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BY

SIR MORTIMER WHEELER

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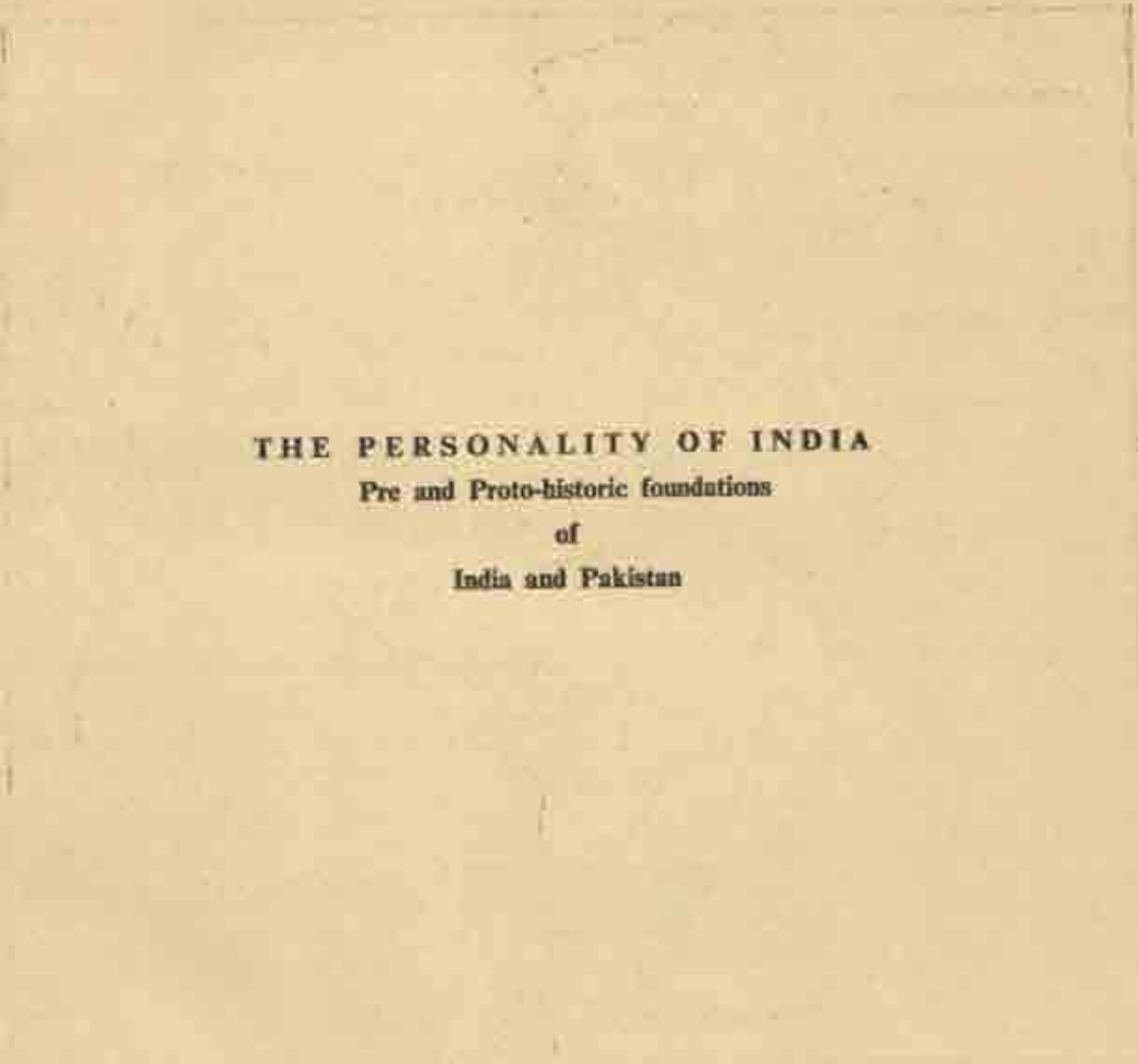
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Pre and Proto-historic foundations
of
India and Pakistan



Fig. 1. Political map of India and Pakistan.

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THE PERSONALITY OF INDIA

Pre and Proto-Historic Foundation of India and Pakistan

By

BENDAPUDI SUBBARAO

M.A., LL.B., Ph.D.

*Head of the Department of Archaeology,
M. S. UNIVERSITY OF BARODA*



With a foreword by

SIR MORTIMER WHEELER

D.Litt., M.C., F.B.A., F.S.A.

*Secretary, British Academy and
formerly Director General of Archaeology in India*

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1958

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FOREWORD

This essay by my friend Subbarao is a brave and constructive attempt to set prehistoric and protohistoric India upon the map. A dozen years ago it could not have been written : a dozen years hence it will have to be re-written, preferably by Dr. Subbarao himself. Meanwhile it sets down and integrates in stimulating fashion an imposing body of evidence of which essential parts are due to the skilful industry of a notable group of young Indian archaeologists now working co-operatively in government or university service. To-day, no part of the world is better served in archaeological matters than is the Republic of India.

In one respect only can the sincerest friend of India find cause for cavil, and let that one criticism be both uttered frankly and received with understanding. It is this : that at the present moment, publication is falling behind field-research. It would be easy to name able and productive excavations of which detailed reports are ominously overdue. The high standard set by the excavation-reports which have been published increases our regret for those which have not. It is most earnestly to be hoped that the next year or two will see an acceleration in this matter, always with the thought that unpublished excavation amounts to the destruction of evidence.

Of the many fascinating problems upon which Dr. Subbarao touches in the following pages, two are (to me) outstanding. The first is : What happened after the end of the Indus civilization ? What bearing did that great civilization have in fact upon the later life of the subcontinent ? Here Shri A. Ghosh, Shri B. B. Lal and others have begun to point the way. When I was working in India there was still a gap of more than a thousand years between the Indus civilization (before 1,500 B.C.) and the Gangetic cities of the protohistoric age. To-day that gap has been halved but not securely closed. It may be that the active co-operation of Pakistan is required to close it finally ; nevertheless, without that co-operation the advance in knowledge has been dramatically successful. May it continue.

The other problem is that of the astonishing and seemingly sudden emergence of rich iron-working cultures in peninsular India during the latter half of the first millennium B.C. Of the associated black-and-red pottery. Dr. Subbarao has interesting things to say, but the iron-industry itself remains an unsolved mystery. How did it arise ? If it was imported, whence and when ? These are questions which only further digging can elucidate, both inside India and, perhaps, along those Arabian shores of which at present so little is known. The fact cannot be over-stressed that, in many aspects, the Indian Ocean constitutes a unitary culture-pool, with India, Arabia and Africa as its continuous margin. This was so in ages past ; it remains so to-day.

These are merely two of many problems of which Dr. Subbarao and his colleagues are acutely aware. And not least, I look forward, as they do, to the time when the necessary initial vertical digging—the search for a cultural time-table—can be supplemented increasingly by horizontal digging—by the systematic revelation of the ancient towns and villages of India and a clear demonstration of the sort of life that was lived in them. Archaeology can only justify itself fully when it is digging up *humanity* in the broadest sense of the term. Potsherds and the like are merely the alphabet of the archaeologist. What ultimately matters is the story that is made from them. In these pages, Dr. Subbarao has written a provisional introduction to that story, and I am delighted to have here the opportunity of expressing my appreciation and my blessing, both to him and to those many other Indian archaeologists whom I am proud to regard as my friends.

The British Academy, London,
May, 1956.

MORTIMER WHEELER

Footnote to the Second Edition

It is never safe for a historian to indulge in prophecy. I prophesied in 1956 that "a dozen years hence" Dr. Subbarao might find an opportunity to re-write his pioneer book. And now, a mere two years later, the completed second edition lies upon my table. It is larger than its predecessor, as befits a subject in which Indian research has been outstandingly active; but it retains, as second editions sometimes fail to do, the clarity and over-all vision of the first draft. This has been no easy achievement. At the present time, Indian archaeology is passing through that difficult secondary stage which is liable to confront all scientific investigation. The first stage is one of limited knowledge and restricted inference (often wrong). Upon this follows the accumulation of scraps of evidence which tend to constitute an untidy and incoherent heap. Only later, when this heap has sufficiently grown and matured, does it begin to take an assured place in the landscape. In India we are, at the moment, in the untidy-heap stage, and it is greatly to the credit of my friend Dr. Subbarao that he has been able, however provisionally, to make so reasonable a shape of it.

Much in this book is necessarily controversial. Some of it will be modified and supplemented in due course by the author himself. But that is surely one of its outstanding merits. It is a survey of the field through the eyes of one of its most active explorers in the year 1958; but it is also a stimulus, both to the author himself and to his colleagues, to resolve complexities and to fill up gaps. The Second Edition is, in effect, a preface to the Third Edition, which will, I have no doubt, reach us sooner than I should dare again to prophesy.

The British Academy,
July 1958.

MORTIMER WHEELER

PREFACE TO THE SECOND EDITION

I had a very pleasant surprise, when sixteen months after the release of the first edition, I was asked to prepare a second edition in February 1958. I am more than gratified by the excellent reception the book had in India and abroad, in particular. Fortunately, there were more bouquets than brick-bats, though the latter included some of the most valuable suggestions accompanied by constructive and friendly criticism. I am grateful to the admirers and critics alike of this preliminary survey of Pre and Proto-history of India and Pakistan.

Being a first attempt I had to frame a system of terminology and the same had been continued in this edition. I have taken advantage of suggestions in reviews and opinions from my professional colleagues. The most important changes and additions are : (1) historical aspects of regionalism, (2) a detailed sequence of cultures in the Indus basin, (3) an attempt at correlation of tradition and archaeology. Naturally advantage was taken to bring the work upto date. The general response to some of the matters, which I thought myself, to be controversial has made me bolder still. I have added a few more controversial suggestions with the hope that it would provoke my colleagues to find more acceptable solutions. As Sir Mortimer remarked in his foreword to the second edition, Indian archaeology is developing at a fast rate and the writer is satisfied that this work attempts a theoretical background to the understanding of Indian archaeology. Since the first edition was published, the subsequent discoveries have confirmed most of the hypothesis made earlier. Finally, the illustrations have been inserted into the body of the text to make them more easily accessible and intelligible at the time of reading.

I cannot express my gratitude more deeply to my teachers—Sir Mortimer Wheeler and Dr. H. D. Sankalia,—who readily responded to my request and have very carefully gone through the text with their usual thoroughness. The text was considerably refined in their hands. I take the responsibility for whatever blemishes that have remained in the text. I take this opportunity to thank the reviewers—particularly Prof. Grahame Clark, Prof. K. L. Janert, Dr. Olaf Prufer and Col. D. H. Gordon. It is a great privilege to record that Late Prof. Gordon Childe went through the text of the first edition and has left illuminating comments from page to page. I am deeply beholden to this great *savant*.

As the text was passing through the press, the results of C-14 tests of specimens from the excavations at Navdatoli (1957-58) came from the C-14 Laboratory of the University of Penn-

sylvania. Advantage was taken to insert these valuable materials. I take this opportunity to express my deep appreciation of the help rendered by the Pennsylvania University and to my teacher Dr. H. D. Sankalia, who permitted me to refer to them in this edition.

The expansion in the body of the text also resulted in the addition of about twelve new illustrations to those already used in the first edition and revision of a few old ones. It is my duty to thank, Prof. O. H. K. Spate and M/s. Methuen & Co. for using some of the maps in "*India and Pakistan—a general regional Geography*". His maps have been slightly modified for figures 1, 3, 4, 5, 6, 7, 31 and 35. Similarly, the maps published by the Director General have been used and adopted for figures 13, 15, 20, 26, 27 and 28. Cambridge University Press permitted me to reproduce figs. 24 and 25. I have to repeat my thanks to Dr. A. Aiyappan for permission to publish specimens from Kurnool, to Prof. Zeuner for permission to illustrate a few specimens from Adilabad Collections, to Prof. Braidwood for permission to use Fig. 2, to Shri C. Sivaramamurty for the Hoshangabad-Narsingpur specimens, and finally to Prof. Haimendorf for illustrations of the Reddi and Kolami photographs.

I should take this opportunity to renew my thanks to my Draftsman Shri R. J. Khatri, whose untiring zeal and perseverance were always at my disposal in revising the old drawings and preparing new ones. The press copy was nicely prepared by Shri H. S. Akolkar. My colleague Shri S. C. Malik and my pupil Shri B. R. Subrahmanyam helped me in going through the press copy and correcting the proofs and preparing the index. I am obliged to all of them.

Finally, I cannot adequately express my gratitude for the help and encouragement, I have received at the hands of Dr. J. M. Mehta, the present Vice-Chancellor, Shrimati Hansaben Mehta, the former Vice-Chancellor, Dr. C. S. Patel, the Pro-Vice-Chancellor and our Dean of the Faculty of Arts, Shri V. Y. Kantak. Before closing this preface, I must place on record the great help rendered by Shri R. J. Patel, the Manager of the University Press and his efficient staff, which enabled the early appearance of this book.

Department of Archaeology,
Faculty of Arts,
Vijaya Dasami,
21st October, 1958.

B. SUBBARAO

PREFACE TO THE FIRST EDITION

This essay on Indian archaeology was the outcome of my election to the Presidency of the Archaeology section of the XVIII All-India Oriental Conference held at Annamalainagar in December 1955. The concept of the geographic personality of India as a homogeneous unit has been so deeply imprinted in the mind of an average Indian, that it has led to a good deal of loose thinking. One can easily notice a tendency to expect a uniform development of culture throughout the Sub-continent in space and time. Opposed to this concept, there has developed, particularly outside India, an equally unwarranted assumption on the basis of the survival of certain tribes and other backward communities and the consequent differential development. This takes for granted a late development and the result of it has been a fashion to push down the dates to later periods by mixing up the evidence from the progressive and backward areas. These contradictory hypotheses were brought home to the author during his visit to London in 1954. This essay was formulated and its first draft was prepared there. It attempts a rational and objective approach to the problem of the development of material culture in India, with the object of clearing the decks for further study.

One of the most basic features of India's cultural history is the diversity, at any point of time, in the cultural strata, technological attainments and other aspects of material culture in different parts of the country ; and sometimes within the same region. Going back into history, we find, for example, the highly developed urban civilization of the Indus valley, comparable in stature and time to those of Western Asia. On the other hand, we have Stone Age communities right into the Early Historic period ; and indeed into our own times, if we take the economic life of some of the tribes—the so called aboriginals of India. This differential development can, to a great extent, be explained by the ecology and geography of the various cultural regions of India. In the following pages an attempt is made to study and correlate the physical and the cultural regions from the point of view of Archaeology. This provisional zoning has to be followed by more intensive and systematic field studies.

The second and the more important part of this work is the correlation in space and time of the archaeological sequence in different parts of the country, on the basis of a number of vertical excavations and other explorations. In the development of any study there are three stages. We start in the first stage with a bold working hypothesis to introduce an order into the chaos. The second stage begins with the application of this key solution. In the initial stages, it results in an apparent simplification and easy generalization. In Indian archaeology, we are at this stage.

We will be inaugurating the third stage when we follow this tentative scheme with a more critical examination. More complications are bound to arise and we can face them given patience, skill, and the resources. The author will be more than satisfied if this study can stimulate more regional surveys.

It is my pleasant duty to acknowledge my indebtedness to my teachers and few of my colleagues, who gave me the benefit of valuable discussion and criticism at various stages. I should mention Sir Mortimer Wheeler and Prof. F. E. Zeuner of the London University Institute of Archaeology, Prof. Christoph Von Furer Haimendorf of the School of Oriental and African studies, London, and my own *guru* Prof. H. D. Sankalia of the Deccan College Research Institute, Poona ; and among my colleagues Prof. M. N. Srinivas and Shrimati V. A. Janaki of the Baroda University and Shri B. B. Lal and Shri B. K. Thapar of the Department of Archaeology, Government of India.

The writer himself had the first hand experience in Central Deccan, Central India and Gujarat based on his own field work. But it is not necessary to repeat that the work of a large number of my colleagues in India has contributed to the progress of our knowledge. Individual acknowledgements have been made in the footnotes, but I take this opportunity to express my gratitude for permission to refer to their works either published in a summary form or learnt from them during my comparative studies. Among them, I have pleasure to mention : Dr. Raymond and Mrs. Bridget Allchins, Dr. A. H. Dani, Shri M. N. Deshpande, Shri S. Ranganatharao, Shri G. R. Sharma, Shri B. K. Thapar, Shri N. R. Banerji, Shri R. C. Agarawala, Shri R. N. Mehta and Shri P. P. Pandya.

Before I close this preface, I cannot adequately express my gratitude to Shrimati Hansa Mehta, the Vice-Chancellor of the University for her keen interest in the work of the Department. I would also like to express my gratitude to the British Council and the Commonwealth Universities Body for awarding me a Travel Grant to go to London. Finally I should thank Shri V. Y. Katak, Dean, Faculty of Arts, for his ungrudging help and co-operation. Last but not the least, I should express my indebtedness to the staff and students of the Department who have helped me in various ways. Particularly I owe my nicely drawn maps and charts to Shri R. J. Khatri and Shri G. S. Telang, the Draftsmen in the Department.

