and 3,000 years B.P. The present-day conditions began 1,200 years B.P. In Gujrat, the early Holocene vegetation continued with herbaceous elements. The invasion of an arboreal element, around 7,000 years B.P. declined around 5,000-4,000 years B.P. Thereafter, savannah conditions prevailed.

Chhaya Sharma and M.S. Chauhan, *Man and Environment* XVI(1): 65-71 [1991]

ME-1991-1A08

Archaeobotanical Investigations at Oriyo Timbo (1989-1990): A Post-Urban Site in Gujrat

N. Seetha Reddy

This paper emphasises the importance of intensive sampling and the use of an efficient plant recovery system to help provide a richer understanding of past subsistence economies and reports on the initial investigations of ancient plant remains at the post-urban site of Oriyo

Timbo, Bhavnagar District, Gujarat. There is strong evidence for the use of summer crops. This includes *Eleusine*, *Panicum*, *Setaria*, a variety of Legumes and weeds. Whether these crops were cultivated at the site or brought to the site from elsewhere, is still an unresolved question.

N. Seetha Reddy, *Man and Environment* XVI(1): 73-83 [1991]

ME-1991-1A09

Biological Remains from Neolithic and Early Historic Sites in Cuddapah District, Andhra Pradesh

P.C. Venkatasubbaiah and M.D. Kajale

This paper embodies results of the dry and wet separation techniques carried out in the laboratory on the habitational soil samples of the Neolithic site at Balijapalle and the Early Historic site at Peddamudiyam in Cuddapah District, Andhra Pradesh. The biological remains from Balijapalle include *Abutilon* type, indeterminate seeds, weed seeds, and various insect parts, whereas grains of red gram (*Cajanus cajan* Millsp. type) and Lady's finger type (*Ablemoschus* type) have been recovered from Peddamudiyam. This is the only evidence of ancient grains from Cuddapah District. This paper also reviews these findings in the light of grain remains recovered from other Protohistoric and Early Historic sites of South India.

P.C. Venkatasubbaiah and M.D. Kajale, *Man and Environment* XVI(1): 85-97 [1991]

ME-1991-1A10

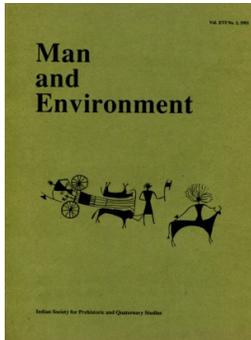
A Note on Megalithic Human Skeletal Remains from Kanyathirtham, Cuddapah District, Andhra Pradesh

S.R. Walimbe, P.B. Gambhir and P.C. Venkatasubbaiah

Trial excavations carried out at the Megalithic site of Kanyathirtham in Cuddapah District, yielded evidence of two human skeletons, one child and one adult. The skeletal elements are extremely fragmentary and no morphometric assessment is possible. However, the adult specimen exhibits pathological lesions of exposure to fire in "flesh-on" or "green" condition on many bones. This evidence, supported by under-representation of many parts and scattered condition of bones in the sarcophagus, indicates the secondary nature of the burial. Similar evidence is reported from Vidarbha Megaliths. Some odontometric data is also reported in this article.

S.R. Walimbe, *et al.*, *Man and Environment* XVI(1): 99-101 [1991]

ME-1991-1A11



Volume XVI, No. 2 (July-December 1991)

From the Cave Art of the Reindeer Hunters to the Rock Art of the Kangaroo Hunters *Michel Lorblanchet*

Most researcher studying rock art throughout the world, both “new archaeologists” as well as “traditional” ones, have all rejected ethnographic parallels the way they were used at the turn of the century. The internal analysis of the evidence, as proposed twenty-five years ago by A. Laming-Emperaire and A. Leroi-Gourhan, is an universal method which has been progressively improved in recent years. It is based on two complementary processes: recording of art, the equivalent of an excavation and statistical analysis. Internal analysis can, however, still benefit by having light cast on it from outside sources. The ethnographic, archaeological and aesthetic comparison of these two independent but partly contemporaneous entities, the rock art of the kangaroo hunters and the cave art of reindeer hunters demonstrate not laws but general principles of human symbolic behaviour. They reveal universality, a certain continuity in the artistic creations of the hunter-gatherer societies as well as significant differences. It is important to know all these because the art of the Australians tell us something about the art of our own origins, even though their differences, and vice versa. This approach is in keeping with a major trend in present-day historical research, that of a ‘comparative history’, a search for similarities and differences in time and space.

Michel Lorblanchet, *Man and Environment* XVI(2): 1-38 [1991]
ME-1991-2A01

Wheeled Vehicles and Mounted Animals in Prehistoric Indian Rock Art *Erwin Neumayer*

This paper presents detailed evidence for wheeled transport and mounted animals as depicted in prehistoric rock art mainly from Central and Southern India. The author uses the technological innovations as well as the introduction of horse in rock paintings to suggest a relative chronology for rock art.

Erwin Neumayer, *Man and Environment* XVI(2): 39-70 [1991]
ME-1991-2A02

Rock Paintings of Budagavi, Anantapur District, Andhra Pradesh *N. Chandramouli*

This paper presents a stylistic analysis of the rock paintings of Budagavi, a Neolithic rock art site in Andhra Pradesh. This aspect has thus far been neglected in studies of South Indian

rock art. The painted humped bulls at Budagavi would appear to be quite distinct from any of the other humped bulls in South Indian Neolithic rock art and represents an early phase of the Neolithic art of South India.

N. Chandramouli, *Man and Environment* XVI(2): 71-80 [1991]
ME-1991-2A03

Scenes of Head Hunting in the Rock Art of the Pachmarhi Hills

Meenakshi Dubey

This paper describes the author's discovery of painted rock shelters in the Pachmarhi hills and, in particular, discusses scenes depicting head hunting.

