

**VOLUME IV**

**INDIAN ARCHAEOLOGY IN RETROSPECT**

# **ARCHAEOLOGY AND HISTORIOGRAPHY**

**HISTORY, THEORY AND METHOD**

Edited by

**S. SETTAR**

**RAVI KORISSETTAR**

**ICHR**

INDIAN ARCHAEOLOGY IN RETROSPECT

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*History, Theory and Method*

*Edited by*

S. SETTAR

RAVI KORISSETTAR

Indian Council of Historical Research



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## Foreword

As one of the editors of this series and also as one associated with the Indian Council of Historical Research, I am delighted to present the *Indian Archaeology in Retrospect* in four volumes. This series has taken the present form, undergoing several transformations during the last four years. When it was originally planned in 1995 at Dharwad, we had only a limited aim of attempting a historiographical account, covering the Pre and Early history of India in two volumes (from Palaeolithic to the Early Historical Period); we had also somewhat vaguely nourished one-volume retrospect on Indian Art History to complement it. During the early years of the preparation, we kept our options open, sought and considered suggestions from others, tried to involve as many established scholars as possible—all these experiments taught us how much easier it is to write for oneself than get others write for one. Of about a hundred odd scholars with whom we corresponded at the early stages, only about eighty could stand by us till the end. Some could not respond to our invitation and they proved to be the most helpful ones, because their silence remained golden; some others reacted enthusiastically in the beginning, pleaded for more time subsequently, but faded away at the concluding stages. No doubt, the latter should have had justifiable reasons for their withdrawal, but this upset our planning badly, and denied us about a dozen important papers. Critics who notice obvious gaps should not overlook the inherent hazards involved in such collective efforts while assessing the academic content of these volumes.

The four volumes of *Indian Archaeology in Retrospect* are shaped by a combination of factors: our original plan apart, the suggestions and modifications made by colleagues and friends, the range of available scholarship, generous offers and voluntary participations, drop outs and withdrawals, and also accidents of various other kinds, are the most obvious ones among them. All these led to alter the original plan on the one hand and to accommodate new ideas on the other. The latter resulted in the expansion of the series from the original two to four volumes; it also made possible one full volume on the Indus Studies and another on the Interactive Sciences. The most useful addition came from scholars who have more or less devoted their entire lifetime to their respective fields of specialization: this explains the most useful, informative and meticulously prepared Appendices and Bibliographies.

While working on this series with Ravi at Dharwad, I had also initiated several bibliographical projects in the Indian Council of Historical Research at New Delhi. Besides liberally funding such projects (both for their preparation and publication), the ICHR had also made efforts to create opportunities to bring out bibliographical accounts in *The Indian Historical Review*, and in publications brought out under the new monograph

series as well as several other publications of the Council. When these volumes were finalised, I thought that a comprehensive bibliography of Indian archaeology, covering the entire nineteenth and twentieth centuries, would be an appropriate complement to this series. I hope Professor V.N. Misra of the Deccan College, who is siezed with this task since 1997, would present it one day. The original plan of making this Bibliography an integral part of this series, as Volume V, had to be, abandoned, however to avoid further delay in the publication of these volumes. I am happy that the Indian Council of Historical Research is able to complement the excellent work done by a community of Dutch, South Asian and South-East Asian scholars under the *ABIA South and Southeast Asian Art and Archaeology Index* project, sponsored by the International Institute of Asian Studies at Leiden, Netherlands. The ABIA offers annotated bibliography of the publications of the year; our volume comprises only bibliographical entries of important publications brought out during the past century and half.

Dr. Ravi Korisettar, Professor and Chairman of the Department of History and Archaeology, Karnatak University, Dharwad, had to bear the major brunt of the responsibility, especially after I took over the Chair of the ICHR and became increasingly involved with the responsibilities of the Council. In fact, his share of contribution is far more than mine. My contribution to it is almost nil. I deem it a privilege to associate myself with these works and to present them on behalf of the ICHR. Both these projects were completed within a reasonable period of time, thanks to the initiative and cooperation of scholars and editors: in fact, the ICHR grant given to it is only nominal and symbolic.