Department of Archaeology,
Faculty of Arts,
September 1956.

B. SUBBARAO

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I

INTRODUCTION

The problem and the approach—Some problems of culture dynamics and interpretation.

I

The following account of the development of material culture, or to speak in more precise terms, the Pre and Proto-historic foundations of India and Pakistan, as the new sub-title puts it, is the elaboration of a hypothesis, put forward in the first edition of this book. The inspiration for the title comes from the famous attempt at correlation of British geography, history and archaeology by Sir Cyril Fox in his *Personality of Britain*. It is true, the Indian sub-continent, with its vastness and its great environmental and cultural diversity, provides a more difficult task; and a contributory difficulty is the circumstance that serious archaeological research in India is still in its infancy. Yet, an attempt has been made with the same objective of correlating Indian geography, history and archaeology. At the same time, an effort has been made to define the pattern of development of cultures; and as Gordon put it in the review of the first edition, "a great deal of that personality does emerge in this essay". Finally, this essay is a reply to the dramatic query of Sir Mortimer Wheeler, in 1946, "Where is the *Personality of India*?"

Besides an attempt has been made in this revised and enlarged edition to unravel the development of Indian culture—particularly, in respect of the large scale agricultural communities—with the help of archaeology and history. In this process, I have drawn upon some of the allied disciplines like ethnology and philology, and I am indebted to such of my colleagues who helped me with suggestions.

Until 1945, our knowledge of Indian history and archaeology consisted of an incoherent mass of well-observed and ill-observed data without a link and collected without a purpose. It will not be amiss to say that no attempt has, as yet, succeeded in giving a true perspective of Indian history. Within the last few years, archaeology has come to its own stature in Indian studies. A great lead in coordinated plan of research was given by Sir Mortimer Wheeler, and it has been carried further by his former colleagues and pupils. He initiated a policy of unfolding the sequence of cultures in different parts of the country and linking these regions with the help of certain common diagnostic traits and associated finds of an unmistakable character. Today in 1958, with the increased tempo of work by the Government of India, supplemented by the growing number of University Departments, we have a faint outline of the vertical development

of cultures in different parts of India and Pakistan. The emphasis on vertical sequence is justified in the initial stages over a vast and unexplored country, though it gives us only the skeleton without the flesh and blood. But once a rough outline has emerged within the framework of a satisfactory chronology, we shall be able to revert to large scale horizontal excavations to fill in the details, and so to reconstruct the physical and cultural environment of Prehistoric and Historic civilizations of India.

In the following pages, the recent studies in Indian archaeology (particularly since 1945) have in the main been used to explain the development of material culture in India and incidentally attempt an integrated picture of the foundations of Indian History and Culture. The primary object is achieved by an analysis of the excavated material and correlating the various physical and cultural regions in time and space.

II

For this survey, it is proposed to treat India in its geographic sense and so to include Pakistan. It is a very familiar experience of all of us that Indian history cannot be treated as a single unit at any period for any considerable duration. The obvious reason is the magnitude of the sub-continent. The maxim of unity in diversity has almost become stale. The whole history of India, in a sense, can be described as the conflict between the centripetal and centrifugal forces, engendered by geography. The former, *viz.* the centripetal forces, have always tried to give a political expression to the fundamental unity based on a common cultural and social heritage linked by a trans-continental communication system. As the following account will show, these forces have been strengthened by certain technological traditions common to the whole country. The centrifugal forces on the other hand are manifestations of the more vital geographic factors and have counter-acted the forces of unification. For example, while centralized empires like those of the Mauryas, Satavahanas, Guptas, Harsha, Mughal and the British etc., were short-lived, the ancient kingdoms like Kosala, Magadha, Gauda, Avanti, Lata, Saurashtra, Kalinga, Andhra, Maharashtra, Karnata, Chera, Chola, Pandya, seem as Dr. Majumdar¹ put it, "to have eternal lives", since they are the perennial nuclear regions in terms of Human geography.

This difficulty of the historian is gradually confronting the archaeologist. The need to understand the significance of these smaller units is being driven home by the results of Indian archaeology during the last few years. A distinct geographic pattern is emerging in the development and spread of cultures in different parts of the country. It is difficult to draw lines of contemporaneity across the lines of vertical development, since the horizontal expansion of

1. MAJUMDAR, R. C. & PURBAKAR, A.D. (Ed.) *Vedic Age. History of the Indian people*. Vol. I. Bombay, 1952. p. 101.

those cultures has been influenced and to some extent retarded by the geographic factors within, and without the sub-continent. This phenomenon can be understood by the analogy of the spread and development of Vedic-Hinduism and the Sanskrit language in different parts of the country at different periods, influencing and absorbing the regional and local forms and manifestations. This is accentuated by problems of Indian archaeological chronology, since the bullock-cart and the aeroplane move together in India. The recognition of this basic truth and its application to our problems are an essential condition in future research in India in all fields of history and culture.

III

This study postulates certain agreed definitions of terms like 'Culture', which have been used here, and the function of some of the objects such as pottery, the main raw material of the archaeologist. Similar problems of correlations and allied difficulties were faced in the Seminars held recently in America.¹ The problems of correlation on a continental basis in North America were studied by a Seminar under the auspices of the American Prehistoric Society.² In a country of the size and environmental diversity of the Indo-Pakistan sub-continent, it is impossible to postulate a uniform development of culture in *time and space*. The recognition of this fundamental principle—the geographic and ecological basis of Indian history and culture—will help us to understand the true significance of the physical and cultural diversity of the country based on deeper social, economic and technological differences, which are the results of a slow penetration of higher cultures in different parts and at different periods.

While defining culture as the total way of life of a specific group of people, Ehrlich comments, that "the archaeologists have become much more conscious of cultural dynamics and they have shown a constantly increasing tendency to restrict the use of the term 'Culture' to broader aspects of consistency in the ways of life of larger and larger units." Just as an ethnologist talks of the culture of a tribe or a village or a region, Ehrlich³ justifies the archaeological discussion of the culture of a single site, or groups of sites or cemeteries, "provided such groups can be indentified as entities, if only by common aesthetic traditions as reflected in the relative degree of identity in their ceramic wares. So used, of course, the ceramics themselves form trait-complexes rather than cultures, but they do furnish criteria for isolating groups of people whose cultures can be discussed. . . . Since archaeology deals with time-depth as well as spacial distribution, it seems admissible to use the term 'culture' to delineate differences between periods, as well as to express continuities of more general patterns in the way of life."

1. EHRLICH, ROBERT W. (Ed.) *Relative Chronologies in Old World Archaeology*. Chicago, 1953. pp. vii-viii.
2. WOODBURY, RICHARD. (Ed.) *Seminars in Archaeology—1955*.
3. EHRLICH. *op. cit.*

About the pottery, Ehrlich very aptly remarks, "some concern was voiced over the heavy emphasis on pottery, with the comment that a pottery style by itself does not constitute a culture. However, for the purposes of cross dating, pottery does fill most of the requirements. It is short-lived, normally present in great quantity, usually well-preserved once it has been broken, distinctive with regard to locality and period, and an inherently complex criterion, in that, it is subject to infinite variation in technique, form and style of decoration. While a pottery type admittedly does not constitute culture, it is a valuable index criterion."

This long explanation is not superfluous in the initial stages of studies in India, since our inadequate knowledge of Indian archaeology is entirely based on ceramic studies just at present. The following account is one of those attempts at integration, in time and space, of the known material relics excavated during the last few years. From the nature of the subject, there can be no finality. Hence, if this survey is followed by critical and extensive studies based on more field work, its purpose will have been more than fulfilled.

IV

The other important phenomenon which has been greatly neglected in this country is an attempt at an objective analysis of the familiar slogan of 'unity in diversity'. This will be discussed at greater length in the next Chapter. But it is not out of place here to state certain problems created by physiography, long distances, and relative isolation of the Indo-Pakistan sub-continent from the rest of Eurasia. Firstly, on account of our location of the margin of the Eurasian mainland, with a close proximity and yet sufficiently powerful barrier, the dynamic changes in the Western Asian cradle of civilization have left their deep imprint on the origin and development of cultures in India. The slow penetration further east and south into the rest of the sub-continent has created a complex problem of interpretation and it is not out of place to explain a theoretical idea of Geography, called the "Zones and strata concept", which has a great validity to us.

Griffith Taylor, using a biological analogy expresses it in this way. "If there be a centre where evolution (whether of organic or inorganic type) is taking place. . . . then, after a reasonable lapse of time, the various differentiated classes will be found to be ranged in zones. . . . so that the most primitive is at the margins and the most advanced at the centre of series of zones. Thus the earliest class will have covered the greatest area in its migrations; but fossil evidence of this class will be found in the deepest stratum, under the later strata at the centre of evolution. This is the *zones and strata* concept, which is less clearly called the *Age and area* concept by certain biologists."¹ This concept is very essential for an understanding of culture dynamics in

1. TAYLOR, GRIFFITH (Ed.). *Geography in the Twentieth century* London. 1953. pp. 447.

India. Its application can be considered in two different contexts : one to the relation of India and Western Asia and secondly to the relations between the several regions within the country.

As already indicated, India is cut off from the rest of Eurasia by a vast chain of high mountain ranges which have helped in the desiccation of the regions to the north. Even the trans-continental communication system of Asia and Europe, connecting China with Europe, leaves India alone. The main route passed across to Hindu-kush and Pamirs through the Valleys of Syr-Darya and Amu-Darya and then from the shores of the Caspian and Azerbaizan to Western Asia. There was a sort of a feeder route (along the Kabul Valley) connecting India, and all these routes met in Bactria and further west. Hence we have to some extent escaped the main impacts, and due to the inaccessibility and the difficulty of communications, the links were broken too often, to keep up a continuous movement of goods and ideas. And these lost their identity in the main corpus of Indian culture.

The most remarkable demonstration of the validity of this zones and strata concept comes from recent archaeological studies. While a Pre-pottery Neolithic culture in the nuclear Near-east is at least as old as 7000-8000 B.C., at Jericho, a similar community with an identical technology on the borders of Baluchistan is dated to 3500 B.C.¹ Even if we accept the slightly later dates of Jarmo and Hassuna for the incipient agricultural communities (about 5000 B. C.), a similar technological stage shows a time lag of about 1500 years. It has been well demonstrated by Braidwood² (fig. 2) who has devised his ' Iso-chrons ' to show a slow spread of technological advances from an epi-centre in the ' Fertile crescent '. Thus we are well justified in treating the Indus Basin as a peripheral region of the ancient cradle of civilization in Western Asia. Yet, the comparative isolation from the dynamic regions of the Middle East has set its own pattern of cultural development. Adopting the famous analysis by Collingwood³ of the relation between Britain and Europe, one can easily say that the rhythms of civilization have always been slower in India and its pulsations less violent, than in Western Asia. Though we do not have the quick and brilliant flowering of Sumerian, Babylonian, Egyptian, Assyrian or Achaemenid art, this seldom failed to find a reflection in India. Besides, each phase of cultural development in India, as a sort of compensation, tended to overlap with the next, to give an impression of continuity and relative permanence. This slowness of rhythm gives an impression that India " is a mere laggard " in the movement of the history of civilization, and a " refuse heap " on the edge of the Western Asian cradle of civilization.

1. CHILDE, GORDON V. *The Pre-history of European Society*, Pelican book. 1953.

2. BRAIDWOOD, R.J. *Near East and the Foundations of Civilization*. Oregon.

3. COLLINGWOOD R. G. *Roman Britain and English Settlements*, Oxford, 1945, pp.3-4.

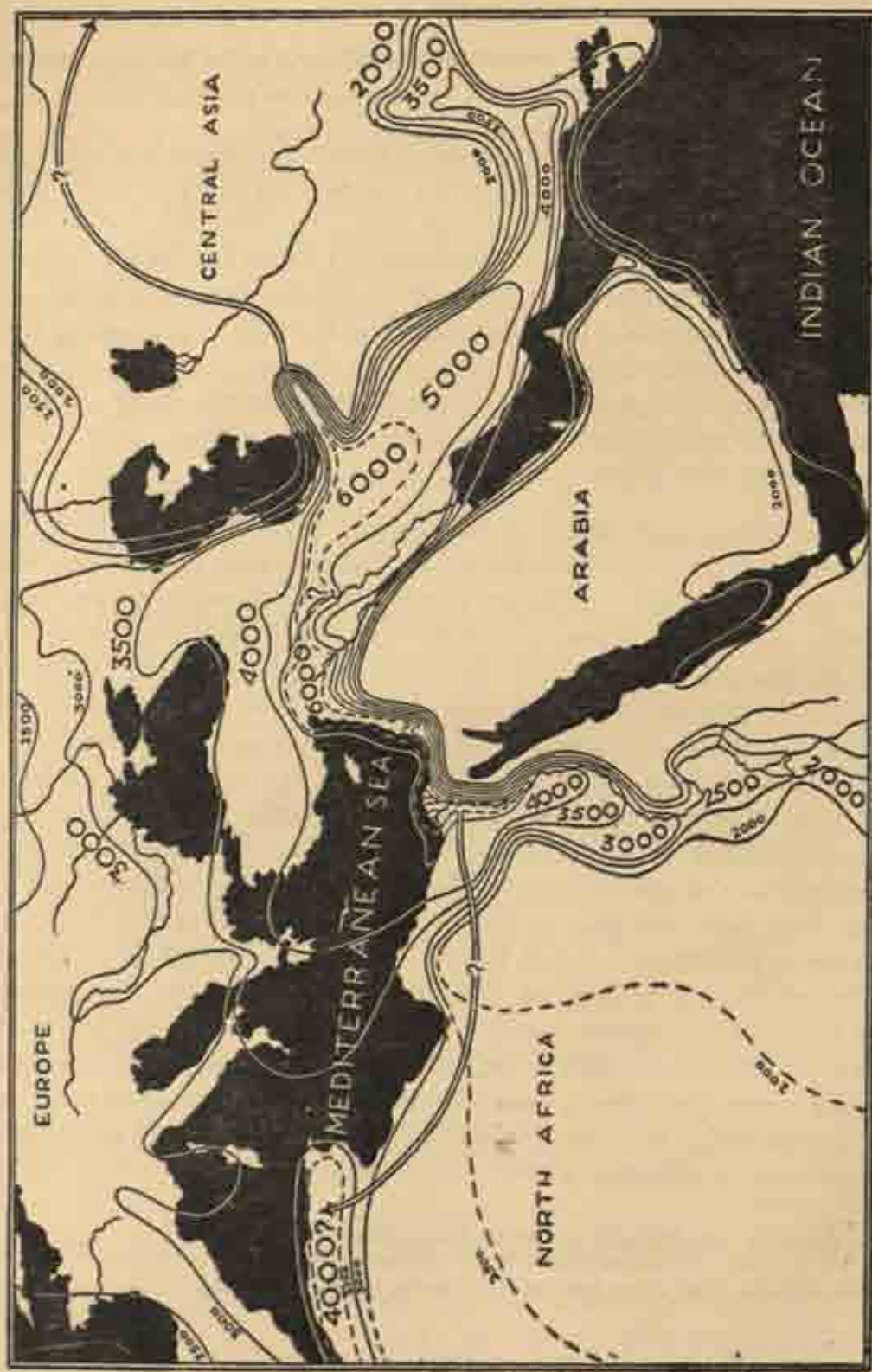


Fig. 2. The spread of food producing economy out of the nuclear Near East from an assumed beginning at Ca. 6000 B.C., suggested by means of iso-chronic lines.

(After Braidwood)

Moving to the problem of the several regions within the country, we see the same consistent pattern of migration of peoples and cultures on a set "Z" pattern of communication system linking the Himalayas with the Cape Comorin.¹ Beginning with the openings in the North-west, one moves along the Upper Punjab and into the Delta of Bengal along the Ganges. Again from the Central Gangetic basin, one sees a movement along the foot hills of the Vindhya into Central India, and thence into the coastal areas of Maharashtra and the Upper valleys of the Godavary and the Krishna, along their courses downstream. Then crossing the Ghats on the east coast, we go further down into South India. These routes cut across the hill and forest belts which neatly separate the various perennial nuclear regions constituted by the distinct river basins of the country. Hence one sees, as our further account will show, the operation of the zones and strata concept. In recent years the chronology based on archaeological excavations, has been bringing out the differences in time and space of almost similar traits in different parts of the country.

1. RICHARDS F. J. "Geographic Factors in Indian Archaeology." *Indian Antiquary* Vol. LXII. 1932.

II

REGIONS AND REGIONALISM

Introduction—Geographic Approach—Its value—Geographic factors—India and Eurasia—Geographic factors—Indo-Pakistan Sub-continent—Physical and cultural regions—Centripetal and Centrifugal forces in Indian history—Genesis of linguistic regions in India—a few examples—Historical aspects of regionalism—Development of Indian languages—Ethnic Social and Religious aspects—Conclusion.