Meenakshi Dubey, *Man and Environment* XVI(2): 81-85 [1991]
ME-1991-2A04

A Horn-Headed Human Figure on a Harappan Jar from Padri, Gujarat

Vasant Shinde

Horn-Headed figures, earlier reported from two Harappan sites in Sind and Rajasthan, have been interpreted by some as the representation of *pasupati*, "Lord of Beasts". The discovery of a more or less similar horn-headed figure from another Harappan site at Padri in Gujarat in, therefore, significant and suggests that they were connected with the religious belief of the people and perhaps were worshipped almost all over the Harappan empire. The figure on the jar from Padri would appear to be that of a male and is unique for its artistic execution.

Vasant Shinde, *Man and Environment* XVI(2): 87-89 [1991]
ME-1991-2A05

De Terra and Paterson and the Soan Flake Industry: A New Perspective from the Soan Valley, Northern Pakistan

R.W. Dennell and H.M. Rendell

The paper re-examines the evidence presented by De terra and Paterson (1939) for the Pleistocene and palaeolithic sequence of the Soan Valley, in what is now Pakistan. We conclude that none of their conclusion can be sustained. We find no evidence that river terraces exist in the Soan Valley, and reject De Terra's relative chronology for the sequence of claimed terraces and associated exposures of palaeolithic artefacts. We also find no support for Peterson's claims of a pre, an early, and a late Soan Flake tradition: none of the assemblages he studied can be dated, even relatively to one another and most are probably mixtures of materials of different ages. We suggest that a fresh start is made, based primarily upon the absolute dating of artefacts within secure geological contexts.

R.W. Dennell and H.M. Rendell, *Man and Environment* XVI(2): 91-99 [1991]
ME-1991-2A06

The Mesolithic and Hunter-Gatherers: Myths and Meanings

T. Douglas Price

Recent investigations of the European Mesolithic have brought to light evidence from southern Scandinavian to show that this period can no longer be viewed as one of degeneration or decline. On the contrary it was more likely one of innovation, interaction and successful adaptation among the early post-glacial hunter-gatherers of northern Europe.

T. Douglas Price, *Man and Environment* XVI(2): 101-107 [1991]
ME-1991-2A07

Ancestry of *Bos* species: Myth and Reality III. Biostatistical Consideration

P.P. Joglekar and P.K. Thomas

The metrical data available on Pleistocene and Recent bovine bones were examined using bivariate and multivariate statistical methods. Bivariate analysis indicated that the Pleistocene bones are statistically indistinguishable from the recent forms. Principal component analysis showed that the Pleistocene specimens are generally larger, but with respect to shape are not different from the recent one.

P.P. Joglekar and P.K. Thomas, *Man and Environment* XVI(2): 109-114 [1991]
ME-1991-2A08

Archaeological Wood Remains from the Prehistoric Cave Site at Betamcherla (Muchchatla Chintamanu Gavi), District Kurnool, Andhra Pradesh

M.D. Kajale, M.L.K. Murty, B.L. Sharma, R. Dayal and R. Vijendra Rao

This paper reports the results of an anatomical study on the wood remains of two species, *Cassia cf fistula* Linn. and *Acacia cf chundra* Willd. recovered from the early Holocene deposits at Mesolithic Betamcherla (Muchchatla Chintamanu Gavi), District Kurnool, Andhra Pradesh.

M.D. Kajale, *et al.*, *Man and Environment* XVI(2): 115-119 [1991]
ME-1991-2A09



Volume XVII, No. 1 (January-June 1992)

We Archaeologists and Society

B.B. Lal

B.B. Lal, *Man and Environment* XVII(1): 1-6 [1992]
ME-1992-1A01

The Composition and Smithery Techniques of Copper Artefacts from Nagwada – A Preliminary Study

Rajam Seshadri

Samples of copper artefacts recovered from the stratified horizons of excavations at Nagwada, a mature Harappan site in North Gujarat, were subjected to chemical and metallographic analyses in order to locate the provenance of the raw material and to reconstruct the smithery techniques. Studies were carried out using energy dispersive X-ray micro analysis, atomic absorption spectrophotometry and reflected light microscopy. These analyses have revealed that the axes were made of pure unalloyed copper, while the chisel was of bronze. It was also observed that the axes were cast in a smooth well-ventilated mould while the chisel was fabricated by simply cold hammering it to the required shape.

Rajam Seshadri, *Man and Environment* XVII(1): 7-12 [1992]
ME-1992-1A02

The Phenomenon of River Migration in Northern Tamil Nadu – Evidence from Satellite Data, Archaeology and Tamil Literature

S.M. Ramasamy, V. Venkatasubramanian, S. Riaz Abdullah and S. Balaji

Satellite photographs depict exciting evidence of the migratory melodrama of river systems. A study has been conducted in parts of Tamil Nadu using IRS-IA satellite pictures, archaeology and Tamil literature, which reveals that from the Pleistocene to 2700 years B.P. the river Kaveri flowed in a northeasterly direction from the Stanley Reservoir via Chinnar, Palakkodu, Mattur, Tiruppathur (Tirupattur), Gudiyatham (Gudiyattam), vellore and Walajapet to meet the sea at Madras. From 2700 to 2300 years B.P. it flowed via Uttangarai and Tirukovilur to meet the Bay of Bengal near Pondicherry, over which the present-day Ponnaiyar is misfit stream. From 2300 to 1300 years B.P. it has flowed via Erode, Tirukampuliyur, Alagarai, Tiruchy, Kiranur and Pudukkottai meeting the sea in the region where the present-day Agniyar and Ambuliar meet the sea. Subsequently, between 1600-1300 years B.P. the Kaveri flowed along the present-day tract of the Vennar and Vettar, after

which it seems to have flowed as the Kodamurutti, Arasalar and Palankaveri from 1300 to 1000 years B.P. From about 900 years B.P. it flowed via Tirupurampayam (Tirupurambiyam), Achalpuram till around 750 years B.P. it stabilised as the Colliroon (Kollidam). Such periods and phases of river migration as well as their implications in the search for archaeological remains are discussed in this paper.