*Chairman*

S. SETTAR

*Indian Council of Historical Research*

*New Delhi*

*30 June 1999*

## Acknowledgements

Edited works are always built on the labour and cooperation of contributing scholars and the *Indian Archaeology in Retrospect* series is no exception to this. Ever since 1995, when this idea was first seriously and systematically formulated, nearly every scholar approached by us responded favourably, contributed his paper well in time and cooperated with us whenever we reached him on editorial details. Some of them helped with the names and addresses of scholars who may be interested to contribute to this series. As valuable as this was the share of experts who carefully went through the papers refereed and helped us ensure the standard.

All the contributors whose names are easily accessible in these volumes, the reviewers of papers who remain invisible, and those who gave us advice to extend the field of enquiry and also suggested names of scholars, deserve to be remembered here.

The project sprouted on the campus of Karnatak University, Dharwad, an old town located on the eastern edge of Western Ghats. Sylvan, quiet, cool though it is, in the mid-nineties, it was hardly suitable for establishing a global communication. This initial handicap was overcome by the electronic mailing facility established in the University. Soon this bug caught us both and invaded into our homes too. From this locale at Dharwad, we maintained contact with more than hundred scholars across the world, and more intensely with about eighty who stood by us till the end. We should recall the facilities generously provided by the authorities of Karnatak University, and in particular, the help given by Dr. S.C. Kendadmath, Librarian, and Mr. R.M. Vatnal of the Information Centre. To fill the blanks in the Bibliography and to cross-check references, we had to reach centres within and outside India. The help given by Dorian Fuller, Nicky Boivin, Gregory Possehl, Rabi Mohanty and V. Selvakumar is gratefully remembered here. The Geological Society of India (Bangalore), the Indian Society for Prehistoric and Quaternary Studies (Pune), and the Ethnographic and Folk Culture Society (Lucknow), permitted us to reproduce the papers of R.S. Pappu, M.D. Petraligia, M.K. Dhavalikar and K.A.R. Kennedy published in their respective journals. Professor C. Venugopal of Karnatak University spared his valuable time to read the text and made suggestions to improve the diction. We are obliged to all these individuals and institutions.

The series needed a sponsor and a publisher and there was none in sight at the early stages of its implementation. Even when the volumes were nearing completion in 1998, its institutional base remained uncertain. When we approached the Indian Council of Historical Research, the authorities of the Council accepted to publish these

volumes and also met the contingent expenses. The Manohar Publishers & Distributors, especially Mr. Ramesh Jain and Ajay Jain, have done nothing less than a miracle by producing these volumes in a record time. The authorities of the ICHR and the proprietors of Manohar deserve our whole-hearted thanks.

S. SETTAR  
RAVI KORISSETTAR

# Introduction

S. SETTAR and RAVI KORISSETTAR

Theoretical and methodological developments in Indian archaeology have received a thrust in this volume, the fourth and the final in this series. As many as fifteen scholars have attempted to appraise the dynamics of Indian archaeology in terms of its changing perspectives and trajectories. The progress, recorded as far as possible in a chronological sequence, has been presented to serve a historiographical purpose, to remind ourselves of our successes, failures and limitations. In time span, the enquiry goes back to the dim roots in the latter half of the nineteenth century, but it takes a definitive shape from the time of the foundation of the Archaeological Survey of India which, in the year 2002, would be observing the centenary of its continued existence.

The 'Contribution of Earth Sciences to the Development of Indian Archaeology' traces the growth of prehistoric archaeology and Quaternary geology in a historical perspective. The geologists, who pioneered and continued to serve prehistoric archaeology in India, are mainly responsible for establishing the interrelationship of prehistory with the Quaternary science. Besides identifying their contributions to the prehistoric and environmental archaeology, the characteristics of early research and the significance of the Quaternary environmental research of the post-Independence period, have been evaluated here. Being closely linked with archaeology, the techniques and methods of earth sciences provide aids to resolve several problems pertaining to stratigraphy, palaeoenvironment, settlement and land-use patterns, site-formation processes, etc. Geoarchaeology, an outcome of the collaborative effort of archaeologists and earth-scientists, has been extensively applied in different parts of India during the last three and a half decades. The focal point of this paper, however, is the dynamics of man-land relationships, involving integration of geomorphic, geologic and archaeological data.