History without Geography is like a picture without a frame. We are familiar with the slogan—unity in diversity of the Indian sub-continent. The recent studies in Indian archaeology again show certain very significant diversities in the different parts of the country and suggest a more fundamental relation between the physical and cultural regions. This diversity in the material culture of the first large scale agricultural communities seems to operate as a sub-cultural continuum throughout the Historical periods with certain modifications. The essence of human civilization is the progressive emancipation of Man from the clutches of Nature as a result of a persistent analysis of its processes and agencies and his final mastery and escape from its adversities. Hence the environment looses its strangle-hold on man with the gradual evolution of technology. Thus it is quite natural, that as we move back in time, the archaeological regions coincide with physical regions. If one extends this study to the Historical periods, we see the conflict between the centripetal forces released by horizontal spread of techniques and other cultural traits and the their reaction on the resident or local traits within the various primary foci representing the main physical regions. The latter may be described as the basis of the centrifugal forces. A study of the centripetal and centrifugal forces would thus throw a great light on the origin, development and function of the physical and cultural regions. The former particularly form an essential background for the study of the distribution pattern of individual or collective cultural traits. Depending on the nature of the traits, they may overlap in space. Of all the various indices which lend themselves for such an analysis, language is a very important manifestation of the social cohesion of a region, as it reacts on the other modes of thinking also. Hence, in the following pages, an attempt is made to correlate archaeological and physical regions with the cultural. Indian history, in one sense, is a struggle between the centripetal and the centrifugal forces. In the course of this study the writer tries to analyse forces operating behind the cultural diversity to understand our history and archaeology in better light.

II

For an intelligent understanding of the pattern of development of cultures in India, one should begin with the geographic factors. Before proceeding further on the analysis of these

factors, it may be stated, that the writer does not believe in the "Sovereign influence of the environment". A rigid determinism cannot stand, as the 'idea' intervenes between 'man' and the 'natural products', and as Febvre put it, the natural regions are areas of possibilities for human groups.¹ Yet, Man cannot escape from his environment. The relation has been very well defined by Griffith Taylor. "... Nature in large measure determines the plan, it is, of course, obvious that the man is the agent whereby the civilization progresses. He is of great importance, and as his technology improves, he develops a region farther along the lines of the obvious plan... In such exploitation, Nature determines the route of development, while Man determines the rate and the stage."² Thus the stage and the technological attainments of the society, at any time, determine the relative influence of the environment, at that period. The importance of this environmental limitation is very important for the tropical and semi-tropical areas, where the communities were technologically inferior to their contemporary higher civilizations, at any point of time. The luxuriant tropical forests were a hindrance, rather than an aid to large scale agriculture, and as Meggers has put it, "... the level to which a culture can develop is dependent upon the agricultural potentiality of the environment it occupies".³ To a large extent, environmental diversity and the way in which it has reacted on the thinking of the people plays a very major role in the cultural diversity of the Indo-Pakistan Sub-continent.

Besides, the archaeologist unlike the anthropologist, though conscious of the position of Culture between Man and Nature, has to rely more on the physical environment. He deals with extinct societies and also on account of the limitation of his material evidence, there is a methodological handicap. Hence an attempt has been made in the following pages to correlate geography, geology and archaeology with this limitation in mind.

III

The pioneer of the geographic studies in India was F. J. Richards, who indicated the main trans-continental communication system and the pattern of migration based on it, by a brilliant analysis of Indian history.⁴ Outside the sub-continent the most important region, at the "dawn of civilization", was the Afrasian dry zone, covering the great river valleys of Western Asia and N. Africa. The great cultural developments in that area, and the progressive desiccation, has resulted in radial migrations of people to the east. This position has made India a zone of con-

1. POUND, N. J. G. *An Historical and Political Geography of Europe*, London, 1947, p. 521.

2. TAYLOR GRIFFITH. (Ed.) *Geography in the Twentieth Century*, London, 1953, pp. 14-15.

For an interesting explanation of what is called 'Possibilism' in contrast to 'Environmentalism', read Tatham's chapter in the same book.

3. MEGGERS BETTY, J. "Environmental limitations on the development of Culture", *American Anthropologist*, Vol. 56, Part I No. 3, pp. 801-824.

4. RICHARDS, F. J. "Geographic Factors in Indian Archaeology", *Indian Antiquary*, LXII, 1932, pp. 231-43.

stant immigration, owing to its location on the margin of the Eurasian Continent. As pointed out by Panikkar, India's position, somewhat away from the Trans-continental communication of Eurasia, has encouraged a comparative stability. Referring to the great nomadic outbursts that revolutionized the history of Asia, Panikkar writes, "those countries which stand directly in the way of these nomads are destroyed and broken up from time to time. Those that are protected by geography received a backwash and after a turmoil settled down again".¹ This in brief may be stated to be the character of most of the invasions and cultural influences that so vitally affected the course of Indian history. Besides, the magnitude of the alluvial plains of the Indus and the Ganges and the relative solidity of the physical barriers have, to a great extent, offset the disadvantage of her location. It is idle to speculate at the present stage of our knowledge of human evolution in general, and that of Early Man in India in particular, about the beginnings of human life in this sub-continent. But in the subsequent periods it is well-known that every new wave of people, who entered the Indo-Gangetic plains as conquerors or fugitives very rapidly lost their individuality in this melting pot of cultures and added their own indistinguishable element to the make up of this culture complex. It is very difficult to isolate these various strands. A few dominant traits have left very deep imprints, but the others represent a sort of backwash and have to remain unidentified and unaccounted. The greatest example of this is the Indus Civilization itself with its obvious affinities, specially at the initial stages, to those of Western Asia, but with the distinct stamp of the great river valley in whose lap it flourished. Yet, it left its deep imprint on the whole development of Indian civilization in the succeeding ages.

The next important factor is India's long coast line with its convenient anchorages. This has played no mean role in the interchange of cultures, as it has kept a window open to the great civilization of Western Asia and the Mediterranean region. The earliest evidence of such contact has been recently demonstrated by the excavations at Bahrein.² We already know the links between the Indus basin and Mesopotamia. In the excavations conducted by P. V. Glob, seals with designs bearing some similarity to those of the Indus valley were found at this great cemetery site, identified with *Dilmun* of the Mesopotamian records. With the evidence of Harappan and Late Harappan sites in Kathiawad and on the Gulf of Cambay, it may not be unreasonable to postulate a maritime contact. The nature and intensity of this contact remains vague and obscure and calls for an intensive investigation. For the succeeding periods till the discovery of monsoons by Hippalus, our knowledge is based on vague references in literature—Indian and foreign—and in the present state of our knowledge of Indian archaeology, we are not in a position to

1. PANIKKAR, K. M. *Geographical Factors in Indian History*, Bombay, 1955, pp. 5-6.

2. GLOB, P. V. "Excavating a Bahrein citadel of 5000 years ago and seal links with Ur and Mohenjo-daro." *Illustrated London News*, Jan. 11, 1958, pp. 54-55.

corroborate.¹ At the beginning of the Christian Era, however, we get extensive evidence of contact with the Mediterranean world in the form of antiquities found all over the country. The remarkable coincidence of the discovery of monsoons, and the blocking of the 'silk route' of China by the Roman and Parthian wars, seem to be an important landmark.² Can this be attributed to the increased navigation techniques opened by the monsoons, in contrast to the slow coastal trade?

IV

Within the country, the wide inviting alluvial plains, opening on to the main gateways to Western Asia, abut on an older land mass of Peninsular India, cut up into important river basins separated by ridges of hills and forests. This feature, in particular, has enabled the earlier inhabitants to isolate themselves in what may be called *culs de sac* or refuge zones. These factors account for certain peculiarities, or indeed anomalies, of Indian archaeology, which clearly show the features of a zone of immigration, where "the first appearance of a form is rapidly followed by the maximum, after which, the form lingers on in a gradually diminishing proportion".³

In this feature, India stands midway between Europe on the one hand, and Africa and Australia and Oceania on the other. In Europe, there were continuous cultural impacts from Western Asia and the Mediterranean region. Besides, "...every dominant civilization imposed its cultural pattern on all people within its orbit", and as pointed out by Haimendorf,⁴ "the geographic conditions did not favour isolation of refuge areas". In Africa, on the other hand, the two wide deserts of Sahara and Kalahari, on either side of the huge Equatorial forest, have

1. MOOKERJI, R. K., *Indian Shipping-Sea-faring and Maritime Activities of the Hindus from the earliest times*, 2nd Ed., Bombay, 1957.

"Again, as the dates of most of the Indian literary works to which reference will be made are unhappily not yet a matter of certainty, I could not make the evidence drawn from them the basis of any historical treatment of the subject or regard them as any help to a chronological arrangement of the facts regarding the shipping, sea borne trade, and maritime activity of India."

2. PANIKKAR, K. M. *India and the Indian Ocean*. London, 1951.

"With Hippalus's discovery of the monsoons, the navigation of the Indian Ocean underwent a revolutionary change. Egypt had become a Roman province seventy-five years earlier (in 30 B.C.) and with the authority of the Empire established on the Isthmus, Roman trade in India had, even before the time of Hippalus, increased greatly in volume and range. We have Pliny's evidence that after the occupation of Egypt, Romans came 'to control a compendious route whereby India was brought near, that trade thither became lucrative'". p. 23.

3. WRIGHT, W. B. *Tools and the Man*. London, p. 160.

4. HAIMENDORF, CHRISTOPH VON FURER. "Problems and prospects of Indian Anthropology". *Presidential Address, XXXVII Indian Science Congress, Anthropology and Archaeology Section*, Poona, 1950, p. 2.

A similar, but more brilliant interpretation of the Pre-historic basis of European Society is given by the late Gordon Childe. He has demonstrated the main movements and impacts of Western Asia and North Africa to Europe and their slow spread, influencing and at the same time being influenced by it.

CHILDE, GORDON V., *Pre-history of European Society* Penguin Series, 1958.

completely isolated a large portion of the continent, and the inhabitants have not advanced beyond the stages of primitive agriculture, stock-raising and hunting. Only the coastal belts, facing the Mediterranean and the Indian ocean, have to some extent escaped this fate. Besides, with the intensive exploitation of the N. African belt prior and during the Roman Empire, Man lent his evil hand to Nature in turning it into a desert, making it more or less a blind alley of civilization. Australia and Oceania were completely isolated, and, but for small scale island-hopping adventures, their isolation was broken only by the much later European colonial expansion.

India displays both these phenomena and stands midway. The chief river basins of the country: the Indus, Ganges, Narbada, Tapi, Godavari, Krishna and Kaveri, were in turn penetrated and exploited by large scale agricultural communities, driving the older and static people in a more primitive economy into the forested mountains, where they have survived to this day. The main river basins of the country, with a rainfall between 20 and 40 inches, which can sustain large scale agricultural communities, have been colonized or occupied. One can notice a fine correlation between this optimal rainfall zone and the vegetation map of the country showing the areas cleared for cultivation. (Fig. 3).

In between these two categories of areas of attraction or *perennial nuclear regions* and the areas of isolation or *culs de sac*, we have what may be called areas of *relative isolation*. This classification can ultimately be linked with the system of trans-continental communication. The areas of relative isolation are characterized by their distance from the main highways for the movement of peoples and cultures. Hence they display a different and complicated culture pattern, since their isolation was frequently broken by fresh movements and we see a curious pattern of survival of the older with the new.

Accepting this fundamental concept of areas of attraction, relative isolation and isolation, the whole pattern of development of material culture in India may be defined as one of the horizontal expansion of the higher cultures, leading to a displacement, contraction, and isolation of the lower cultures, in different parts of the country, at different periods, and at different cultural levels. The divergence in the country is due to the difference in the cultural *milieu* of the first large scale agricultural communities in the different regions. Naturally, this cultural development, in space and time, was controlled by the geographic features of the individual regions and the relative effectiveness of the barriers—physical and human. The interaction has given rise to a very interesting pattern which can be seen in the fundamental unity of Indian culture with its associated variety. Following Ratzel and Vidal de la Blanche, we can describe these smaller nuclear zones as '*Provincial States*' within a '*National State*'. The former may be defined as "complicated economic units opening on to the same routes, converging on the same river,

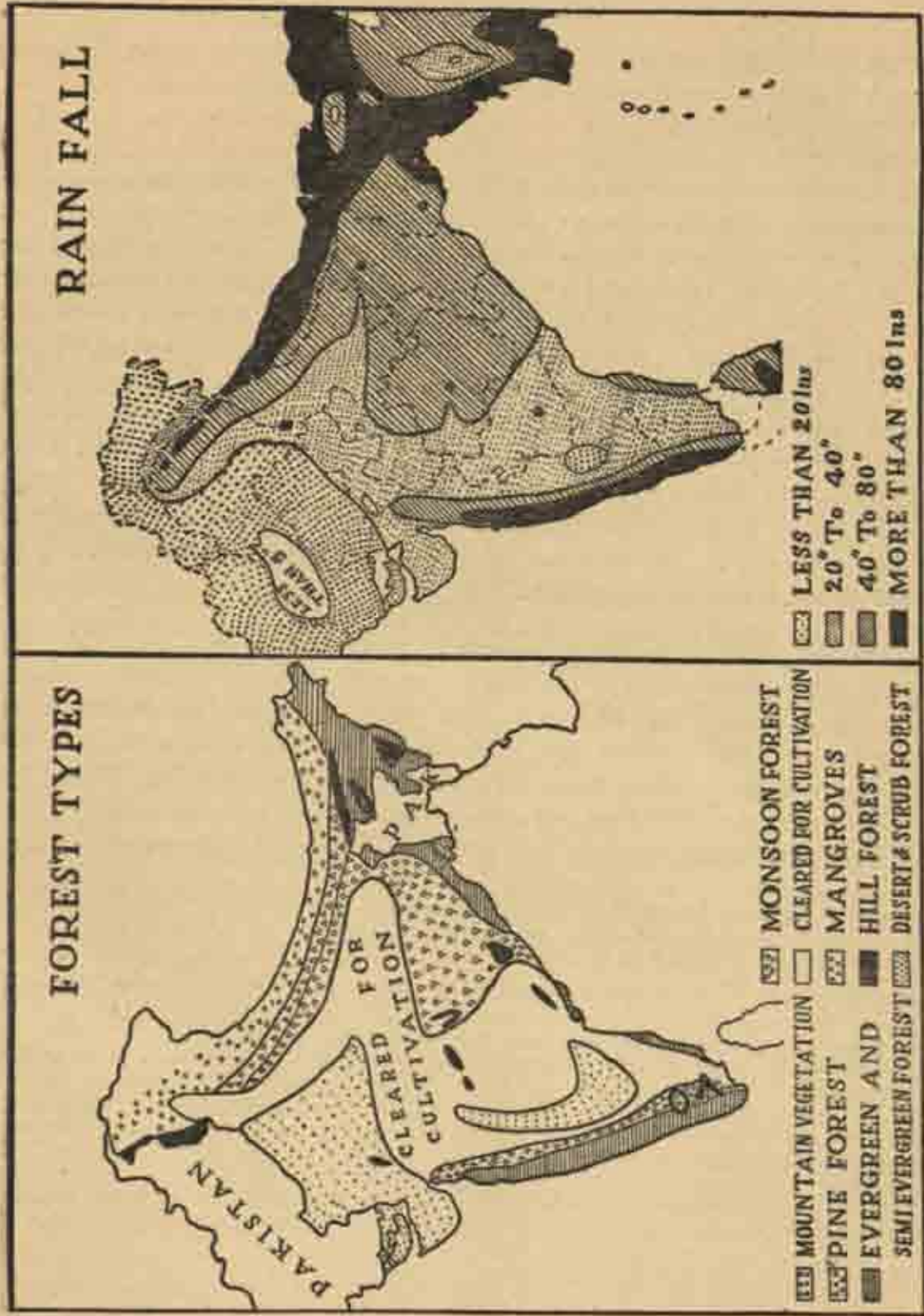


Fig. 3. Note the relation between the optimal rainfall and areas cleared for large scale agriculture communities.

commanding one another and finding it necessary to exchange their produce and their means of defence : in short, societies for mutual protection, moral and physical solidarity".¹

V

Before we proceed further let us define the physical and cultural regions of the sub-continent. What is the criterion of this sub-division ? Various methods have been tried by different authors. This old concept of regions has received a new life in the hands of modern geographers. According to E.W. Gilbert, "Geography is the art of recognizing and describing the personalities of regions".² Among the systems based on pure geo-morphological features, the most satisfactory one seems to be that of M.B. Pithawala.³ It is based on the main physiographic sub-divisions : Himalayan uplands, Indo-Gangetic plains and Peninsular India. These are again sub-divided on geological or morphological features. (Fig. 4). From the point of view of cultural studies, the first analysis of Indian geographic regions is that of Spate.⁴ But, since we have already explained the function of hill and jungle belts, we can proceed on that basis. It is very difficult to determine the linear boundaries, and hence an attempt is made here to determine the foci of the various zones. This system has the advantage of finding regions academically and not to suit the convenience of the politicians.