S.M. Ramasamy, *et al.*, *Man and Environment* XVII(1): 13-25 [1992]
ME-1992-1A03

Possible Palaeoclimatic and Climatostratigraphic significance of the Conglomerates of the Upper Bakhtiari Formation, Foot Hill Zone of Iraq

A.S.A. Lateef

This paper uses an amalgam of data obtained from regional geological mapping preliminary palaeomagnetic investigations to stress the importance of the palaeoclimatic factor in the accumulation of the conglomerates of the Upper Bakhtiari Formation (and its counterparts) in Iraq and the adjoining areas. The results suggest that a related pluvial phase commenced around 2.47 Myr ago i.e., shortly after the Matuyama/Gauss boundary, and is thus coeval with the important palaeoclimatic threshold found in other parts of the world. This, if correctly interpreted, may potentially prove valuable for choosing the Pliocene/Pleistocene Boundary for continental sequences of the Middle East.

A.S.A. Lateef, *Man and Environment* XVII(1): 27-32 [1992]
ME-1992-1A04

Sequence Stratigraphy of the Surface Quaternary Deposits in the Semi-Arid Basins of Gujarat

L.S. Chamyal and S.S. Merh

The Quaternary geology of the semi-arid regions of Gujarat is to be found within three major river basins, namely, the Lower Narmada, the Mahi and the Sabarmati. The Lower Narmada Quaternary deposits are divisible into three formations, the Tilakwada, Ambali and Broach Formations. Likewise, the Mahi and Sabarmati Quaternaries are also divisible into the Raika, Shihora and Timba Formations (Mahi), and the Hirpura, Vijapur and Valasna Formations (Sabarmati). Midway through the Quaternary succession there is a conspicuous red soil (rubified) horizon which has been considered as a marker horizon for stratigraphical correlations between and among three basins. The composite succession appears to date back to the Middle Pleistocene.

L.S. Chamyal and S.S. Merh, *Man and Environment* XVII(1): 33-40 [1992]
ME-1992-1A05

Phosphorus Analysis of Soils from Archaeological Sites in the Mid-Central Himalaya and Ganga-Yamuna Doab

Vinod Nautiyal, Y.S. Farswan and J.S. Rawat

This paper reports the results of phosphorus estimation of soils from archaeological sites in the Garhwal Himalaya and the Ganga-Yamuna Doab. The analyses have been undertaken to ascertain the concentration of different fractions of phosphorus in anthropogenic sediments. The data has been examined statistically to establish the correlation between different fractions of phosphorus. The study confirms that the total phosphorus was enriched by the level of organic phosphorus at the PGW site of Purola. The results from explored sites also confirm the potential of phosphorus analysis in locating archaeological sites.

Vinod Nautiyal, *et al.*, *Man and Environment* XVII(1): 41-50 [1992]
ME-1992-1A06

Ancestry of *Bos* species: Myth and Reality IV. The Origins of Humped Cattle

P.P. Joglekar and P.K. Thomas

Ancient wild cattle were widely distributed and divided into a number of species and subspecies. It is likely that the ancestor of cattle all over the world was a humpless form which later gave rise to various subspecies. The origin of humped cattle in Asia was possibly coupled with a mutation of the gene responsible for controlling the size of the hump. The extinction of wild cattle during the Holocene in India cannot be explained as a result of either environmental factors or over-hunting. The mechanism of intra-specific competition had possibly replaced the ancient wild form in Asia. Thus the zebu probably originated from one of the subspecies of *Bos primigenius*. The very idea of the extinction of *Bos nomadicus* appears to be without proper foundation.

P.P. Joglekar and P.K. Thomas, *Man and Environment* XVII(1): 51-54 [1992]
ME-1992-1A07

Neolithic Faunal Remains from the Central Penner Basin, Cuddapah District, Andhra Pradesh

P.C. Venkatasubbaiah, S.J. Pavankar and P.P. Joglekar

A report on faunal material discovered during explorations and trial excavations in Cuddapah District, Andhra Pradesh, 1986-1990.

P.C. Venkatasubbaiah, *et al.*, *Man and Environment* XVII(1): 55-59 [1992]
ME-1992-1A08

The Ancient Gem Industry in Cambay

R.V. Karanth

Gem cutting in Cambay can be traced back to early historic times. This tradition appears to have continued through protohistoric, historic and medieval times to the present day with a

major change in lapidary processes at the beginning of the 20th century owing to mechanisation. Some of the steps followed for manufacturing beads at the beginning of 20th century were significantly different from the present day techniques of sawing, cutting rings and hollowed objects, grinding and even tumbling. While the introduction of electricity about five decades ago also brought about considerable changes in some of the earlier, more laborious processes, others like colour enhancement by heating, shaping by chipping and perforating by using a bow-drill are some of the techniques that continued into the present without any modification.

R.V. Karanth, *Man and Environment* XVII(1): 61-70 [1992]
ME-1992-1A09

The Pre-Harappan Period at Prabhas Patan and the Pre-Harappan Phase in Gujarat

M.K. Dhavalikar and Gregory L. Possehl

This paper discusses new data brought to light by recent excavations at Nagwada, Dholavira and Prabhas Patan and re-examines the view that the earlier village communities of Gujarat are associated with the mature/Urban phase of the Harappan in Gujarat.

M.K. Dhavalikar and Gregory L. Possehl, *Man and Environment* XVII(1): 61-70 [1992]
ME-1992-1A10

Excavations at Padri – 1990-91: A Preliminary Report

Vasant Shinde

This is the preliminary report of the excavation at padre, Bhavnagar District, Gujarat, carried out during February-March 1991. It revealed a twofold cultural sequence, the Early Historical (c. 1st century A.D.) and Harappan (c. 2200-2000 B.C.) separated by a thick sterile layer suggesting a break in the occupation. This paper highlights some of the new features of the Harappan civilization in Saurashtra, like rectangular mud structures, evidence for a horned deity and a new ceramic named “Padri ware”, brought to light from this excavation.