There is no dearth of literary exercise on the great Indian epics. Several critical editions, aimed at restoring their pristine form, have been successfully attempted, though they have their own quota of skeptics and critics. There are at least two prominent views about their historicity: one, that everything mentioned in them is true to the very letter; another, that they are not more than a figment of imagination. Study of epics has taken a new dimension in recent years with the archaeologists joining the fray in a big way. The 'Historicity of the *Mahabharata* and the *Ramayana*' examines these two epics from the archaeological perspective. In 1972, a number of sites were selected for investigation, chief among them being Hastinapura (of the *Mahabharata*) and Ayodhya and Sringerapur (of the *Ramayana*). From the excavations conducted between 1972 and 1982 at Hastinapura, a sequence of cultures, revealing occupation from the period of OCP (c. 1500 BC) and passing through PGW and NBP, to the Medieval period, was identified. The archaeological evidence from the PGW levels revealed a non-urban/rural,

agro-pastoral economy, regulated in a significant way by iron technology. Unlike in the succeeding NBP phase, no evidence of either writing or of trade has been found during this phase. Both literary and archaeological data have been taken to identify the PGW phase with that of the *Mahabharata*.

Studies on the *Ramayana* related sites, such as Ayodhya and Srīngaverapura (as well as Bharadvaja Ashrama, Nandigram and Chitrakuta), were directed to explore the historicity of events and the geographic identity of places occurring in the epics. The explorations and excavations have revealed that while the events and sites associated with the *Mahabharata* were confined to the Upper Ganga-Yamuna valleys (eastern Haryana, north-eastern Rajasthan and western Uttar Pradesh), those associated with the *Ramayana* lay in the proximity of the Ganga-Yamuna confluence, including the regions to its north and south (eastern and southern Uttar Pradesh, with extensions into Madhya Pradesh, Maharashtra, Deccan and Sri Lanka). The earliest occupation (the *Ramayana* phase) at Ayodhya is associated with the NBP culture, characterized by distinctive pottery, prolific iron tools and weapons, punch-marked coins and such other material evidence. All these are argued to mark a clear trend towards urbanization and an advance over the preceding PGW seen at the Mahabharata sites. Srīngaverapura, the easternmost Ramayana site, revealed a stratigraphic sequence of OCP (with a TL date of the eleventh century BC), Black-slipped and Black-and-Red Ware (with an admixture of PGW), NBP, Sunga, Kushana and Gupta features. A comparison of the occupation material of these two sites with that of Nandigram, Bharadvaja Ashrama and Chitrakuta is stated to indicate that the story of the *Ramayana* may not have been the figment of imagination. Departing from the traditional belief, the archaeological evidence presents an inverted chronology by placing Krishna anterior to Rama. Mustering evidence in support of this, it is argued, that the events of the *Mahabharata* were anterior to those of the *Ramayana* and that 'there is a kernel of truth at the base of both the *Mahabharata* and the *Ramayana* and events concerned very likely occurred respectively in the ninth and seventh centuries BC'. The post-script to this paper deals with an inscription found at the Babri Masjid.

The 'Historical Archaeology of India: An Outline of the Work of the Archaeological Survey of India' reviews the contributions of the Archaeological Survey of India, with reference to its achievements in the fields of explorations and excavations. The sites are grouped under three heads: (a) urban centres, (b) other sites, and (c) religious shrines/complexes. Deriving the main body of information from journals such as *Ancient India*, *Puratattva* and *Man and Environment*, the author outlines the aims, methods, role of the personnel involved in excavations and explorations, technique of reporting the finds, etc. Excavations at Nagarjunakonda and Srīngaverapura reveal high standards and thus stand out as models, while in some other cases, it is argued, 'the aims and consequently the scales of excavations have not matched up with the importance and character of the urban centre'. Though the ASI has achieved commendable success in 'discovering an impressive range of sites and a long succession of cultures ...', its record in publication, especially of excavation reports, is pointed out to be very disappointing.

This volume includes three major reviews on the development of theoretical perspectives

in Indian archaeology. One of them covers the indigenous approach while the other two reveal the impact of the new perspectives developed in the Euro-American world. 'A Review of Theoretical Perspectives in Indian Archaeology' discusses the rise of the new archaeology and post-processual archaeology, points out the transformations in the methodologies and traces the growth of our knowledge of prehistoric India.