The most important belt running right across the country from the West coast to the Delta of Bengal may be described as the *Vindhyan complex* comprising the Satpuras, Vindhyas, Mahadeo hills, Gawaligarh, Maikal range, Hazaribagh range, the Chota-Nagpur, the Singhbhum and Manbhum plateaux. This is also the most populous tribal belt sheltering Bhils, Dangs, Gonds, Santhals, Uraons, Baigas, Gadabas, Marias and a host of other tribes. Running almost at right angles to this system, at its western end, is the *Western belt*, beginning with the Aravallis (almost touching Delhi), the Sahyadris and long chain of Western Ghats down to the southern tip of the

1. FÉVRE. *Geographical introduction to History*, 1925. p. 311.

2. TAYLOR, GRIFFITH (Ed.) *Geography in the twentieth century*, 1953.

Sec. "Geography and Regionalism" p. 346.

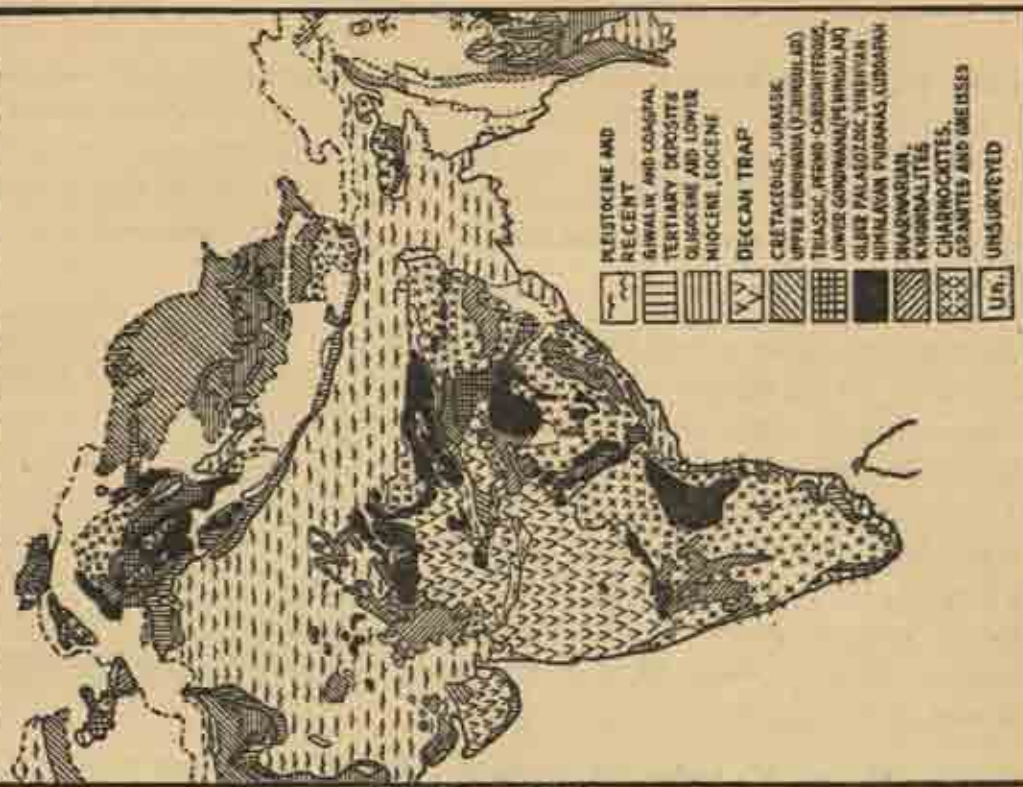
3. PITHAWALA, M. B. "Physiographic divisions of India, Burma and Ceylon". *Science and Culture*. VII. May 1942. pp. 533-43.

4. SPATE, O. H. K. *India and Pakistan,—A general regional Geography*, London, 1954.

A very interesting analysis of India's agricultural regions was attempted by the Reserve Bank of India (Rural credit survey), Dr. Chen Han-sung and Dr. Daniel Thorner. They have defined various criteria like—Socio-Economic systems, types of land holding, concentration of control, labour supply, control of credit market, geographic factors like soil, climate, water supply, drainage etc., economic organization and over-all degree of modernization. Yet the main regions arrived at do not very much differ from the physical regions of Spate. "The demarcation of the Agrarian regions of India" by Daniel Thorner.

Rationale of regional variations in Agrarian structure of India. Seminar Series 1 of the Indian Society of Agricultural economics, Bombay, 1956.

GEOLOGICAL MAP OF INDIA



PHYSIOGRAPHIC DIVISION OF INDIA

After M. B. Pithawala

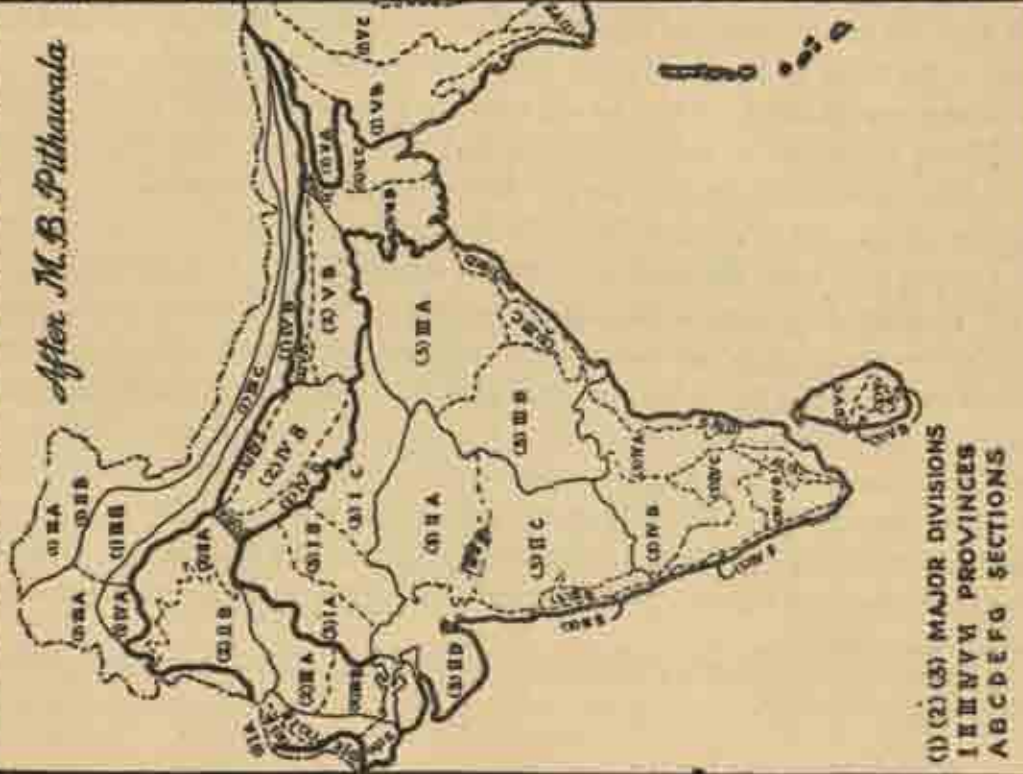


Fig. 4

peninsula. Beginning in a geographic order, we have Bhils, Dangs, Wotis, Toda, Kurumbar, Kadar, Puliyan Muthuvan, etc., inhabiting this zone. At its eastern end, the Vindhyan Complex is joined by the Eastern Ghats, which run right across, more or less parallel to the east coast, upto 13° N Latitude, and then take an oblique turn south-westwards to join the Western Ghats south of the Mysore plateau. The most important tribes living in this belt are the Savara, Baiga, Chenchu, Reddi, Irulas and Yenadis etc.

Ethnographic studies in India based on modern methods have not yet made sufficient progress. But one can see the close relation between the thick jungle and tropical forests and the main centres of the so called primitive tribes. There is a harmonious adjustment of their physical and cultural environment, which has enabled them to survive. (Fig. 5). The significance of these belts of jungles and hills cannot be exaggerated. Depending on the depth of these belts they have managed to survive the expansion of the people from the plains. A series of studies, carried out by the Sociology Department of the M. S. University of Baroda, have shown the remarkable difference in settlement patterns between the plains and the uplands still sheltering the tribal communities. While the villages of the plains are generally nucleated, we get the dispersed type of settlement in the uplands.³

Now working on this system, we can easily define the regions and their foci. Bounded by the Aravallis and the desert of Rajputana in the east, and the Sulaiman and Kirthar ranges in the west, is the Indus basin, draining the central Himalayas. This can be roughly subdivided at the point where the hills from the west and the desert in the east converge near the Bugti country, into the lower and the upper, corresponding to the Sind and Punjab respectively. Beginning with Delhi, where the Aravallis converge towards the Himalayas, the Gangetic basin runs east from the narrow divide. On its southern flanks lies the Vindhyan complex. The lower deltaic region of the Ganges, as it leaves the Vindhyan complex, is Bengal. The valley of the Brahmaputra is Assam. Forming, as it were, a little triangle constituted by the Aravallis in the west, and the Vindhyan running obliquely towards the Gangetic basin, is the plateau of Malwa, drained by the rivers—Chambal, Banas, Sipra, Nerbada and Son. Lying south of the Vindhyan, and constituting the upper basins of the rivers Krishna and Godavary, and more or less co-extensive with the Deccan Trap area, is Maharashtra. The lower basins of these two great rivers constitute Andhra. The southern part of the Krishna basin, more or less constituting the 'rocky triangle' formed by the Eastern and the Western Ghats viz. the Mysore plateau, is Karnatak. At its southern end, it is drained by the river Kaveri. Beginning from the constriction of the Nagar hills and Pulicat

1. SHAH, A. M. "Caste, Economy and Territory in Central Panchmahals". *Journal of the M. S. University, Baroda*. IV. March 1955. p. 67.

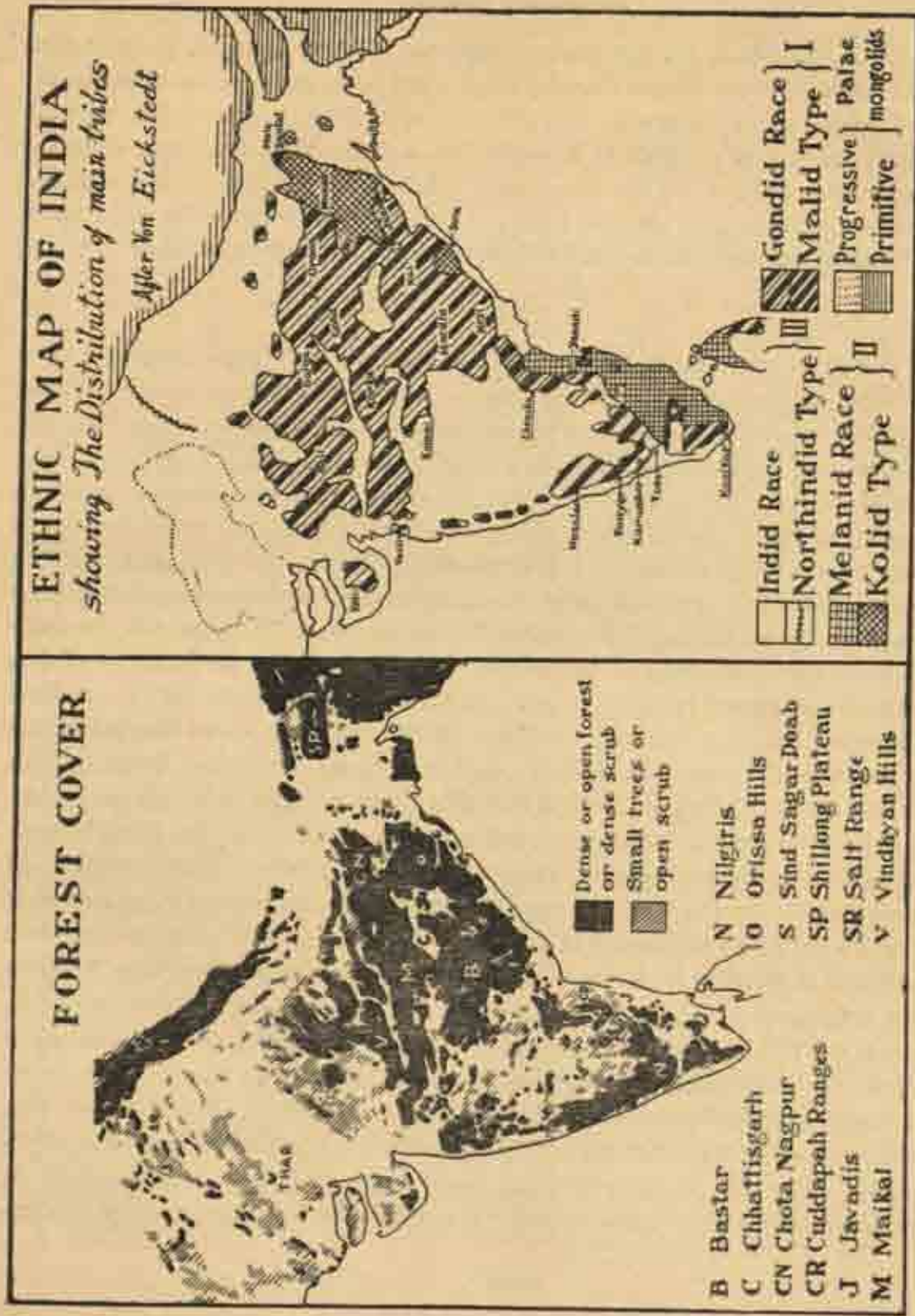


Fig. 5. Note the coincidence between the forested mountains and tribal areas. (See also fig. 10)

lake, and running right along the East coast is Tamilnad. The narrow coastal plain on either side of the Palghat gap in the Western Ghats is Kerala. The valley of the Mahanadi, surrounded by hills and plateau, constitutes Orissa. The northern part of the West coast and the peninsula of Saurashtra, abutting on the desert of Rajaputana is Gujarat. Rajaputana really consists of two natural divisions : Mewar and Marwar on either side of the Aravalli ranges. Mewar drained by the river Banas falls into the Gangetic basin and is more or less an extension of the Malwa Plateau. The semi-arid desert country, Marwar, lies to the west of the mountain range. (Fig. 6)

VI

Due to political exigencies, it has become a fashion, of late, to decry centrifugal forces without a proper assessment of their origin and significance. It is difficult to get a true perspective of Indian history without the recognition of the centripetal and centrifugal forces, the inter-action of which constitutes Indian history. The story of India, based on conventional literary and historical material, is one of an expanding vista of a continent, which was colonized, physically and culturally, by higher communities displacing their predecessors. The most important of such movements that vitally affected our history was that of the Aryans. They designated their first region of settlement as ' *aryavarta* ' and as they moved into the land, spreading their influence and culture, they enlarged the connotation of their term for homeland. With the result that, while *Aryavarta* meant the upper valleys of the Punjab and N. W. frontier at the beginning of their expansion, by the 3rd century B. C. it denoted the land between the Himalayas and the ' Southern Sea '. The conventional slogan of unity in diversity does not fully bring out the true significance of the vertical forces representing the complex development of regional cultures in their local or provincial framework, and the impact of the horizontal forces that affected the various regional cultures. When these regional forces consolidated themselves, they tried to expand at the expense of their neighbours, giving rise to supra-regional forces. When 'political conditions settled, and a full-fledged State-system came into existence, this expansionist urge resulted in the emergence of larger and larger States culminating in the empires of Indian history. For example, with the consolidation of Magadha in the heart-land of India at the end of the 5th century B. C., the first empire in Indian history appeared under the aegis of the Mauryans at the beginning of the 4th century B. C. This was facilitated by the earlier attempts at colonization and expansion of the North Indian Aryan culture into the southern peninsula. Thus the establishment of the Mauryan empire incorporating the whole of India as far as the northern borders of Mysore more or less represents the first concrete evidence of the emergence of political and cultural homogeneity of the country. This pure political complexion has to a very extent been counteracted by the nature and process of the aryanization of India. It was not a mere folk-movement or immigra-