Vasant Shinde, *Man and Environment* XVII(1): 79-86 [1992]
ME-1992-1A11

Buffalo-Horned Human Figure on the Harappan Jar at Padri – A Note

V.S. Pathak

V.S. Pathak, *Man and Environment* XVII(1): 87-89 [1992]
ME-1992-1A12

Prehistoric and Protohistoric Investigations in the Elery Valley, North Coastal Andhra Pradesh

M. Kasturi Bai

This paper summarises the author’s work in the Eleru valley. It discusses the techno-typology and cultural similarities of the Upper Palaeolithic, Mesolithic and Neolithic assemblages

discovered, as well as the archaeological potential of the region for reconstructing the subsistence and settlement patterns of the prehistoric people.

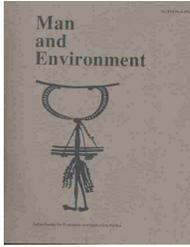
M. Kasturi Bai, *Man and Environment* XVII(1): 91-95 [1992]
ME-1992-1A13

**Archaeological Investigations in the Submergence Area of the Narmada Sagar Dam,
Madhya Pradesh: A Reconnaissance Survey**

S.B. Ota

The Nimar District of Madhya Pradesh, forms a portion of the area to be submerged by the Narmada Sagar Dam. Preliminary explorations carried out in the area have revealed a continuous succession of archaeological deposits from Acheulian to recent historical times. This paper highlights the archaeological potential of the area so that plans can be formulated to salvage these remains before the area is fully submerged.

S.B. Ota, *Man and Environment* XVII(1): 97-103 [1992]
ME-1992-1A14



Volume XVII, No. 2 (July-December 1992)

Influences of the philosophy of Sankaracharya on Hindu Temple Architecture and Symbolism

M.N. Deshpande

M.N. Deshpande, *Man and Environment* XVII(2): 1-10 [1992]
ME-1992-2A01

Palaeoenvironment of Late Palaeolithic of Primorye (The Former Far East U.S.S.R)

Yaroslav V. Kuzmin

Both Late and Final Palaeolithic sites were studied. A total of 8 references settlements in Primorye were investigated. The Late Palaeolithic sites of the Cave of Geographical Society and Osinovka belong to the warm Chernoruchie (Q^3_m) period, 25,000-35,000 B.P. The climatic conditions were comparatively warm and humid and the vegetation represented by coniferous-deciduous forests. The late Palaeolithic site of Ustinovka I, Suvorovo III, Suvorovo IV belong to the Sartan (Q^4_m) cold period, about 10,000-25,000 B.P. The climatic conditions were extremely cold and arid throughout the late Pleistocene and the vegetation represented by Birch forest-tundra and birch-larch thinned out forests. Around 15,000 B.P. a warming is noted (Suvorovo IV site); landscapes were represented by birch-hazel forests. The aceramic sites Gorbatka III, Ilistaya I and Timofeevka I belong to the late Glacial period (12,000-10,000 B.P.) and the Early Holocene (10,000-8,000 B.P.). The majority of these aceramic (or Final Palaeolithic) sites belong to the warm Boreal period, about 9,000-8,000 B.P. in the landscapes of birch-broad-leaved forests.

Yaroslav V. Kuzmin, *Man and Environment* XVII(2): 11-20 [1992]
ME-1992-2A02

Quantitative Composition and functional Aspect of the Palaeolithic Assemblages of Rock Shelter III F-23 at Bhimbetka

M.S. Alam and V.N. Misra

This study is the first attempt in India to assess the temporal variation in Palaeolithic assemblages recovered from a primary context.

M.S. Alam and V.N. Misra, *Man and Environment* XVII(2): 21-34 [1992]
ME-1992-2A03

Mesolithic Human Burials in the Ganga Plain, North India

J.N. Pal

The Mesolithic hunter-gatherers were the first colonisers of the Ganga Plain to practise systematic disposal of their dead. This paper synthesizes several important aspects of the culture and presents evidence relating to their burial practices.

J.N. Pal, *Man and Environment* XVII(2): 35-44 [1992]
ME-1992-2A04

Dental Anthropology of Mesolithic Hunter-Gatherers: A Preliminary Report on the Mahadaha and Sarai Nahar Rai Dentition

John R. Lukacs and J.N. Pal

Careful analysis of human dentition often yields important clues regarding the biological attributes of prehistoric populations. Yet, while inferences regarding diet, subsistence, occupational activities, health and biological interrelationships are pertinent to archaeological research, the role of dental anthropology has too often been neglected.

This preliminary report summarizes previous anthropological research on the Mesolithic hunter-gatherers of the Ganga Plains, and presents conclusions derived from the analysis of the Mahadaha and Sarai Nahar Rai dental remains. Observation on dental attrition, ten pathological lesions of the teeth and jaws, two measurements of the dental crown and twenty-six anatomical features of the tooth crowns were included in the study.

These skeletal series are characterized by heavy dental attrition, low rates dental abscesses and caries, moderately high enamel hypoplasia, large tooth size and primitive, but not morphologically complex teeth. Overall, the dentition of Mesolithic populations of the Ganga Plains suggests the presence of heavy dietary and occupational stresses, and indicates a pathology pattern consistent with a hunting-foraging subsistence system and primitive food preparation technology. The absence of many similarities in dental morphology between these Mesolithic skeletal series and other South Asian prehistoric groups suggests that these early inhabitants of the Ganga Plain may not have made a substantial biological contribution to later populations of peninsular India.

John R. Lukacs and J.N. Pal, *Man and Environment* XVII(2): 45-55 [1992]
ME-1992-2A05

The Pebble Tool Component of the Bonaigarh Neolithic Complex, Orissa

Pradeep K. Behera

This paper discusses the significance and typo-technological features of pebble tools in the Bonaigarh Neolithic complex, Orissa.

Pradeep K. Behera, *Man and Environment* XVII(2): 57-63 [1992]
ME-1992-2A06

Faunal Remains: An Application of Contingency Tables

P.P. Joglekar and P.K. Thomas

The aim of this paper is to demonstrate the usefulness of the contingency method to understand patterns of bone assemblages with respect to comparisons within a single site and comparisons among different sites.