'Beyond Description and Diffusion: A History of Processual Theory in the Archaeology of South Asia' draws together different strands of South Asian archaeology which are identified with the term 'processual'. Deriving inspiration and influence from the developments in Euro-American archaeology of the 1960s-70s, these direct special attention on understanding social processes through archaeology. The processual approaches strove to gain an insight into the past by probing into ecology and cultural adaptation, evolution of social complexity, and understanding archaeological evidence from ethnoarchaeology and experimental archaeology. After defining processualism, the enquiry extends to settlement archaeology and cultural ecology, environmental determinants and constraints encountered while explaining the rise and fall of archaeological cultures such as the Harappan Civilization. It further examines the use of 'neo-evolutionary' frameworks of social evolution, pointing out some contradictions in the application of concepts such as *chiefdom* and *state* in South Asian archaeology. There is also a discussion on the systems theory in which cultures are understood to have functioned in order to maintain equilibrium. One use of a functionalist framework which is considered critically is the functional interpretation of ethnicity and style which regard archaeological cultures as products of cooperative and adaptive social units. An important outgrowth of processualism in the 1970s and 1980s is the use of ethnographic reconstructions to interpret South Asian archaeological evidence, especially to site formation processes. Towards the end of this paper, the basic philosophical stance of processualism, namely positivism, is discussed, although it is noted that insights from processual approaches do not rely on such an epistemology. The paper concludes by noting important contributions of theoretical developments to the practice of archaeology and to the understanding of the past. It also highlights how 'processualism' brought theoretical issues into focus and laid the foundation of the ongoing debate on the archaeological record.

'Looking for Post-Processual Theory in South Asian Archaeology' probes into the history and development and the theoretical perspectives which are either explicitly or implicitly 'post-processual'. It begins with the critics within the discipline who question the basic tenets of cultural and historical as well as processual approaches to the past. Some of these call for a less universalist framework that would recognise the distinctive trajectory of South Asia's past and focus attention on archaeological issues specific to this region. Recent studies made on ideology, authority and caste are reexamined here. The history of the socio-politics apart, studies which analyze the effects of colonial and nationalist narratives on the interpretation of the past are also critically reviewed. The dialogue on the Indian perspectives of the past; management of the surviving cultural heritage with particular reference to conservation, presentation and education; issues connected with ethnoarchaeology and allegation of misuse of ethnographic data in the

interpretation of archaeological finds; the theoretical debate on the goal of ethno-archaeology (or 'actualistic research') and questions relating to the hard division of functional and ideological aspects of material culture; the gender issues in general and perceptions of women and their relevance to archaeology in South Asia in particular—these are some of the major issues raised in this paper. Questioning the whole premise of 'looking for post-processual theory in South Asian archaeology', the authors conclude that it is wrong to hold that all new, rich and diverse directions in the study as 'post-processual'.

'Pursuing Site Formation Research in India' attempts an overview of the increasing application of geoarchaeological methods to understand the processes of site formation in general and of northern Karnataka in particular. Though an emerging field of prehistoric research, this has already made significant strides in the last decade and half, especially in south India. An attempt is made here to examine the extent to which the cultural and natural formation processes have been applied to in our country. Stone Age archaeological investigations are reviewed in the context of specific regions, sites, artifacts, industries, etc., and the potentials of experimental, ethnoarchaeological and taphonomic researches are outlined. An effort is also made to evaluate the current state and future direction of formation process studies in India. In the post-script, a summary of significant site formation studies of two Lower Palaeolithic sites, one at Hunsgi valley (Karnataka) and another at Kortallayar valley (Tamil Nadu) has been given.

The paper on 'Understanding Man-Land Relationships in Peninsular Deccan: With Special Reference to Karnataka' takes stock of studies on environmental archaeology, in particular, those of northern Karnataka. A considerable emphasis has been laid during the last three decades on understanding these relations, going beyond a descriptive account of artefacts or of excavations. This has helped reconstruct the evolution of prehistoric cultures from hunting gathering to food-producing stages in a processual framework. The radiometric dating methods have provided tools to obtain absolute dates for the prehistoric culture sequence in the present northern Karnataka. Owing to an inadequate application of the systemic concepts and lack of site-specific palaeoenvironmental studies, it has been found difficult to strike a regional synthesis of man-land relationships in the major parts of peninsular region.