PHYSICAL REGIONS of INDIA & PAKISTAN

Adopted from Spate

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MILES

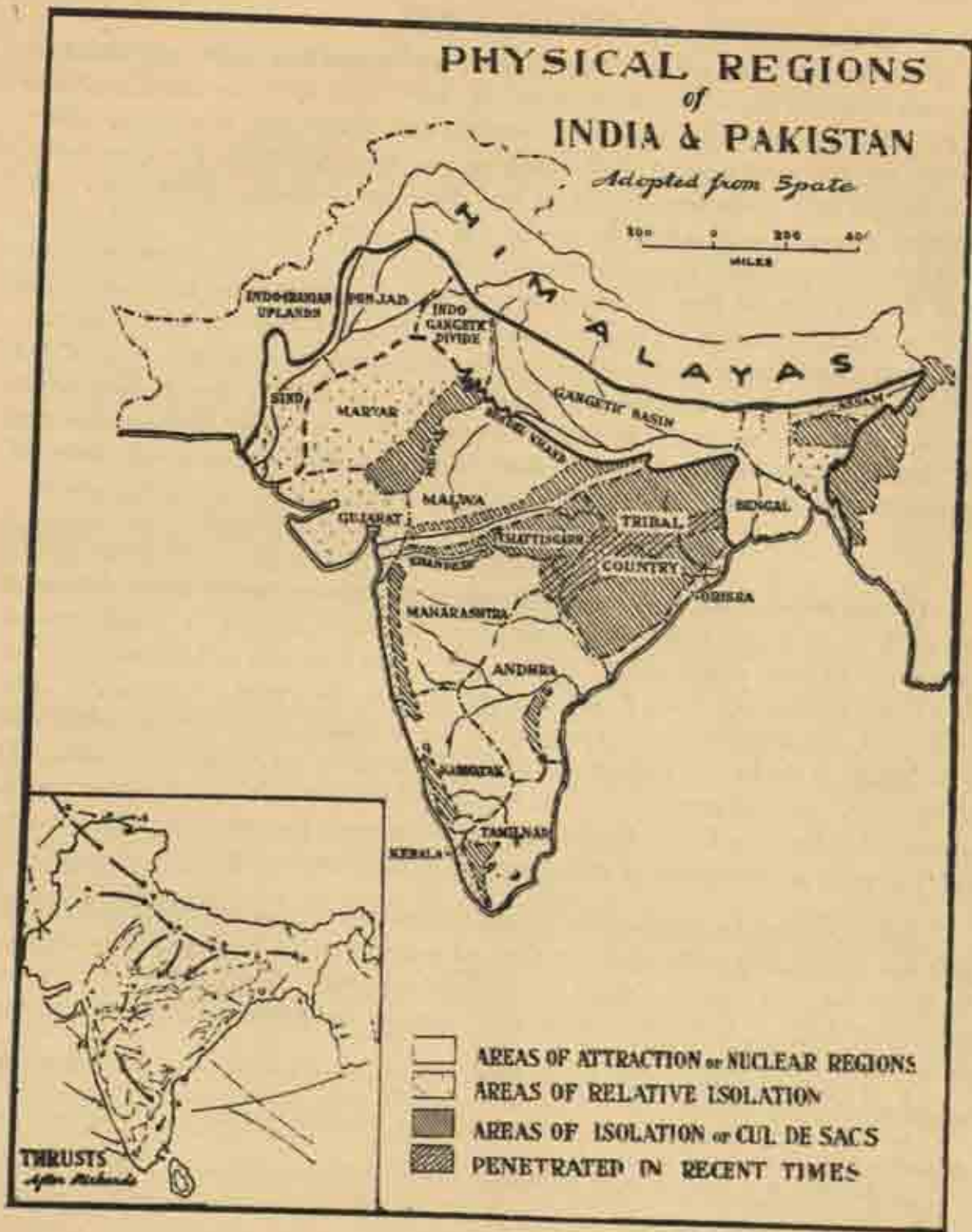


Fig. 6.

tion of colonists, but a slow spread of a people who freely adapted their Social and Cultural life as a result of contact with the new people whom they met. Thus various movements of peoples and cultures at different periods in our history have given rise to a synthetic or composite culture. Its origin, says Jawaharlal Nehru, "may be traced back, on the one hand to the Pre-Aryan period, the civilization of Mohenjo-daro etc., and the great Dravidian civilization. On the other hand, it received a powerful impress from the Aryans who came from Central Asia. Subsequently, it was influenced by repeated incursions from the North-west and later, by the people who came across the seas from the West. Thus this national culture gradually grew and took shape. It had a remarkable capacity for synthesis and of absorbing new elements."¹ It is the horizontal unity built by this cultural synthesis, that has given rise to the fundamental unity of this Sub-continent, as it is based on a common cultural heritage. Yet this very story of a fundamental unity is not complete nor true, if we ignore the counteracting centrifugal forces—representing the "Provincial State" within a "National State" or—to put it in another way—the forces of regionalism in contrast to a united state.

VII

The very genesis of our modern linguistic units in their historical setting is one of the most important proofs of these latent and dormant geographic factors, which in a proper political environment led to the present pattern. This process resulted sometimes in the division of larger units (Krishna-Godavary basins)² and at other times in the fusion of contiguous units (Gujarat).³ Let us take these two type-areas. A very interesting example of the former type is the division of the Krishna-Godavary basins into Maharashtra and Andhra, as opposite ends of the valleys. As Spate puts it, "..... the boundary of Maratha State shows a striking accordance with the edge of the Lavas; hence the division of the State (Hyderabad) into Marathawada and Telangana, a rare instance of official recognition of regionalism".⁴

It is no accident, because these two geological formations have an important bearing on the soils, and consequently on the *vegetation, food and economic life* of the people. The Trappean fertile 'Black-soil' is the land of wheat, cotton, *bajra* and pulses. On the other hand, the red metamorphic loams of Andhra produce rice, sugar, sesamum, and millet. Telangana has a better

1. In a foreword to the work in Hindi of R. D. Sinha Dinkar—published separately in the *Times of India*, Feb. 21st, 1956.

2. SUBBARAO, B. "Geographic factors in Andhra History and Archaeology." "*Bulletin of the Deccan College Research Institute*, IX, pt. 1, 1949, p. 172.

3. SUBBARAO, B. "New light on the Archaeology of Gujarat" Paper submitted at the II Gujarat Research Workers conference, 1952.

4. SPATE, O. H. K. *op. cit.* p. 644.

but uncertain rainfall, yet, the soil cannot retain moisture. Hence it is a land of tanks and other means of artificial irrigation. As Law put it, "these differences in physical nature are associated with soil, economic and linguistic differences in the two natural divisions of the State."¹

Recent archaeological work has shown the difference in the cultural *milieu* of the first extensive agricultural and pastoral settlements of both the areas. The more wooded upper reaches of the Godavary were first exploited by widely distributed Chalcolithic communities with heavy metal tools of copper and bronze,² which must have enabled them to clear the forests. The lower valleys, falling within the Gneissic-metamorphic zones supported wide-spread Neolithic agricultural folk, living on or near the granite outcrops overlooking their fields. There is interesting evidence, probably of trade or other contacts between the two regions. It will be discussed in greater detail at a later stage.

Similarly, Gujarat shows the other pattern of the fusion of contiguous units. It consists of three natural divisions : Saurashtra, Anarta (N. Gujarat) and Lata (S. Gujarat). Anarta, more or less, coincides with the distribution of the semi-arid wind blown soils, and Lata corresponds to the fertile projection of the Western Littoral (Konkan coast).

As the archaeological picture will show, Saurashtra on account of its proximity to the Indus Basin, shows an extension of the Harappan civilization. The semi-arid Anarta supported primitive hunting communities, who were gradually pushed to the hills on the eastern flanks of Gujarat. The South shows strong Central and South Indian influences. Very significantly, the Gujarat region begins to develop an individuality and homogeneity in the Early Centuries of the Christian Era. (See further details).

It may be stated at once that these cultural and linguistic zones have very often defied and survived political disturbances and events. As Spate has shown, there has been tendency throughout Indian history for political boundaries to coincide with nuclear regions, yet, this was not the case always, as the map prepared by Day shows. Look at the political fragmentation³ of the Krishna-Godavari basins ! (Fig. 7). But whenever they have coincided in the history of these zones, we see a fine flowering and consolidation of the regional cultural forces. For example, under the aegis of the Eastern Chalukyan Dynasty that ruled a major part of the Andhra for four centuries, the latent geographic forces have helped the assertion of its individuality. This manifested itself in the appearance of the Telugu language in the records of the 8th century, and by the

1. LAW, JOHN. *Hyderabad*, Department of Information, Hyderabad, pp. 55-61.

2. SANKALIA, H. D. and DIX, S. B. *Excavations of Nasik and Jorwe*, Deccan College Monograph series. 1956, Poona.

11th century, it assumed the status of a literature. This consolidated the cultural homogeneity of Andhra.

Similarly at the end of the 10th century, we see the emergence of the first strong political power centred on the soil of Gujarat with the Solankis of Anhilwad Patan. They re-united the whole region and their rule of three centuries was followed by the Sultans of Delhi and Gujarat with their capital at Ahmedabad. Thus the unity that was forged earlier, by nature, was finally consolidated. Is it strange, that the 11th century should mark the beginning of the old Gujarati from the Western Apabhramsa? It is during this period, which may be called its "Golden Age", that Gujarat developed its distinct provincial character in art and architecture and significantly produced a large mass of literature.¹ The artistic traditions of the Solankis were blended with the Muslim during the Gujarat Sultanate, and it gave rise to the fine Indo-Sarcenic architecture of Western India.

VIII

Let us try to trace the origin of this regionalism. We have already described the main foci of the various physical and cultural regions in India. It may be noted that each of these regions started with a well endowed focus, around which the neighbouring areas merged. Hence it is no accident that these physical regions correspond to the linguistic and cultural divisions of the country. "The State", said E. W. Gilbert, "is an artificial contrivance by which several or perhaps many geographic regions, some natural, some man-made, are welded into one working unit. . . . regions can be regarded as separate limbs of the body-politic: regional diversity need not be a danger and it can strengthen the unity of the State".² Thus as already described, each of these areas in the Indo-Pakistan sub-continent were natural geographic regions with their frontiers marked by natural barriers. Owing to diverse historical reasons, each of these regions asserted their independent personality with the growth of population, rise of local dialects and vernacular languages. As Sunitkumar Chatterji pointed out, ". . . the economic milieu, and the special training which the mind receives in an organised community or corporate body of men, create a framework of civilization or ordered life which commonly finds expression in the language of that body of men: and hence we are more justified in speaking of language cultures than of racial cultures".³

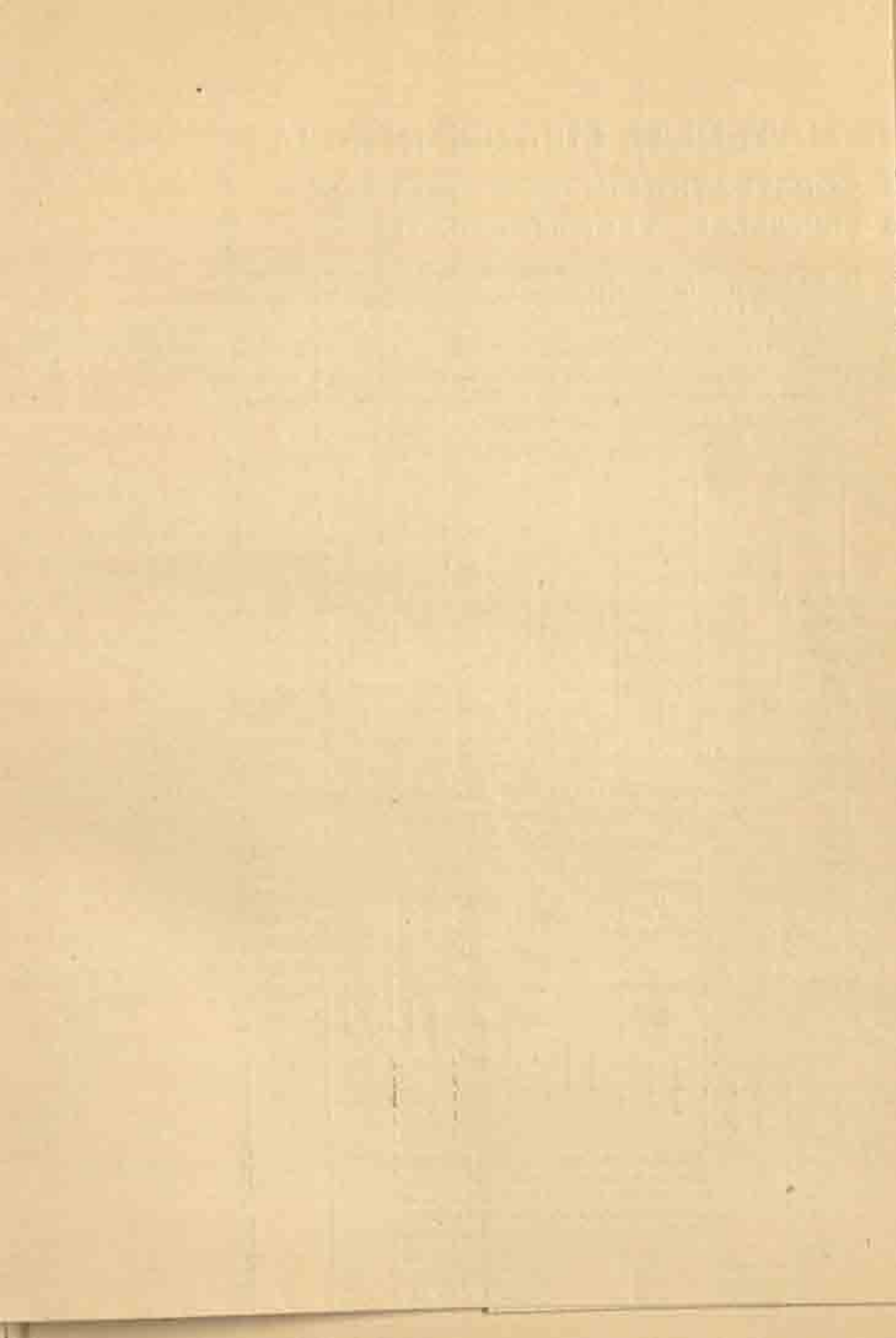
One of the most important factors, operating behind the diversity, and the emergence of language cultures in India seems to be the slow spread, in space and time, of the large scale agri-

1. SANKALIA, H. D. *Studies in the Historical Geography and cultural ethnography of Gujarat*, Deccan Monograph series. 3. Poona. 1945.

SANDESBARA, B. J. *Literary circle of Mahamarya Vastupala*, Singhi Jain series. 1953.

2. GILBERT, E. W. *op. cit.*

3. MAJUMDAR & PUSALKAR (Eds.) *Vedic Age*, Bombay. 1952. p. 145.



DEVELOPMENT OF MATERIAL CULTURE IN INDIA

A TENTATIVE CORRELATION IN TIME AND SPACE BASED ON MINIMAL TERMINAL DATES

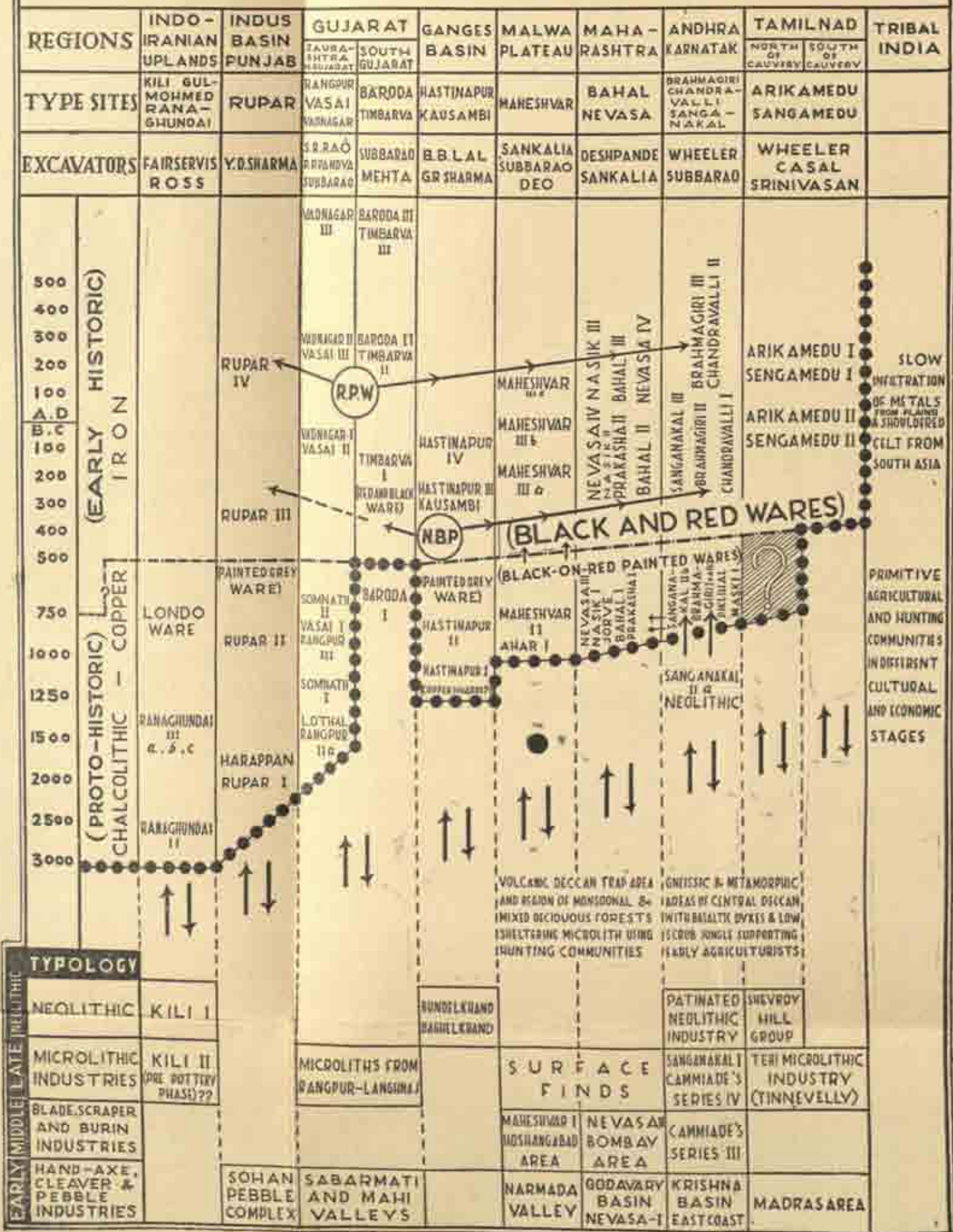


Fig. 8.

cultural communities with or without the plough. Depending on the nature of the contact and the number of immigrants, the constitution of the local population should have differed. Recent studies in Indian archaeology clearly demonstrate the technological and the consequent social and economic differences within the first agricultural settlers in each of the regions of India. This "historically derived sub-cultural continuum" has resulted from a series of events and facts, and these tended to maintain, in time and space, a special set of patterns and values.¹ Hence it will be very profitable to look at the material culture and technology of these first farmers. A very detailed discussion on the sequence of cultures in each of these regions is given in the main body of the text. But it will not be improper to anticipate and give, in brief, a short account to indicate the physical or the material basis of the personality of the culture regions in India.