P.P. Joglekar and P.K. Thomas, *Man and Environment* XVII(2): 65-70 [1992]
ME-1992-2A07

The Faunal Assemblage and Subsistence Strategies at Tuljapur Garhi

P.K. Thomas

The Vidarbha region of Maharashtra is well known for its Megalithic graves and Iron Age settlements. The site of Tuljapur Garhi is of special interest as it was the first Chalcolithic settlement excavated in the Vidarbha region. This culture can be dated from the late second to the first millennium B.C. The identification of faunal remains from Tuljapur Garhi has revealed the presence of fourteen species of animals including mammals, reptiles, birds and molluscs. Cattle predominate among the animals represented indicating their economic importance in the Chalcolithic culture. A large number of bone tools have also been found and were probably used for skinning animals, in the preparation of hides and also for wood processing. The type of wild mammals identified at Tuljapur Garhi suggest an open scrub jungle in the vicinity of the site.

P.K. Thomas, *Man and Environment* XVII(2): 71-74 [1992]
ME-1992-2A08

Faunal Background of the Iron Age Culture of Maharashtra

P.K. Thomas

Very little is at present known about the settlements of the Iron Age populations or of the Megalithic builders of western India. However, recent excavations in Vidarbha have brought to light a variety of Megalithic burials and a few settlement sites. With the available faunal evidence from these excavations, it is presumed that the inhabitants were the first horse breeders in this part of the country. Horses (*Equus caballus*) have been occasionally reported from the terminal phases of Indian Neolithic/Chalcolithic cultures, which may be contemporary with some of these Iron Age cultures. The Megalithic settlements of the Vidarbha region can be approximately dated between 900-300 B.C. A majority of the megalithic graves have yielded partial burials of horses consisting of the skull and the lower extremities of the limb bones. The sacrificed horses were in the age group of 3-6 years with no selection by sex. Since not all graves contained horse bones, it is suggested that horse sacrifice was not an essential ritual among these people, rather it was symbol of high status.

Faunal evidence from associated settlement sites points to a mixed economy of stock-breeding (predominantly cattle), hunting and dry farming. Some horse remains were found in food refuse contexts suggesting that horse flesh may have been consumed as part of the sacrificial and burial ceremonies.

P.K. Thomas, *Man and Environment* XVII(2): 75-79 [1992]

ME-1992-2A09

A Biocultural Study of man in India

S.R. Walimbe and Aletha Tavares

This paper presents the recent developments and research trends adopted in anthropology for the benefit of both scientists as well as laymen. It presents a general review of research work that has been undertaken by physical anthropologists over the last fifty years in a continuing attempt to understand the biological and cultural history of peoples in the context of the changing environment. No aspect of past behaviour, cultural or biological, can be studied in isolation. An interdisciplinary approach by archaeologists and physical anthropologists, reveals very interesting aspects of man's adaptability to various ecosystems.

P.K. Thomas, *Man and Environment* XVII(2): 81-91 [1992]

ME-1992-2A10

The Oman Peninsula and the Indus Civilization: A Reassessment

Serge Cleuziou

During the past twenty years, archaeological research in the Oman Peninsula has yielded an unique set of data concerning the relations between the Indus civilization and a neighbouring country across the sea. This paper is neither a fresh review of the evidence, nor does it intend to make definite statements on archaeological research still in progress. The author's aim is to start with a re-assessment of the earlier literature and move on to the contribution of new research, particularly the Ra's al-Junayz excavations in eastern Oman, in order to suggest some guidelines for constructing a general interpretative framework necessary for the understanding of a growing body of primary data.

Serge Cleuziou, *Man and Environment* XVII(2): 93-103 [1992]

ME-1992-2A11

Padri Ware: A New Painted Ceramic found in the Harappan Levels at Padri in Gujarat

Vasant Shinde and Sonya Bhagat Kar

The discovery of a new painted ceramic termed "Padri ware" in the Harappan levels at Padri in Gujarat, has raised a number of questions regarding its genesis, relationship with the

Harappan culture and the people responsible for its manufacture. According to the authors the occurrence of this ware in the Harappan levels was possibly due to contact between the Harappans and some village-based farming communities, or hunter/gatherers contemporaneous with them.

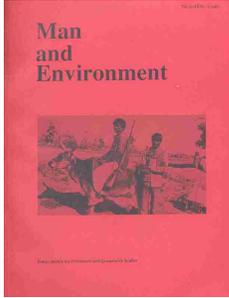
Vasant Shinde and Sonya Bhagat Kar, *Man and Environment* XVII(2): 105-110 [1992]
ME-1992-2A12

The Relevance of the Forager/Collector Model to Island Communities in the Bay of Bengal

Zarine Cooper

This paper examines the applicability of the forager/collector model, as postulated by L.R. Binford, in defining the subsistence systems of the Andaman Islanders and the Nicobarese.

Zarine Cooper, *Man and Environment* XVII(2): 111-122 [1992]
ME-1992-2A13



Volume XVIII, No. 1 (January -June 1993)

Some Musing on Time, Physics and Archaeology: Towards a Holistic Philosophy

D.P. Agrawal

The author explores some of the neglected dimensions of archaeology and strongly advocates the need to take a broader view of the subject if a holistic philosophy of archaeology is to be evolved. The new perspectives of physics on one hand, and archaeology on the other, may eventually lead towards a fusion providing a unified view of the universe.

D. P. Agrawal, *Man and Environment* XVIII(1): 1-4 [1993]
ME-1993-1A01

Archaeology and Indology: Some Reflections

K.V. Soundara Rajan

The author has discussed the usage and scope of the terms – archaeology and Indology. He feels they represent two faces of the same coin in an ideal combination which means good field training, a good knowledge of the past and a scientific approach. Archaeology in India cannot grow as an independent discipline if it is constantly linked with history whose principles and philosophy are entirely different, and if it is deprived of a knowledge of Sanskrit. Archaeology should develop with the help of ancient written records and viable theoretical models of culture movements. In addition, the new generation of young archaeologist will need to have a good knowledge of Sanskrit as well as of the latest archaeological approaches and techniques. The time is ripe for reconstructing the cultural geography and the ethno-social composition of the period between c. 2000 and 600 B.C. – the end of the mature Indus Civilization and the second phase of urbanization.