Our knowledge of the transformation of prehistoric societies in peninsular India and the environmental potential of various ecosystems in the Deccan to understand the nature of man's dependence on natural resources, have been evaluated here. Knowledge of ecosystems is vital for understanding the interaction between the living and non-living components in a system in which human adaptation and biological evolution take place. This presupposes co-existence of several organisms and their effective response to the environmental challenges. This study draws attention to the non-cultural data which are also relevant to gain a holistic view of the behaviour of the prehistoric cultures. The immensely rich geographical region chosen for this study presents a sequence from the Palaeolithic to the Early Historic times, through Mesolithic, Neolithic and Iron ages. The geographic frontiers and environmental resources of cultures examined here are

considered in the framework of different ecosystems. Viewed from the paleogeographic perspective, the Paleolithic settlement patterns (especially of the Lower Palaeolithic in the Krishna Basin in north Karnataka), emphasise a need for understanding the evolution of drainage network, site-specific geomorphic features, role of neotectonics, etc. This study also brings forth certain constraints in the investigation of factors that led to the rise of food-producing cultures (Neolithic-Chalcolithic) in this region. It is pointed out that the division of Deccan into northern and southern as distinctive cultural entities is untenable as there are no distinct physical or communication barriers that demarcate the two. But for the vast expanse of black cotton soils, the northern Deccan does not betray the potential of a nuclear area. The southern Deccan abounds in mineral and metal resources and also lies in the proximal area of the southwest monsoon. Recently obtained evidence from excavations reveals expansion of the Southern Neolithic both into the Deccan in the north and the Kaveri valley in the south. The mid-Deccan was perhaps an area of independent agricultural origin. While the northern Deccan provided vast stretches of arable black soils, the south-western Deccan in the Western Ghats served as a home of a variety of minor millets, pulses and legumes. All these provide a new lead for future work.

'Sheep/Goat Pastoral Cultures in the Southern Deccan: The Narrative as a Metaphor' reviews studies on modern pastoral communities (sheep/goat herding Kurubas/Kuruvas and cattle herding Gollas) and examines their folk traditions which form an important source of oral history. The sheep-goat pastoral communities have been investigated in an epistemological framework, as they are found to have 'an institutionalized knowledge and a repertoire with a historical continuum of their economy, social organization and ideology'. These communities have developed a system of production based on sheep-goat herding, and it is argued that their current man-land relationships would have a bearing on those of their prehistoric ancestors. These communities are dispersed in the semi-arid, low rainfall, grasslands of the central and southern Deccan. The folk narratives of the pastoral Kuruvas provide clues to trace the transition from food-production to pastoralism and vice versa, to explore the antiquity of pastoralism and also to identify the factors that govern the pastoral life in the southern Deccan. It is observed that some Kurubas/Kuruvas and Gollas also practice agriculture and those practicing sheep-goat herding are not nomadic in the real sense of the term. The pastoral groups, dependent only on herding are no doubt nomadic, for they have to move from one centre to another in order to acquire the needs of their herd. These communities fall in the semi-sedentary, transhumance and nomadic category, with well-established mobility circuits which they maintain loyally.

Inquiry into the origins of sheep-goat pastoralism has proved to be a frustrating exercise because of the scarce encounter of typical sheep-goat pastoral settlements of the Neolithic times. Nonetheless, there is a broad consensus that its roots could be traced to the Neolithic phase of c. 3000 BC. There is an overwhelming evidence to show that the scale was more heavily tilted towards cattle herding than sheep-goat herding during this period. Ethnographic studies of modern pastoral communities, especially of those which have

adapted to the landscapes contiguous to the Neolithic and Iron Age sites in southern India, provide significant insights into the similarities and differences they bear with their ancestors and also the noticeable elements of their cultural continuity. Several ethnographic and historical studies conducted during the last fifty years on the Deccan sheep-goat pastoralism have opened up new windows to understand their past and the significance of their oral traditions. This has led scholars to go beyond ethnoarchaeology and look for parallels in the material culture with the help of folk traditions.

Against this background, the cognitive content of the narrative of Elanagireddi on the Kuruvus of the Rayalaseema has been examined to infer that the origins of sheep-goat pastoralism is linked with the Kapus (agriculturalists) and that 'the spatial mobility of transhumance resulted in the domestication and social construction of forested landscapes and articulation of the tribes with the Kuruva/Golla pastoral order'. The narratives 'represent systems of pastoral experiences and in their phenomenological form they present a redescription of the configuration of events linking the pastoral present to the realm of the past'. The relevance of folk traditions and non-Vedic literature has been thus realized, but it is as yet to be integrated with the hard evidence of archaeology. We are not sure whether or not the Southern Neolithic complex presents a cultural unity within its province, and whether or not the Neolithic settlements are best compared with the modern pastoral groups or with the modern peasant villages. Given this situation, selection of proper analogy appears to be as essential as securing a clear picture of the Neolithic-Iron Age cultures. However, attempts have been made in recent times to search out direct historical analogies which provide clues on the origins of the pastoral life. This review draws attention to the wealth of folk 'literature' and suggests that it could be a growing and potential field of research.