The story of these regions in a "pre-agricultural economy" does not concern us, since environmental diversity reflects itself in the presence or absence of large agricultural populations. It is very remarkable that the entire sub-continent displays a uniformity in its stone age cultures. Significantly the differences emerge with the Neolithic and later phases of Indian history, where we have evidence of horizontal spread from different foci. A close study of the migrations, and the historical events that surround these spreads give a set of such historical continua for the various regions. We have already defined the pattern of the development of cultures as one of gradual displacement in time and space, by large scale cultivators, of the more primitive agricultural, hunting and fishing folk. A look at Fig. 8 will show the emergence of large scale agricultural economy in each of these regions. The first farmers in the Indus Basin and the Indo-Iranian borderlands belonged to the Pre-Harappan and Harappan cultures, which are partly derived from the higher cultures of Western Asia. In the Gangetic basin, they are represented by the "Grey Ware folk," probably the Aryan immigrants from the North-west. While the Vindhyan foot-hills were inhabited by Neolithic communities, the Malwa plateau and Maharashtra were first cleared of their virgin forests, by Chalcolithic folk who seem to carry with them some of the Late Harappan elements with some new Iranian influences. In the Central Deccan, (Andhra-Karnatak), widespread Neolithic communities preceded the advent of the Chalcolithic folk moving from Maharashtra. In the extreme tip of the peninsula (Tamilnad and Kerala), Megalithic folk in an Iron Age economy seem to be the first large scale settlers. While in Gujarat and Kathiawad a few Harappan elements seem to have survived for a longer time, in Eastern India on the other hand, (Orissa, Bengal and Assam), the Stone Age folk seem to have survived, till these areas were colonized in the Historic period. Thus the establishment of large scale agri-

1. VOÛT, EVON Z. "American sub-cultural continua as exemplified by the Mormons & Texans", *American Anthropologist* LVII. No. 6. Dec. 1955, pp. 1163-70.

cultural economy in the main river basins of the country was spread over a span of 3000 years (3500 B.C. for the Kili Ghul Mohammad to about 500 B.C. for the Megalithic cultures of the South). Hence it is not surprising that this difference in the technology and socio-economic development of the various regions should have been at the root of the later cultural divergences.

This picture, based on archaeology, provides a sort of physical framework of regionalism. History based on literary sources does not belie this story. Since the Aryans gave us our extant literature, the earliest historical sources belong to them. That story begins with the Aryan settlements in the upper valleys of the Indus basin, and the region immediately to the east called the *Brahmavarta* in the Rigvedic age. In the Later Vedic period, we begin to see the emergence of small monarchies and States in the western Gangetic basin. About the 6th century B.C., the Buddhist literature finely sums up the political situation in the North by describing the 16 kingdoms or *janapadas*. Panini for the first time mentions Kalinga in the middle of the 5th century B.C. The kingdoms of the extreme South come to be mentioned only by Kautilya and Asoka. The real unified history of the sub-continent thus begins with the Mauryans who gave political unity to the country, the chief river basins of which were settled by large scale agricultural communities by about the 5th century B.C. Naturally this formative period of Indian history is not very firmly documented and it may be treated as the Proto-historic era of movements.

In the historic period, we see the emergence of full-fledged States and the political history of India is one of struggles between the various States for power and hegemony. Of the 16 States that emerged in N. India in the 6th century B.C., Magadha, by a series of struggles and matrimonial alliances, controlled the whole Gangetic basin by the time of the advent of the Nanda rule in the 5th century B.C. According to the tradition, the Nandas conquered Kalinga and took away a Jaina image. This naturally paved the way for the conquest by the Mauryans of the Punjab which was earlier unified by the armies of Alexander. With their firm grip on the Indo-Gangetic basins, the Mauryan conquest of the rest of India became easy and, if we are to believe the tradition, parts of Mysore were acquired by Chandragupta Maurya, the founder of the dynasty in the late 4th century B.C. Thus came into existence the first empire of Indian history. This political fabric led to a great development of communications within the country and is it surprising to find Asokan inscriptions in Brahmi spread over the whole empire at critical points along the ancient highways? The architect of the Mauryan imperialism was the great pioneer of Political economy in the country, Kautilya, who has left a treatise called the *Arthashastra*. He describes the whole land between the Himalayas and the sea as a " *Chakravarti kshetra* " (an emperor's

1. GANAPATI SASTRI (Ed.) *Kautilya's Arthashastra*. Trivendrum Sanskrit series. LXXIX. Vol. I p. 338.

देशः पृथिवी तस्यां विनवत्समुद्रान्तर्मुदीपीने लोकस्यस्यपरिमाणम् त्रिवेद्वत्कारिणोऽयम्

realm) and that it is the supreme duty of king to proclaim his suzerainty over this land. Earlier, Buddhists developed the concept of an ideal, spiritual chakravarti, and it is based on the political concepts of *Samrat* and *Chakravarti* by the later vedic and Smriti writers, who elaborated royal and coronation rituals. Are not the elaborate *Rajasuyas* and *Asvamedhas* the political sanctions behind the story of imperialism, inaugurated by the Nandas and the Mauryas? Thus this ideal remained a vital force in Hindu political theory and it was the ambition of each and every ruler to become a *Samrat* or *Chakravarti*. Even as late as the 10th century, Rajasekhara defines a *Samrat* as the one who conquers the land from the Himalayas to the southern sea.¹ It is very amusing to go through the inscriptions of the Historic period, when even small rulers made highly exaggerated claims about the extent of their kingdoms and performed *Asvamedhas* as a symbol of their power over their neighbours (the greatest example being the mythical accounts of Saha-deva's protection of Yudhistira's horse, or the one of Kalidasa's description of Raghu's conquests where the whole country, with its geographic names of a later period, has been described as being conquered).

Going through Indian history in a rapid survey, one finds that the practical realization of this vital ideal suffered setbacks due to the strength of the centrifugal forces. In the 2500 years of corroborated history of India, there was a semblance of political unity in the sub-continent during short spells of Mauryan, Khilji, Mughal and British rule and today, after the advent of independence. The rest was a long dreary story of struggles between the various kingdoms. But, as Day has shown, there was a tendency for the various kingdoms—at least the nuclear areas—to coincide with the natural regions. The eastern and central Indian highlands (Tribal areas, the ancient Gondwana), and the extreme tip of the peninsula remained outside the pale of any strong central power. Similarly the Vindhyas managed to separate or localize the histories of Northern India and the Deccan peninsula. Another such semi-perennial border is provided by the Aravalli line extending from the mouth of the Gulf of Cambay to the Delhi gap. Thus, during very long periods, the lower Indus basin and Kathiawad have been *culs de sac* in absorbing the refugees of the Indo-Gangetic basins. Day's map shows the boundaries throughout the Indian history from Asoka to Aurangzeb. (See Fig. 7). To sum up, while centralized empires like those of the Mauryas, Satavahanas, Guptas, Harsha, Mughal and the British were short-lived, the ancient kingdoms like Kosala, Magadha, Avanti, Lata, Saurashtra, Kalinga, Andhra, Maharashtra, Karnatak, Chera, Chola, Pandya existed under one name or another, under one ruler or another.

From the point of view, the period from 700 to 1300 A.D. is very crucial in Indian history.

1. RAMASWAMY SASTRY (Ed.) *Kavyamimamsa of Rajasekhara*, G. O. I. Series. 1. 3rd Edition. lines 9-14, p. 92.

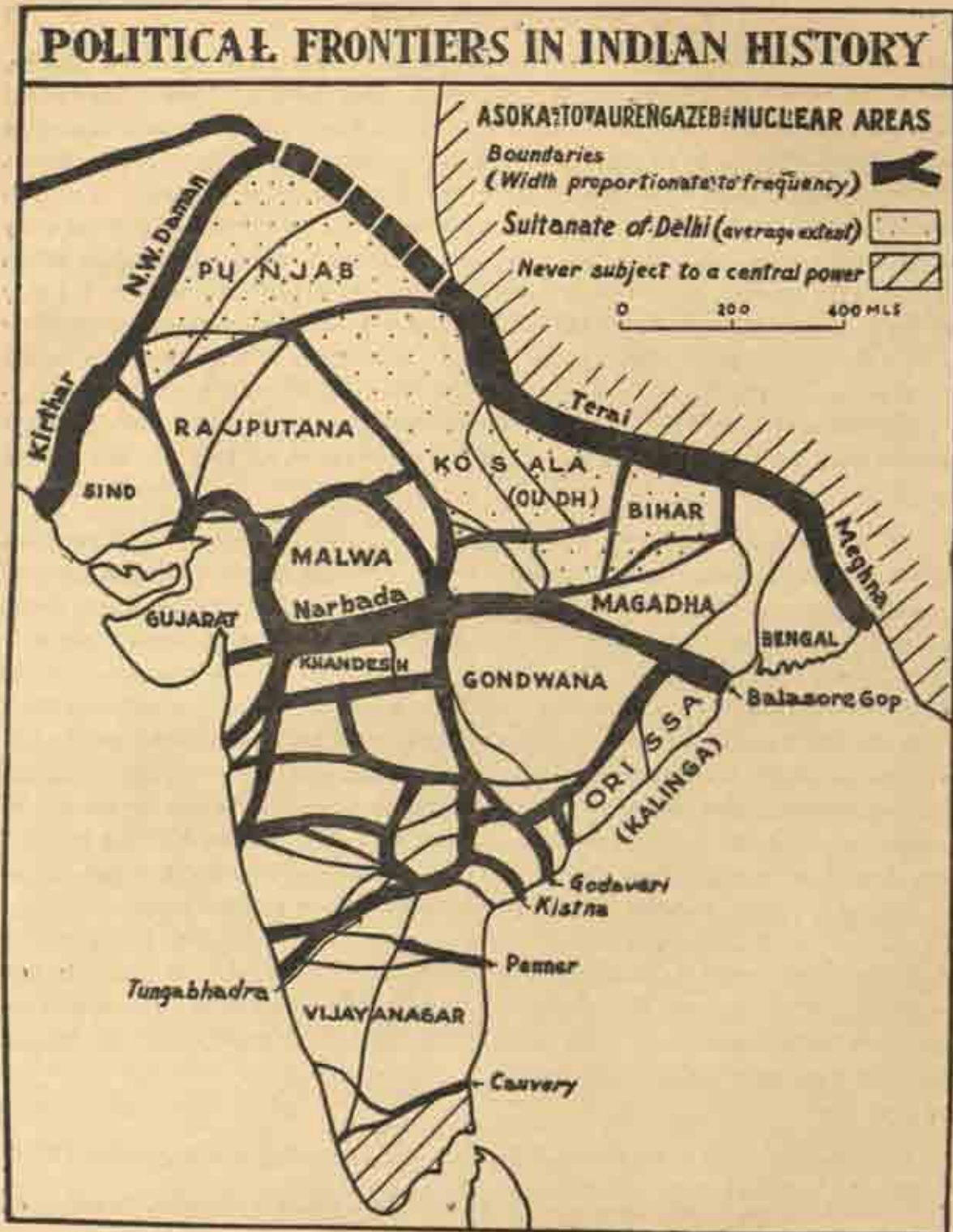


Fig. 7 : Note the coincidence between the nuclear areas and semi-perennial political boundaries. (After Spate)

Looked at from the point of view of the whole sub-continent it is common-place to treat this period as one of decay. About the period from 985 to 1300 A.D., Dr. Majumdar writes,¹ "The three centuries dealt with in this volume witnessed not only decay of political authority, but also a definite set back in the progress of their culture. Except in the domain of art, particularly the temple architecture, we find a steady decline and decadence, which has already set in the preceding period." K. M. Munshi lets the cat out of the bag and agreeing with Dr. Majumdar complains that there was no "Aryavarta Consciousness" in this period, taking a narrow Pan-Indian outlook.² But as bird's eye view of Indian history shows, the strong and latent centrifugal forces remained dormant at times, only to resume their existence like the famous plant whose proverbial behaviour is described as *Vetasi vritti*. This aquatic plant survives a flood by bending in its direction to resume its upright posture after the subsidence of the flood. Whenever a strong and imperial power emerged in one of the focal regions, it soon expanded at the expense of its neighbours. It is superfluous to state that no empire in the whole range of Indian history ever ruled this entire sub-continent—not to say a large part of it—for more than a few centuries or even decades.

Yet, this attitude does no justice to Indian history, since its vital limbs remained active during the periods when there was no central power. In a broad political sense, the absence of a central power, while encouraging the suppressed regionalism, led to greater external dangers exposing the land to invasions from across the frontiers. Yet, these so-called periods of decay represent very vital constructive epochs of regional language, art, architecture etc. For example the period from the 7th century after the Christian era has seen the rise and development of provincial languages and literatures, creative styles of temple architecture in the provinces—Gujarat, Orissa and Central India—(distinct provincial styles based on the fundamental elements and ideas spread from the Gangetic basin). The recent agitation for the establishment of unilingual States must have been a recurrent phenomenon throughout our Indian history. Our history as a struggle between the centripetal and centrifugal forces has not been adequately studied.

IX

Since language is one of the most important manifestations of the social cohesion of a community, it is not irrelevant to discuss the history of the development of Indian languages. Unfortunately, very little systematic studies in Indian linguistics have been made from the point of view of the social and cultural history of India. But what we know already, again points

1. MAJUMDAR AND PUSALKAR. *The struggle for Empire, History of the Indian people*, Vol. V. Bombay, 1958. p. XLVII-XLVIII.

2. *Ibid.* p. XIII.

towards the operation of the centripetal and centrifugal forces that characterize Indian history. On the one hand, we see a distinct diversity at the base. It is well-known that all the modern languages of India fundamentally belong to the main groups : the Indo-Aryan, the Dravidian, the Austro-Asiatic and the Sino-Burman. On the one hand, we see the operation of the centripetal forces, which bring about "a chemical fusion, not a physical mixture, where the different components can be easily separated", as Dr. S. M. Katre put it.¹ He continues, "During the last three thousand years, each of these distinct groups of languages has come into close contact with the remaining groups, and out of this contact has arisen a vocabulary which shows a Pan-Indian characteristic."

On the other hand we see the opposite process which again displays the centrifugal forces. Here our physical and cultural regions show their influence. Out of these very four groups of languages, have also arisen all the modern vernacular languages of India. As we shall show, it is the fragmentation and diversification, within the physical and cultural environments in the regions, that has created a strong barrier in the form of languages. Sometimes, the language, which reacts on the other modes of thinking, also accentuated the centrifugal forces. But one of the remarkable facts that support the geographic hypothesis is the designation at the various stages of our Indian languages and dialects, by the names of the regions where they were spoken.