K.V. Soundara Rajan, *Man and Environment* XVIII(1): 5-9 [1993]
ME-1993-1A02

Upper Palaeolithic Blade Technology: A Preliminary Analysis of the Cores from Mehtakheri (Madhya Pradesh)

Abhijit Ghosh

An analysis of the core reduction strategies in the Upper Palaeolithic phase at Mehtakheri (Madhya Pradesh) is presented here. The results indicate a dominance of blade production

strategies. Stages in the reduction sequence reflect the choice of immediately available raw material nodules, the sole use of chalcedony for blades, low degree of exploitation of blade cores, small blade size, a hard hammer technique and a non-blade-core element on quartzite. The importance of debitage analysis in understanding Upper Palaeolithic blade technology at this site is highlighted.

Abhijit Ghosh, *Man and Environment* XVIII(1): 11-19 [1993]
ME-1993-1A03

Reddening of Quaternary Dune Sands from the Area of Didwana and Budha Pushkar, Rajasthan – a Micromorphological Approach

Hema Achyutan and S.N. Rajaguru

In this paper an attempt has been made to understand the processes of reddening of Quaternary dune sands through micromorphological analyses. This study reveals that reddening of dune sands is a slow pedogenetic process and that it took place when the climate fluctuated from semi-arid to arid conditions and vice versa.

Hema Achyutan and S.N. Rajaguru, *Man and Environment* XVIII(1): 21-34 [1993]
ME-1993-1A04

The First Discovery of Acheulian Bifaces in Goa: Implications for the Archaeology of the West Coast of India

Luther D. Goudeller and Ravi Korisettar

Typical Acheulian bifaces have been discovered in Goa for the first time. A complex assemblage of handaxes, choppers and cleavers from four localities in the Dudhsagar River Valley firmly establishes the existence of Lower Palaeolithic occupation in Goa in particular and on the west coast in general. Despite periodic attempts to unravel the Palaeolithic phases in this region the reported finds were both too sporadic in occurrence and numerically inadequate to allow for a characterization of the Palaeolithic industries. This led to interpreting the tropical west coast of India as an area of relative isolation during the Pleistocene. The present convincing finds were made while retracing the footsteps of earlier workers and have opened up new vistas of research in the archaeology of the humid tropical west coast of India.

Luther D. Goudeller and Ravi Korisettar, *Man and Environment* XVIII(1): 35-42 [1993]
ME-1993-1A05

Explorations in the Malaprabha Valley, Karnataka

Ravi Korisettar and Michael Petraglia

Recent explorations in the Malaprabha Valley have added new dimensions to Quaternary research in the area. The discovery of an ancient lake and preliminary laboratory analysis of

the lake samples indicate scope for local palaeoenvironmental reconstruction. Point bar Acheulian localities in the Malaprabha Valley are comparable to similar sites elsewhere in peninsular India and should prove useful for a detailed study of the relationship between artefacts and gravel conglomerates.

Ravi Korisettar and Michael Petraglia, *Man and Environment* XVIII(1): 43-48 [1993]
ME-1993-1A06

Patterns of Mobility in the Mesolithic of Rajasthan

Gurucharan S. Khanna

The nature of raw material procurement and patterns of mobility are discussed in the context of the evidence of chalcedony at the site of Bagor, Rajasthan.

Gurucharan S. Khanna, *Man and Environment* XVIII(1): 1-4 [1993]
ME-1993-1A07

Ashmound Investigation at Budihal, Gulbarga District, Karnataka

K. Paddayya

The ashmound sites of south India have been interpreted by previous workers variously as industrial workshops, cattle-pens/domestication centres of the Neolithic culture, etc. these views were usually based on limited field-work aimed at understanding the stratigraphy of ash deposits. Intensive field surveys undertaken in recent years in north Karnataka and adjacent parts of Andhra Pradesh have brought to light several new features at these sites. The presence of extensive occupation deposits around them is the most important among these features. The results of the first two seasons of field research at Budihal in the Gulbarga district of Karnataka and reported in the present paper show that the site was a regular pastoral settlement of the southern Neolithic culture. Radiocarbon determinations place its age at c. 1850 B.C.

K. Paddayya, *Man and Environment* XVIII(1): 57-87 [1993]
ME-1993-1A08

Alloy Patterns in Chalcolithic India

Rajam Seshadri

In this paper an attempt has been made to understand the alloy patterns of metal objects of the Harappan and other Chalcolithic cultures of India by studying the results of chemical analyses that have been carried out on these objects. Tin and arsenic were the main elements that were alloyed with copper. Based on the number of bronze samples that contain either tin or arsenic within the range that is beneficial to the object, it may be inferred that the tin bronzes seem to be the result of conscious choice, while arsenical bronzes may be incidental.

Rajam Seshadri, *Man and Environment* XVIII(1): 89-92 [1993]
ME-1993-1A09

Manufacturing Methods of Monochrome Glass Beads in Southeast Asia

Kishor K. Basa

This paper lays stress on the methods of manufacturing glass beads. The author is of the opinion that this aspect has not been given adequate importance in the study of bead manufacture in Southeast Asia. Various techniques of bead making are discussed.

Kishor K. Basa, *Man and Environment* XVIII(1): 93-100 [1993]
ME-1993-1A10

A Single Source for South Asian Export –Quality Rouletted Ware?