Research in the historical archaeology in India has a record of more than two hundred years. Documentation and analyses of monuments, epigraphs and numismatics engaged scores of scholars, whose main concern for a long period of time was dynastic studies. Study of coins and coinage was felt important not only to trace the political history, but also trade, commerce and other related aspects economy. The eighteenth century Orientalists, Indian as well as Western, demonstrated the importance of the numismatic sources in providing independent and corroborative evidence. The survey of 'A Review of Early Historic Numismatic since Independence' points out that much attention was focused during the first half of the twentieth century on identifying the authority which issued coins because the primary preoccupation of the scholars of the time was reconstruction of the dynastic histories. Where literary and epigraphic materials were not available, the histories of such dynasties were reconstructed primarily on the strength of numismatic data. The histories of Kidar Kushanas, Puri Kushanas, Maharathis, Sebakas, Indo-Greeks, Scythians, Western Kshatrapas and such others bear this out. During the last fifty years, however, this body of sources is also effectively exploited for tracing socio-cultural, technological, religious and economic life in ancient India.

The 'Historiographic Perspectives of the Socio-Economic History of Early South India', examines paradigm shifts in the socio-economic history of Tamil Nadu, including Kerala of c. 500-1000 AD. Outlining the conceptual pre-suppositions of historical writings on

socio-economic processes, it probes into the reasons for treating the social and economic studies as mutually exclusive, not holistic, in the Tamil south. Increasing emphasis on conceptualization and broadening the base of the socio-economic history is stated to have coincided with the writings of Kosambi and Burton Stein in particular and other American historians in general. This resulted in the expansion of the frontiers of enquiry from trade and agriculture to the agrarian order, in a structuralistic and systemic perspective. Stein's historiographic critique is mentioned to have triggered off a stimulating debate and created a fervent interest in conceptualization. Noboru Karashima is stated to have not only demonstrated the relevance of epigraphical material for the reconstruction of socio-economic history but also the need to develop a conceptual base. With these, discussion on the beginnings of the early medieval socio-economic history gained special focus and issues such as state formation, segmentary, bureaucratic, feudal systems and social formation asserted central place in the research of the Tamil south during the last three decades of the twentieth century.

The paper on 'The Archaeology of Early Historic Maritime India' goes into the beginnings of historical South India which is argued to be coeval with the developments in the middle Ganga valley and coinciding with the Mauryan expansion into the south. Though the Mauryan inscriptions may demarcate this transition, more definitive evidence to mark the historical period is argued to have come from the Satavahanas, an indigenous ruling family of the Deccan. The Megalithic studies of the last five decades have brought to the fore a vast body of material evidence which reveals the forces that laid to the formation of the State and to the promotion of both inland and maritime trade. Historians have tried to make use of the Sangam literature (dated in the Early Historic period) for identifying different modes of subsistence economy of the Megalithic communities, often considering the Megaliths of Tamil south as an entity different from those in other parts of the peninsula. This has brought in certain limitations on the holistic perspective of the Megalithic culture and blurred our vision of the Megalithic culture. Excavations have continued to throw up fresh data and bear out the prevalence of a mixed agro-pastoral economy during this period. Archaeologists seem to have failed to notice that fishing was a complementary source of subsistence of this community, though there is abundance of evidence to support this in the Iron Age sites of the Deccan and Tamil south. The agrarian expansion, intervention of the Mauryan state and the active role of the Buddhist monasteries were considered to be primary factors that led to the emergence of the State and expansion of trade in south India; however, recent ethnographic and epigraphic studies have opened up 'non-economic matrix' and shown interdependence of Megalithic communities on trade in the south. An attempt has been made in this paper to identify the major trends in the development under select sub-heads (the Megalith Builders, Early Tamil Literature as a Source, Inland Trading Networks, the State and Maritime Contacts, etc.), and to argue against the study of peninsular India in the framework of socio-economic developments as done in north India. It is further pointed out that archaeological evidence (which provides valuable information on the social change and economic transformation) cannot be limited to authenticate only literary sources, in this case, the Sangam poetry.