Jayachandra Vidyalankar stresses the correlation when he says, "The areas of Indian dialects and languages, as they are found today correspond in a striking manner with the ancient or Medieval *Janapadas* or *Janapadasanghas* (federations of *Janapadas*). . . . This shows a survival of India's national units through the long periods of national paralysis and political degeneracy They have grown out of the whole history of India".² But it is very interesting to recall that at every stage, the local dialects, primary, secondary and tertiary prakrits were designated by the ancient geographic names of the regions where they were spoken.³ Another remarkable feature is the attempt made at different periods to bridge the gap between the literary and the spoken dialects. Just as the Buddhists adopted Pali as the literary dialect, we are justified in assuming a democratic approach to language by raising the status of the regional dialect by adopt-

1. KATRE, S. M. "Resemblance of World forms and Syntax" Talk broadcast from A.I.R. *Akashvani*. July 13th, 1958.

30. JAYACHANDRA VIDYALANKAR. *Cultural Heritage of India*. Ramakrishna Mission, Calcutta. (1st edition). pp. 123-52.

2. According to Bharata's *Natya sastra*, there were seven dialects : Magadhi, Avanti, Prachya, Sauraseni, Ardhamagadhi, Vahlika and what he calls Southern or Dakshinatya.

Similarly we get regional classifications in Dandin's *Kavyadarso* and *Sahitya Darpana*. In the later work, there is a detailed list of languages and dialects spoken in different parts of the country.

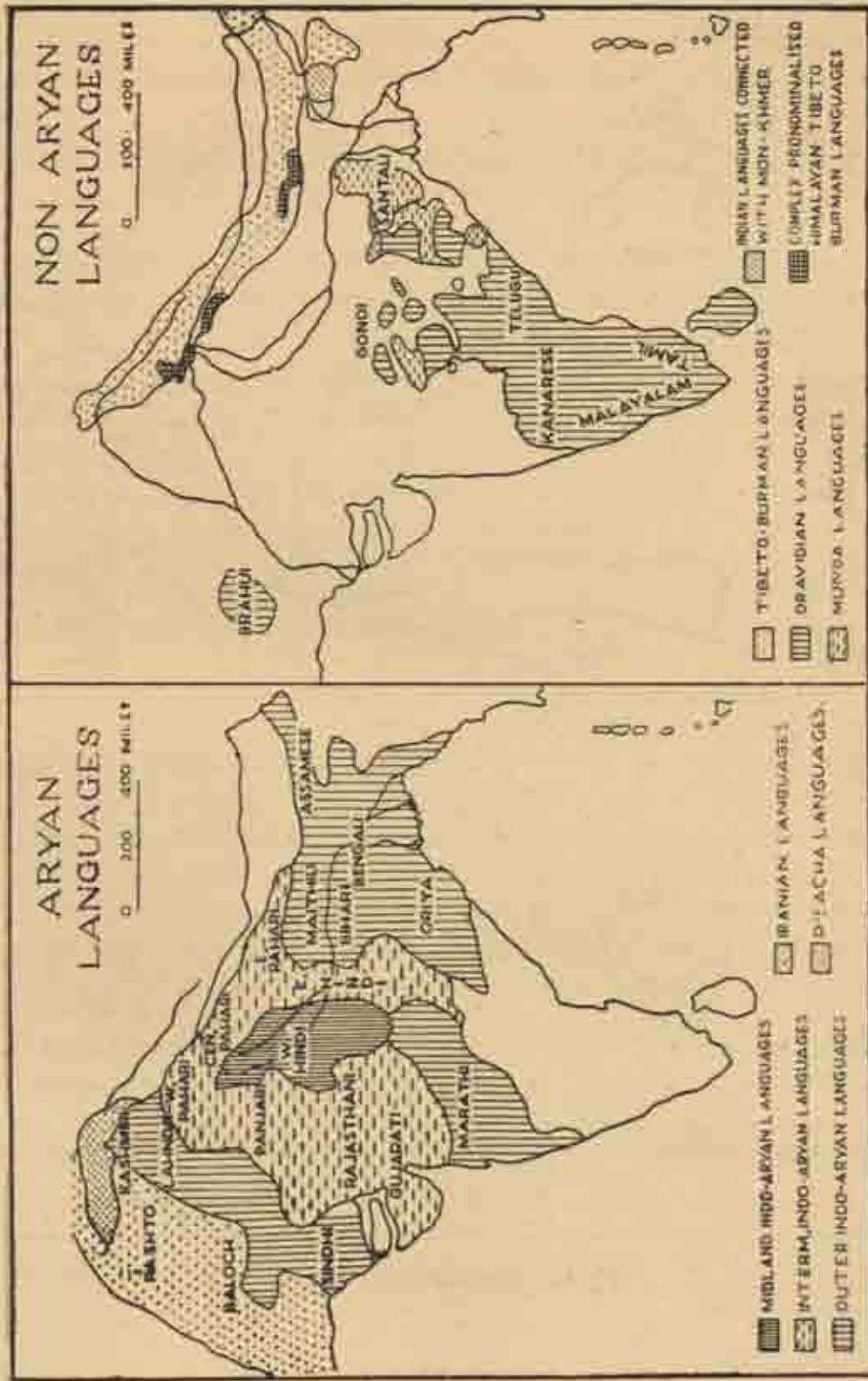


Fig. 9. (After MacDonnell)



Fig. 9a. (After Harrison)

ing them as administrative and literary media. When a language was raised to the status of a literary medium, and its structure systematised, it was called *Apabhramsa*.

From the point of view of language this period from 7th century A.D. is one of the most constructive. About the beginning of this so-called period of decay, the secondary prakrits—*Sauraseni*, *Ardha magadhi*, *Magadhi* and *Maharashtri*, become the literary *apabhramsas*. The modern vernaculars came through them as the tertiary prakrits.

Sauraseni Apabhramsa :	Punjabi—east of Sutlej.
	Western Hindi—Ganges—Jumna doab.
	Western Hindi around Ujjain gave rise to Rajasthani.
	Gujarati bi-furcated from it.
Ardhamagadhi :	Eastern Hindi.
Apabhramsa to the east of Indus :	Kashmiri in the north.
	Lhanda in the south—Punjabi.
Vrachda :	Lower course of the Indus—Sindhi.
Maharashtri :	Marathi.
Magadhi :	Bihari (north of the Ganges).
	Oriya.
	Bengali.

Similarly in South India, the Dravidian languages were flourishing. About this very period we see the bifurcation of *Kannada* and a little later *Telugu* from the Dravidian stem. The other aboriginal and tribal dialects described as *Nishada* and *Kirata* continued as spoken languages. It is not possible to describe their earlier position since they have never been recorded. Thus the whole group of modern Indian languages more or less emerged in the period from 700 to 1300 and it is no accident that this period politically marks a period of active centrifugal forces. (Figs. 9 & 9a).

X

Our present state of studies in Indian Ethnology do not warrant either any generalization at this time, nor do they justify any deductions as to the racial basis of Indian cultural diversity. On the other hand, Bernard Cohn has recently reported,¹ that, "in the classification of world's population, most recently developed, anthropologists see India's population as forming basically one race with varying sub-stocks, or at best two races".

1. COHN, BERNARD "India as a Racial, Linguistic and Cultural area." *Introducing India in Liberal Education*, University of Chicago. Proceedings of a conference held in May 1957.

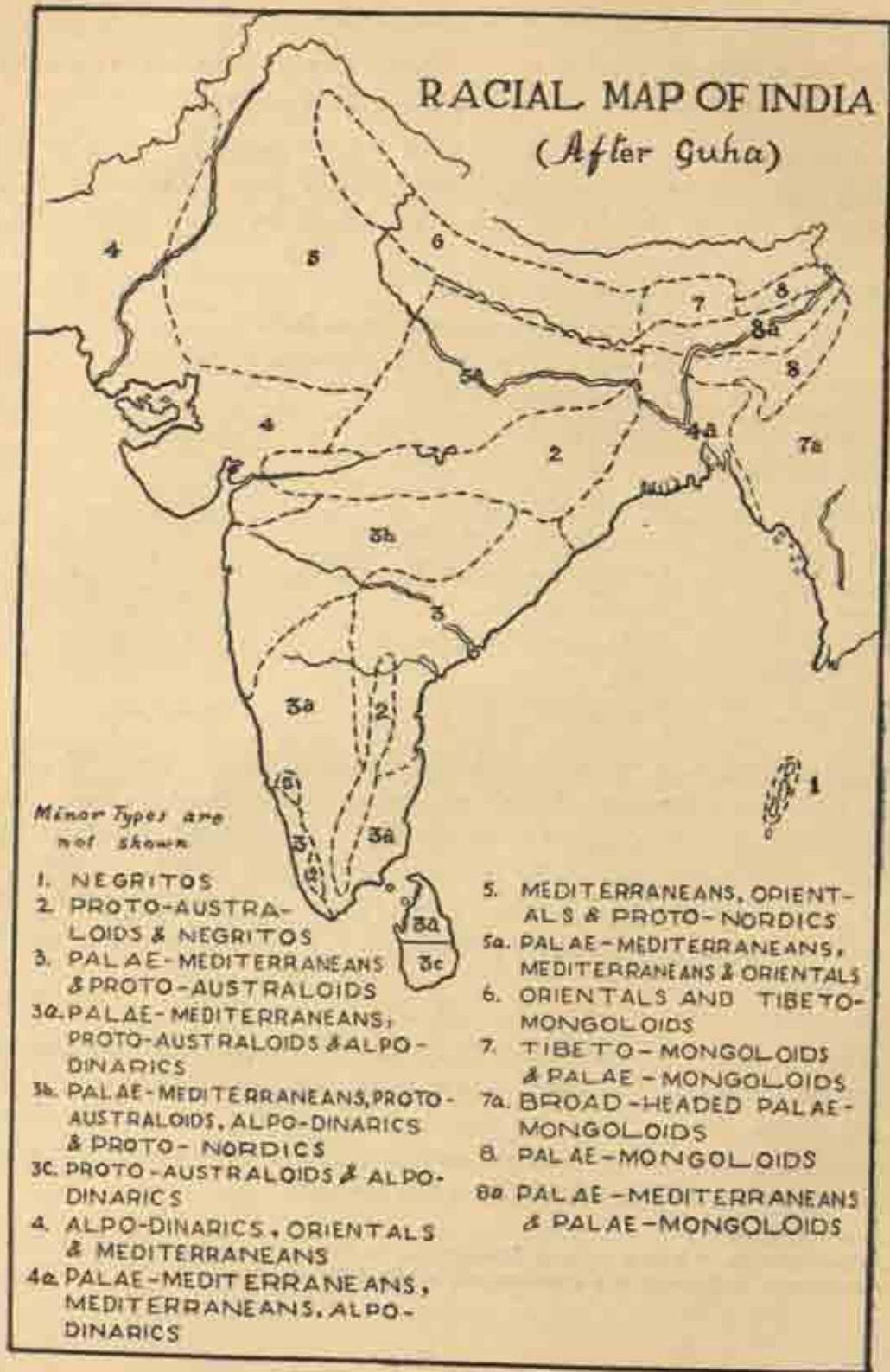


Fig. 10. (After Guha)

Upto now our first systematic classification of Indian races was made by Risley who confused race, language and culture and used linguistic and cultural criteria in delineating racial groups. But Guha who succeeded him in the Census Surveys has, on the basis of his investigations into Physical Anthropology, divided the races into Progressive and Aboriginal. Whether this method is justified in view of the pattern of cultural development in India is problematical. The archaeological pattern of cultural survivals in place and time, coinciding with environmental diversity, does not appear to the author to justify such a division (See chapter VIII). Yet, in the absence of a better classification, Guha's is useful as suggesting one more factor in the operation of the centrifugal forces in Indian history and culture. He defined the geographic areas and gave, on the basis of his anthropometric data, the distribution pattern of the main racial groups: Negrito, Proto-Australoid, Mongoloid, Palae-Mediterranean, Oriental, Alp-Dinaraic and Nordic (See Fig. 10).

Thus we see again the isolation and diversification of various ethnic groups within the physical regions. Yet this continuous contact and miscegenation of the various racial groups in the country has helped the process of the emergence of an essentially Indian type. To quote Cohn, "In summary and to push the data to its furthest conclusion, we might say that, even though historically and contemporaneously there is a tremendous diversity physically, in India, there is, roughly speaking, a physical type which is Indian".

Similarly in the field of social institutions, we see the same operation of vertical and horizontal unity as explained by M. N. Srinivas.¹ On the one hand we have the horizontal unity between the higher castes of the sub-continent, and at the same time, each of these castes has a distinct unity with the other castes of their respective regions, which he calls the 'vertical unity'. "The caste structure in India" writes Harrison, "divides into a series of regional caste structures, all threaded loosely together within the all embracing hierarchy of Hindu society. By and large, the linguistic boundary is the caste boundary; caste is essentially a regional affair. The cast affiliation limits interdining and intermarriage to a native linguistic regional group".²

Even in the sphere of religion, Srinivas makes a very fine distinction between what he calls *All-India Hinduism* and *Regional Hinduism* and it is again a demonstration of the strength of the centrifugal forces, which radically affected the various cultural forces which penetrated the whole country horizontally.

1. SRINIVAS M. N., *Religion and Society among the Coorgs of South India*. Oxford, 1952. pp. 213-14.

2. HARRISON SELIG S. "The challenge to Indian Nationalism" *Foreign Affairs*. July 1956. p. 626.

XI

Finally, how and why can these cultural zones defy political history? No easy solution exists and it calls for greater investigation. The most fundamental reason seems to be the peculiar relation between the *State* and the *Society* in Ancient India. They were independent of each other. In spite of the existence of institutions like *Chakravarti* and *Samrat*, the nature of political authority in ancient India may be compared to an inverted pyramid. State and society were independent of each other, and hence the political changes and tumblings of kings did not vitally affect the society. Otherwise, it is difficult to account for the survival of ancient corporate institutions (particularly at the village level) until the modern concept of State (people running it directly or indirectly) killed them. This relation can be expressed in terms of authority. In ancient India, the political authority was decentralized. The state impinged on the society, and as it may be put, at the apex of the inverted pyramid. At the village level, a harmonious blending of political hierarchy representing the State and the social hierarchy representing the basic unit of society, was achieved by the institution of hereditary officers. They combined the political authority of the State with the traditional authority flowing from their social status in the village. This traditional relation has now been broken up by the western type of democracy with the power vesting in the smallest constituent voters. Thus curiously, it releases new social forces competing for political and economic power and hence the entire concept of State-society relation has been altered by the introduction of the western Parliamentary Democracy. The recent strengthening of the centrifugal forces, by the political recognition of this regionalism, at the same time, calls for a proper balancing of both the centripetal and centrifugal forces.