I.W. Ardika, P.S. Bellwood, R.A. Eggleton and D.J. Ellis

During 1987 and 1989, I.W. Ardika carried out a number of excavations in pottery-bearing sites on the coastal plain of north Bali, near the villages of Bangkah, Sembiran, Pacung and Julah. The results, especially those from Sembiran, were quite dramatic. Together with thousands of sherds of local pottery and a piece of casting mould for making a bronze drum, Ardika excavated 79 sherds of the fine fabric type of South Asian Rouletted ware (78 from Sembiran and one from Pacung), together with a sherd of the stamped Black ware recorded as "Type 10" in the report on Arikamedu by Wheeler, Ghosh and Deva (1946), and a black slipped sherd of a much coarser fabric inscribed after firing with a three-character graffito in Kharoshthi. The background to this research, its significance for Indian and southeast Asian contacts 2000 years ago and details of the finds are all given in published report (Ardika and Bellwood 1991) and in Ardika's Ph.D. thesis submitted to the Australian National University (Ardika 1991).

I.W. Ardika, *et al.*, *Man and Environment* XVIII(1): 101-109 [1993]
ME-1993-1A11

Domestication and Rates of Evolution in *Bos* Species

P.P. Joglekar and P.K. Thomas

Various skeletal measurements recorded from specimens of *Bos* species in Indian faunal studies were converted into the evolutionary rate. The observed rates of evolution in *Bos* species from different periods revealed that the rate has accelerated since domestication. These rates were comparable to those observed for European cattle.

P.P. Joglekar and P.K. Thomas, *Man and Environment* XVIII(1): 111-114 [1993]
ME-1993-1A12

The Pardhis: A Hunting-Gathering Community of Central and Western India

Malti Nagar and V.N. Misra

This paper gives a brief account of the culture, particularly of the settlement pattern and hunting strategies, of the Pardhis, a hunting-gathering community of central and western

India. It is based primarily on data collected by us in the field in the Sagar and Narsingpur Districts of Madhya Pradesh during the winter seasons of 1989 and 1990. Considering the paucity of studies of hunter-gatherer communities in India, it is hoped that this paper will help partially fill this gap.

Malti Nagar and V.N. Misra, *Man and Environment* XVIII(1): 115-144 [1993]

ME-1993-1A13

Long Distance Ceramic Trade in Kachchh, Gujarat: A Survival of the Chalcolithic Period

Geeta Chetan Sali

Geeta Chetan Sali, *Man and Environment* XVIII(1): 145-146 [1993]

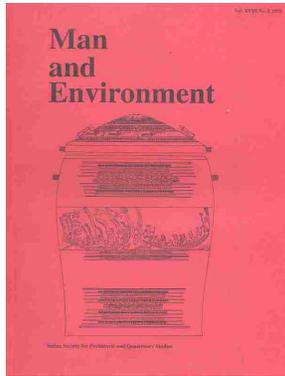
ME-1993-1A14

Megaliths off the Coast of Tranquebar

Sila Tripathi

Sila Tripathi, *Man and Environment* XVIII(1): 147-150 [1993]

ME-1993-1A15



Volume XVIII, No. 2 (Jul-December 1993)

Probable Genesis of the Valley Fill Deposits at Udhampur and Katra, Jammu (Jammu and Kashmir State)

R.K. Ganjoo

The valley fill deposits at Udhampur and Katra do not correspond with the geological deposits of the Jammu sub-Himalayas. The alien and misfit nature of the deposits are identified as the products of a catastrophic event in the geological past.

R.K. Ganjoo, *Man and Environment* XVIII(2): 1-5 [1993]
ME-1993-2A01

Quaternary Deposits at Bhedaghat, Near Jabalpur, Madhya Pradesh

Sheila Mishra and S.N. Rajaguru

The Quaternary section exposed at Bhedaghat is one of the classic sections on the Narmada River. The 1991 floods on the Narmada, which approached the largest floods recorded at the site, have exposed the Quaternary deposits very well. The section reveals at least four separate units. The base of the most recent unit has been radiocarbon dated to 25,160 B.P. and contains Upper Palaeolithic artefacts. The middle unit is undated but contains advanced Acheulian artefacts. The details of the section and the implications for the stratigraphy and prehistory of the Narmada valley are discussed, with special emphasis on the episodic nature of sedimentation.

Sheila Mishra and S.N. Rajaguru, *Man and Environment* XVIII(2): 7-12 [1993]
ME-1993-2A02

'Calcareous Tufa' at the Site of Banasankari, in the Malaprabha Valley, Karnataka: Revisited

Ravi Korisettar, Vishwas D. Gogte and Michael D. Petraglia

The 'calcareous tufa' of R.B. Foote (1876) is redesignated in this paper as nodular calcrete following the calcrete typology of Netterberg (1969b). X-ray diffractographs reveal a

conspicuous absence of sepiolite and palygorskite throughout the profile, rendering it immature in terms of its development. Nontronite and traces of kaolinite at the base of the calcrete and an increase in the content of montmorillonite and dolomite upwards in the profile are indicative of a transition in rainfall regimes from higher to lower during its formation. Stratigraphically the calcrete formation predates the Acheulian tool-bearing gravel conglomerates of the Malaprabha River.

Ravi Korisettar, *et al.*, *Man and Environment* XVIII(2): 13-21 [1993]
ME-1993-2A03

The Role of Fluorine in the Chronometric Dating of Indian Stone Age Cultures

Anupama Kshirsagar

An attempt has been made in this paper to draw attention to the importance of fluorine analysis for estimating relative chronologies of the Stone Age cultures of India and for providing a reference list of standard fluorine/phosphate ratios for fossils from the diverse environmental regions of India.

Anupama Kshirsagar, *Man and Environment* XVIII(2): 23-32 [1993]
ME-1993-2A04

Palaeolithic Art in India

Robert G. Bednarik

The evidence so far presented in India of art or art-like remains of the Palaeolithic period is critically reviewed. It is confirmed that most of this evidence provides no valid proof of Pleistocene art traditions, and alternative interpretations of several types of such evidence are presented. However, the validity of a few other claims is reinforced, and new data of extremely great antiquity are added. Thus the evidence of Indian Palaeolithic art, extremely sparse as it is, provides some disconnected but very tantalising information about extremely early cognitive development of humans. Such evidence hints at the existence of very long traditions of non-utilitarian human behaviour. It is also attempted in this paper to explain the perceived paucity of Pleistocene art in India.