The paper on 'Marine Archaeological Research in India' summarises the findings of

marine (also known as maritime, nautical, underwater) archaeological expeditions conducted by the National Institute of Oceanography in India during the latter half of the twentieth century. It also examines the objectives and methodological tools of the Indian maritime archaeologists. All the developed countries have made tremendous progress in this field and the record of Indian achievement is not disappointing either. Over the years, the National Institute of Oceanography, in collaboration with other governmental agencies, has undertaken exploration and excavation of submerged ports and shipwrecks in Indian waters.

Use of aerial photography and remote-sensing techniques in Indian archaeological research is comparatively less than the use made in some other disciplines. The 'Application of LAAR in Indian Archaeology' emphasizes the need to keep pace with the technological developments, reminding the benefits of incorporating such cost-effective and useful tools for understanding the landscapes around the sites. The progressive development in the field of electronics, hardware and software, which has resulted in the application of aerial photography at an altitude less than 1 km, has been described here. This involves use of remote controlled (R/C), unmanned (U/M) aircraft and a 35 mm camera or a video camera with a ground-link. The equipment is successfully tested in the field at the Prehistoric (Palaeolithic, Mesolithic, Neolithic, Chalcolithic) and Early Historic sites in India, as borne out by examples such as Samadhiyala (Gujarat), Balathal (Rajasthan) and Budhihal (Karnataka). The LAAR (Low Altitude Aeromodel Reconnaissance) has proved to be not only a comprehensive but also a cost effective method of aerial photography.

The paper on 'Quantification in South Asian Prehistoric Studies: A Few Observations' examines aspects of quantification such as sampling, numeric data presentation, use of analytical tools and model building. With the help of the publications brought out on Indian pre- and proto-history, an attempt is made here to trace the development of quantification and the lacunae inherent in this process.

At the time of India's Independence, archaeology was the preserve of a handful of government organizations (the Archaeological Surveys of India and of States) and a couple of Universities in the country. Among the latter, the Deccan College (of the University of Poona) and the Department of Anthropology (of Calcutta University) stood out for their total commitment to the cause of unraveling the past. However, much of archaeological research was carried out by the Archaeological Survey of India (see *Ancient India*, no. 9). Appointment of R.E. Mortimer Wheeler in 1944 as Director General of Archaeology in India, proved to be a turning point in the history of archaeological researches, because opportunities in new fields of inquires encouraged Universities to establish departments of Ancient History and Archaeology and many trainees from Wheeler's excavation camps began to find placement in them. In 1952, the Archaeological Survey of India completed its fifty years of continued existence. The survey took stock of the progress made by it in a special issue of *Ancient India* (no. 9). This aptly sums up its achievements during the first half of the century, identified as the Marshall-Wheeler Era. Despite Leonard Woolley's scathing attack on its functioning, the ASI could be regarded to have acquired a respectable

stature during this period. After another fifty years, it is now looking forward to its centennial celebrations.

In the year 2000, when we are entering into another millennium, we felt that there is need of a *Retrospect*. We have endeavoured to take stock of the progress made in several fields of archaeology, especially in the post-Independence period, but we are aware that we have not been able to exhaust the field. In spite of our best efforts, we could not carry out our original plan of enquiry, partly because of the over-whelming commitments of some scholars on whom we depended for contributions. The last minute drop-outs were particularly hurting as it was not possible to make fresh attempts once again without risking further delay of publication. The gaps noticed in these volumes should provide provocation in sensitive critiques to plan yet another series of *Retrospect* and extend the enquiry both backwards and forward. Our original plan to bring out these volumes in the Golden Jubilee Year (1997) of India's Independence could not also succeed, but we are glad that this has become possible now when the nation would be celebrating the Golden Jubilee of its Republic. This survey has, no doubt, opened up a new phase of international collaboration coinciding with the coming of the new age. The expanding frontiers of knowledge and new methodologies necessitate periodic reviews and especially when a milestone is reached 'a moment for self criticism and resolve' becomes particularly imperative. 'Let us look back and see in retrospect how far we have fulfilled our mission as the custodians of the national heritage and whether we have risen to the standard the world demands of us', these remarks of A. Ghosh are worth recalling here. We further borrow his words to remind ourselves of what is expected of us. 'Let us also look forward to an age of increased opportunities, of greater activities and of still harder toil, always with the consciousness that what little has been done is only a fraction of what remains to be achieved' (*Ancient India*, no. 9: 1).

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