Robert G. Bednarik, *Man and Environment* XVIII(2): 1-5 [1993]
ME-1993-2A05

The Bronze Age in Southeast Asia: Its Recognition, Dating and Recent Research

Ian Glover and Belinda Syme

The paper outlines the history of research on the Bronze Age in Southeast Asia. A discussion on the distribution of metal ores in this region is followed by a review of local traditions of ancient copper mining, trade and exchange. The significance of the Dongson Culture in this

context is examined and preliminary classification of axe forms offered. The evidence strongly indicates the indigenous nature of ancient Southeast Asian bronze metallurgy.

Ian Glover and Belinda Syme, *Man and Environment* XVIII(2): 41-74 [1993]
ME-1993-2A06

Relations between Central Asia and the Indian World from the Palaeolithic Period to the Islamic Conquest: New Interpretations in the Light of a Comprehensive Study of Ceramics

Bertille Lyonnet

This paper is the first of a two-part study of the cultural contacts among ancient sites in Central Asia and the Northwest Frontier region of Baluchistan and the Indian subcontinent based on a recent surface survey and ceramic chronology. It attempts to clarify these contacts in a chronological order, from their origins to the Islamic conquest.

Bertille Lyonnet, *Man and Environment* XVIII(2): 75-86 [1993]
ME-1993-2A07

New Perspective in Harappan Studies

M.K. Dhavalikar

M.K. Dhavalikar, *Man and Environment* XVIII(2): 88-91 [1993]
ME-1993-2A08

A Demographic Approach to the Vidarbha Megalithic Culture

R.K. Mohanty and S.R. Walimbe

Extensive explorations and excavations carried out on the Megalithic culture in Vidarbha have yielded enormous data for our understanding of the lifestyle of these Iron Age people. Many theories have been propounded regarding their cultural behaviour, especially mortuary practices. However, the available data pose a fundamental question. Were the megalithic burials, which are the prominent feature of the cultural remains of these people, created or built for all members of society, and if not, for whom were they created? An attempt has been made to provide an anthropological and demographic hypothesis for these burial practices. This study suggests that the erection of a monument was not for everybody: that the 'adult', the most productive age-group, is predominantly represented and that the occurrence of numerous individuals in a primary context in a single circle and pathological lesions on bones in many cases indicate traumatic, accidental and epidemic death for the persons interred.

R.K. Mohanty and S.R. Walimbe, *Man and Environment* XVIII(2): 93-103 [1993]
ME-1993-2A09

Faunal Remains from the Megalithic Habitation site at Bhagimohari, Vidarbha, Maharashtra

P.K. Thomas

The excavation of the Megalithic site at Bhagimohari has to light some very interesting feature of the fauna associated with this culture. In spite of the small small-scale excavation, about 17 species of animals, including the horse, have been unearthed from the site. Compared to other archaeological sites one striking distinction here is that bird hunting was one of the major subsistence activities of the inhabitants. The abundance of bone tools in all the layers probably implies the scarcity of metal.

P.K. Thomas, *Man and Environment* XVIII(2): 105-118 [1993]
ME-1993-2A10

The Location of Kammoni (Periplus 43)

Sunil Gupta

This paper seeks to identify the Early Historic site of Kamrej, situated on the banks of the river Tapi, with the village-settlement of Kammoni mentioned in the first century A.D. Greek maritime guide *Periplus Maris Erythraei*. The Kammoni-Kamrej correlation is established on the basis of archaeological, literary and geographical evidence. Previous opinions regarding the location of Kammoni are reviewed. The paper also discusses, in the context of thee topic, the status of ancient Kamrej as a coastal trading station engaged in the export of iron to the red Sea littoral and the Mediterranean region.

Sunil Gupta, *Man and Environment* XVIII(2): 119-127 [1993]
ME-1993-2A11

C.J. Thomsen and the Three Age System

K. Paddayya

Relying upon the new literature that has appeared during the last decade or so and also based upon the author's personal reading of the famous book *Guide to Northern Archaeology*, this article seeks to highlight the context of origin and other aspects of C.J. Thomsen's Three Age System. Particularly noteworthy are Thomsen's constant efforts to elevate the notion of ages in the preliterate past of man from a practical arrangement of museum objects to the level of a theoretical construct and his amazing awareness of the fundamental epistemological aspects of the discipline of archaeology.

K. Paddayya, *Man and Environment* XVIII(2): 129-140 [1993]
ME-1993-2A12

Discovery of a Volcanic Ash Bed in the Alluvial Sediments at Morgaon, Maharashtra

Vishwas S. Kale, D.N. Patil, N.J. Pawar and S.N. Rajaguru

An exposure of a volcanic ash bed was discovered in the alluvial sediments of the Karha River near Morgaon, Maharashtra. The geomorphic and stratigraphic setting of the bed is similar to that of the Bori ash bed reported from the Kukdi valley and appears to be of the same age (1.4 myr). This discovery has enhanced the possibility of more tephra occurrences in other parts of the Deccan.

Vishwas S. Kale, *et al.*, *Man and Environment* XVIII(2): 141-143 [1993]
ME-1993-2A13

A Unique Harappan Copper Fish-hook from Padri, Gujarat

V.S. Shinde and Elizabeth Thomas

This paper deals with a unique fish-hook found in the recent excavations (1992-93) at the Harappan site of padre in Bhavanagar District, Gujarat. This is largest fish-hook found anywhere in Harappan levels and was possibly used to catch large marine fish, like catfish, the remains of which were found along with it.

V.S. Shinde and Elizabeth Thomas, *Man and Environment* XVIII(2): 145-147 [1993]
ME-1993-2A14

Terracotta Bull Figurines from Marmi: A Chalcolithic Settlement in Chitorgarh District, Rajasthan

V.N. Misra, V.S. Shinde, R.K. Mohanty and Lalit Pandey

V.N. Misra, *et al.*, *Man and Environment* XVIII(2): 149-152 [1993]
ME-1993-2A15