An exact picture of the functioning of the Pre-British village communities and the recent changes has been made available in recent years.¹ We have already described the role of the hereditary official in the village. These were strengthened by the caste and kinship groups, and as Kathleen Gough has explained, "the stability of the traditional village organization may be seen as a balancing out of various unities and antagonisms."²

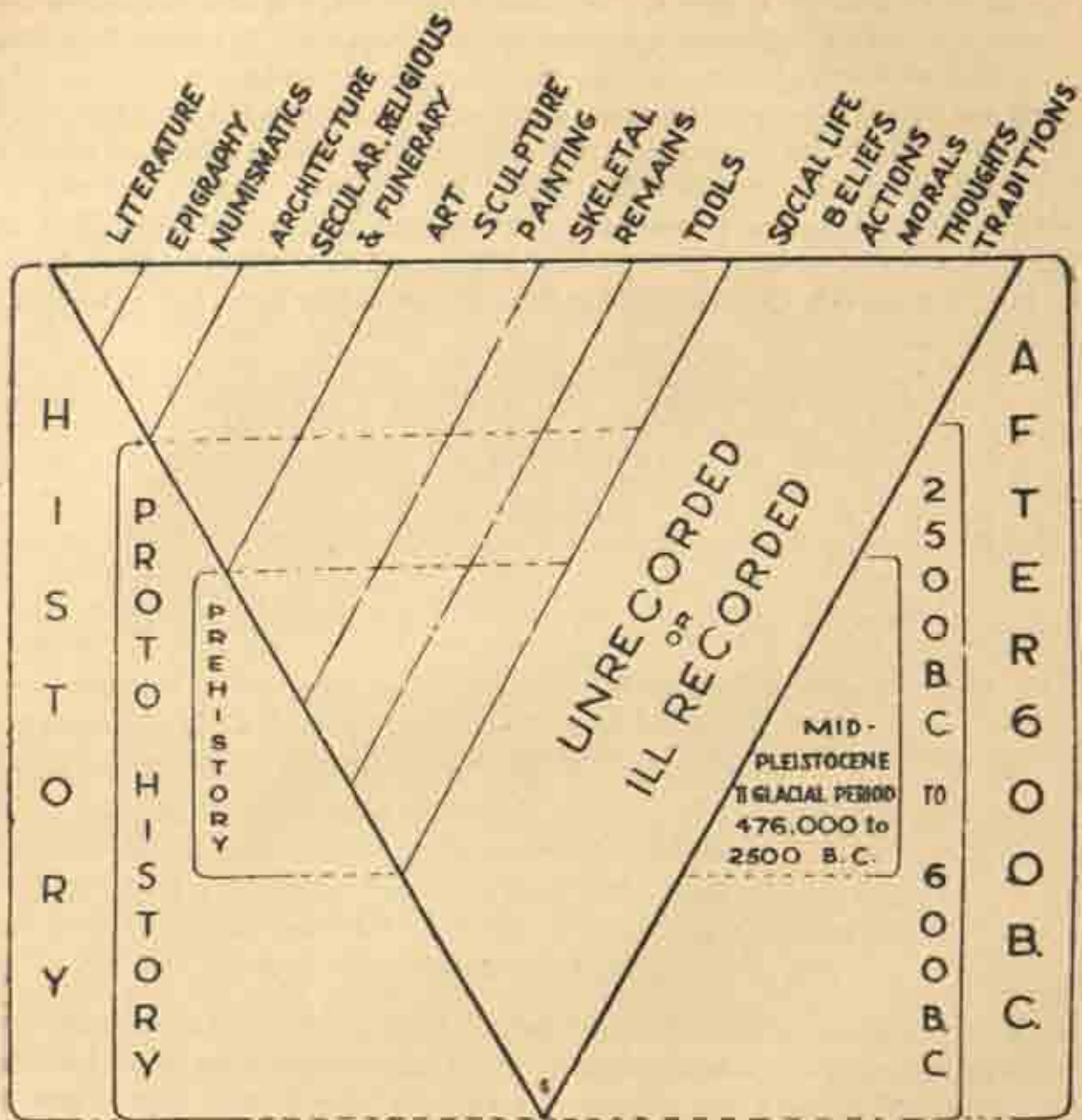
Lastly as Huntington put it, innate racial differences are much less important than innate individual differences or than those due to environment. "Heredity runs like a scarlet thread through history... mistaken racial views may have played as large a part as either language or nationality in moulding human destiny." F. W. Morgan has finely analysed the agencies that

1. DEY, S. K. (ED.) *India's Villages*, Calcutta, 1955.

2. SUBBARAO, B. "Regions and Regionalism in India" *Economic Weekly*, X, No. 38. September 20th 1958. The political and power factors in the new political set up have been discussed. The need for a system of proper checks and balances between the centripetal and centrifugal forces has been emphasized.

consolidate the diversities of regions. The politician and the practical administrator have been compelled to recognize region and regionalism through necessity, and thus geography is translated into action unconsciously. Secondly the writers and the intellectuals powerfully influenced and fostered the growth of regionalism by illuminating the unity of a region that gives it its vitality.¹ To end this discussion with a biological analogy, India is a large cell not with one nucleus but several. "These nuclear points," says Aiyappan, "are live and vital; so vital that they are capable of transforming themselves into supra-regional forces. These regional cultures are language cultures, not racial cultures, and their frontiers are natural barriers to begin with, but later language differences themselves provide the barrier limiting the lines of communication."²

1. MORGAN, F. W. "Three aspects of regional consciousness." *Sociological Review*. XXXI. 1939.
2. AIYAPPAN A., Review of the "Personality of India" in *Hindu* Sunday, May 19th, 1957.



SOURCES AND PERIODS OF INDIAN HISTORY

Fig. 11.

III

TERMINOLOGY

In the West, where modern archaeology developed, its scope was more or less limited to Prehistory and for the later periods more copious works of a historical character are available to confine the scope and function of archaeology. But, due to various reasons, archaeology in India has come to cover what may briefly be called the material culture of extinct historic and prehistoric peoples. Besides, right from Cunningham onwards, the archaeologists in India have concentrated more on the monuments of the Historical period. As Sir John Marshall explained, the itineraries of Fa-hien and Yuan-chwang, led Cunningham into investigating the old routes and towns visited by him, resulting in his classic studies of Ancient Indian geography, and the light shed on Buddhist art and architecture by him and his colleagues. The general scarcity of historical or even semi-historical literature of a reliable type for constructing the history of Ancient India also justifies the expanded scope of archaeology to include Prehistoric and Historic periods. Hence we can define archaeology as the study of the material relics of past people and the conceptual integration, in time and space, of their material relics.

With the invention of writing, Man had developed the unique power of transmitting his ideas and his intellectual achievements to his contemporaries as well as his successors. Hence, the story of mankind after the invention of writing has been designated "*History*" to differentiate it from that of Pre-literate societies called "*Prehistory*". As the diagram shows (Fig. 11), literature, contemporary inscriptions (Epigraphy), and coins (Numismatics) lend a greater precision to the story of the Historic periods. Yet, as already pointed out, the nature of our extant ancient literature introduces a greater complication, as they incorporate a large body of uncorroborated data and ill-recorded traditions making a historical and chronological treatment difficult. Hence we have the odd feature that our well-corroborated history begins about 600 B.C., in the North and slightly later in the South. Secondly, even the application of these two definitions lands us into difficulties, when we take up the question of the Indus Valley civilization. Those people had practised writing of a type preserved on their seals, but we have not yet succeeded in deciphering the script satisfactorily. Several attempts have been made by Father Heras, Prananth, Hunter, Hronzy, Ramachandran and other writers, but these heroic efforts can neither be proved nor disproved unless some bi-lingual seals are discovered. Hence for the present, we have to leave this civilization out of both the categories of History and Prehistory. But the existence of a vast body of legends of an unhistorical character forces us to recognize the

sub-division called "*Proto-history*" to cover the transitional period between Prehistory and History. For the present, we may include the Indus Valley civilization in this category.

After these very broad periods, the next important problem is that of an independent generic and specific terminology.¹ Upto now this problem has not received the attention it deserves. As far as Prehistory is concerned, the European terminology is being adopted and adapted. Remembering that things which may have the same name in Prehistory are not necessarily the same in time or content, we may try to avoid the pitfalls into which European and African developments have landed. In Europe, after the brilliant generalization of Thompsen, his Three Age scheme has been so much systematized and garnished with sub-divisions that it is impossible to see the wood for the trees.² But the more intensive studies both in Europe, as well as in Africa, have shown that Western Europe itself has a provincial character of its own, on account of its location on the periphery of the Old World. Childe has recently demonstrated how the geographical and environmental differences in Europe itself have lead to what he calls, "culture cycles" which consist of a series or groups of cultures which are linked, but yet have an individuality of their own.³ As Lowe put it, "the dangers of a universal or a wide application of cultural terms, founded on typological similarities, are too obvious to need stress. On the other hand, the universal application of terms used to describe techniques has few dangers." Hence the classic tradition, either of Europe or Africa, should not intrude into India. But we should gradually evolve our own terminology, as fresh investigations are carried out. *Hence our approach should be the isolation and correlation of persistent associations of archaeological types and not splitting preconceived groupings of human remains.* This system has the other advantage of avoiding the confusion and mis-understanding, due to the projection by implication, of the total cultural and chronological associations of two far-fetched areas, belonging to two entirely different physical environments. Besides, the large environmental diversity and overlaps of cultural phases make any system very difficult to apply in practice.

In India, Robert Bruce Foote readily adopted the Three Age concept and his brilliant generalization still holds the field.⁴ Yet, as we shall see, we have not been able to evolve a satisfactory correlation of Palaeolithic cultures, in different parts of the country. For the North-western India, we have a fine sequence based on the correlation of pleistocene glaciations, Siwalik fauna

1. I am very much obliged to Dr. and Mrs. Alchin and Dr. A. H. Dani for the very valuable discussions on some of the problems of terminology. A few of our ideas have been adopted here.

2. DANIEL, GYLNN, E., *Three Ages—An essay on archaeological methods.* Cambridge, 1943, p. 58.

3. CHILDE, GORDEN V., *The Prehistory of European Society,* Pelican book, London 1958.

4. FOOTE, R. B., *Indian Prehistoric and Proto-historic Antiquities, Notes on Ages and Distribution.* Madras, 1912.

and human cultures.¹ In the peninsular India, various sub-divisions between 'Wet' and 'Dry' periods have been attempted by Cammiade, Burkitt² Zeuner,³ and Sen.⁴ But it still lacks a stratigraphic basis and typology creeps into it at every stage. Not that it is wrong, but what we need is other independent criteria. The most important result of all this is the undoubted existence of a Pebble-Chopper-Complex in the Sohan and a widespread Peninsular Hand-axe and cleaver groups in the Middle and Upper Pleistocene. But in the two areas, where they have been systematically studied (Madras and Sohan), the tendency is for the appearance of a Levallois or prepared-platform technique in the later stages of both these industries. The second distinct group is the Geometric and Non-geometric Microlithic industries spread all over the country. In between two distinct assemblages, what one may call as "Early" and "Late" Stone Ages, we have an equally well-distributed blade, scraper and burin industry with distinct "Levallois" and Mousterian technique. All over the country, we see a switch-over to the fine-grained stones like agate, chert, jasper etc. The stratigraphic position of this industry between the Early and Late is indicated at Narsinghpur,⁵ Bombay⁶ and Maheshwar⁷ area. Hence for greater clarity, we may call this as "Middle Stone Age" industry.

This need not surprise us, since the Upper Palaeolithic is "a phase of regional specialization".⁸ All over the Old World, the Lower Palaeolithic industries have a much greater affinity in technique and evolution, but not in the Upper. The cultures of these later phases in Europe, Africa, Palestine and even Iran show divergences. Similarly in India, it is possible, if not probable, that the Levallois flake industry slowly develops into a microlithic facies as in Africa. *Just at present, Indian sequence does not fit into any mould, European or African. Let us discover our own pattern by intensive stratigraphic studies of more localities, and rely less on typology.*

This nomenclature has the merit of being very simple and in view of certain stratigraphic and chronological complications, which will be explained at a later stage, it can be modified and adapted as our knowledge progresses. Besides, its similarity with the African need not deter us. After all, let it be recognized, that the Indian Middle Stone Age, in particular, has much closer

1. DE TERRA, H. and PATERSON, T. R., *Studies on the Ice Age in India Associated human cultures*. Washington, 1939.
2. CAMMIADE, L. and BURKITT, M. C. "Fresh light on the Stone Ages of South India", *Antiquity*, 1930.
3. ZEUNER, F. E. *Stone Age and Pleistocene Chronology in Gujarat*, Poona, 1950.
4. SEN, DHARANI. *Presidential address of the Archaeology and Anthropology section*, Indian Science Congress, Hyderabad, 1954.
5. DE TERRA and PATERSON. *op. cit.* p. 320.
6. TOUD, K. R. U. "Palaeolithic Industries around Bombay" *Journal of the Royal Anthropological Institute*, 1939.
7. A detailed report of the latest studies of the terraces of the Nerbada and the tools is under preparation.
8. HUZAYIN, S. A. "New light on the Upper Palaeolithic of Egypt" *Proceedings of the first Pan-African-Congress of Pre-history*, 1947, p. 202.

affinities to the African, and similarly it is also a Levallois-derivative. Even in the Early and the Late, we have very significant divergences with those of Europe, inspite of the apparent affinities. For example, no industry exposed so far in India, can compare technologically with the Upper Acheulean of Europe in its perfection. Besides, in the 'Lower Group' of Narbada, with a so-called "Mid-pleistocene" (Upper Siwalik Fauna) we have an Acheulean industry. This anomaly was pointed out by De Terra himself.¹ Now with Pravara yielding 'Bos Namadicus Falconer',² with a typical Middle Stone Age assembly, one wonders whether there is no need for a fresh examination of the Palaeontology of the Tropicals and we are justified in extending the Siwalik dating to Central and Southern India. These are not easy problems to solve, and need a good deal of further study and research. *It is for this very reason, we have to devise a system that avoids probably misleading analogies in technique and chronology.*

The last phase of the Stone Age in India is characterized by the occurrence of polished stone axes. In the Central Deccan, we have more or less stratigraphic evidence to show that this succeeded the 'Late Stone Age'. We have also clear evidence to show that these people were widespread agricultural and pastoral communities with a preference for upland or hilly type of terrain. This may be called the Neolithic or the New Stone Age. F. R. Allchin has made a nice attempt to justify the use of this term.³

Then after these four phases of stone age, we naturally have transitional communities, who were acquainted with the metals, but not yet sufficiently to alter the economic character of their societies. The stone still dominates their raw materials for tools. These may be called 'Chalcolithic' for convenience. In India in particular, till the advent of Iron, it is very interesting to note that the distribution of the Chalcolithic cultures has a definite relation to the proximity to the regions where copper is available in large quantities. For example, since the 'Grey Ware' folk succeeded the 'Copper Hoard' cultures (Vide Hastinapur)⁴ Gangetic valley Proto-historic cultures were technically in a Copper-bronze Age. In Malwa and Deccan, we have a very highly developed stone Blade industry⁵ to supplement their scanty supply of copper tools. In view of the technological and cultural divergences in the Proto-historic period of Indian history and archaeology, we may use the safer term 'Proto-historic period' to cover the entire range

1. DE TERRA and PATERSON. *op. cit.* p. 320.

2. SANKALIA, H. D., "Animal-fossils and Palaeolithic industries from the Pravara Basin at Nevata" *Ancient India* No. 12, 1956, pp. 35-52.

3. A paper read at the All India Oriental Conference XVIII session held at Ammamalai, Dec. 1955.

4. LAL, B. B. "Excavations at Hastinapur". *Ancient India* No. 10-11, 1954-55.

5. SUBBARAO, B., "Chalcolithic Blade Industry of Maheshwar" *Bulletin of the Deccan College Research Institute*, XVII, 1955, Poona.

In the latest excavations (1957-58) five large copper celts were found in the excavation in the lowest levels of the Chalcolithic culture.

of cultures between the Pre-Harappan, Harappan and Post-Harappan and the succeeding Early Historic cultures of about 500 B.C. A rough sequence, within this whole range of Proto-historic, can be derived from the three 'cycles' of cultures described in Chapter VI.

In the Historic period, our problem is somewhat difficult. Usually the historians have got over this difficulty by designating a period by the most important and epoch-making king or dynasty. But, let it be admitted, that this is very unsatisfactory because of the diverse regional political histories. The extension of these terms for archaeology and their projection on the basis of typology, technique and style has greater dangers since it ignores chronology and local sequence. Yet, for convenience we may retain them to keep it in tune with the normal designation followed by the Indian historians. A more safer method seems to qualify these dynastic labels with the names of the area under consideration. Here further thought is necessary and the writer will be grateful, if a better system can be devised.

IV

CHRONOLOGY

History without dates is a grand-mother's tale. I very well remember this adage taught to me as a student. Though this over-emphasis on chronology is being relaxed in historical studies, the archaeologist needs a simple time scale, with which the different cultures can be inter-related in space and time.

The history of man begins from the dim past, when he first appeared on the face of this earth. The geologists and the palaeontologists tell us that this took place about a million years ago. For these vast stretches of unmeasurable periods, Clark has rightly compared our small solar year of 365½ days to a centimetre for measuring the Mount Everest. Hence the prehistorians take advantage of identifiable natural phenomena like the major changes in the climate of the earth to correlate certain phases of human development to those of the climate. But thanks to astronomy, it is possible to calculate the amount of heat radiated by the sun during the last million years. The graphical representation of this phenomenon showed again certain fluctuations of climate, and at such approximate intervals, as to coincide remarkably with the earlier calculations of the geologists about the duration of the various glacial and inter-glacial periods. Thus Prof. Zeuner¹ has correlated the astronomical and other geological time scales for Europe and the Mediterranean region, which are being studied in great detail for well over a century.

For India, no such systematic work has been carried out. A beginning was made by the Yale-Cambridge expedition in Upper Punjab and Kashmir. This demonstrated the evidence of glacial and inter-glacial deposits and have correlated them with the human cultures. Paterson and Zeuner have attempted a provisional correlation of European and Indian glaciations and projected the relevant dates to them, at least as far as North-west India is concerned.² These correlations will have to be corroborated by other means and we look forward to greater attention to this problem. On the basis of this provisional chronology, we can say that the earliest man in the Sohan valley lived some time at the end of the II Glacial period or about 435,000 years according to Zeuner.

For Tropical India, Zeuner has recognized climatic fluctuations between "Wet" and

1. ZEUNER, F. E. *Dating the Past*. London (III Ed.) 1953.

2. ZEUNER. *ibid.*

"Dry" periods in Gujarat.¹ Cammiade and Burkitt² on the South-east coast of India, and Sen and Bose³ in Orissa, have done some preliminary work. Yet these areas will have to be studied in detail.

The greatest single advance in archaeological techniques is the knowledge of the rate of disintegration of the radio-active element of Carbon (Carbon-14) present in small quantities in archaeological antiquities.⁴ It is very gratifying to learn that the National Physical Laboratory of India has joined the chain of laboratories trying to help the archaeologist in dating the antiquities. This method, which is still in an experimental stage, gives large standard-deviations and hence its applicability to recent periods is somewhat doubtful, till the techniques improve. Zeuner is also studying the effects of soil-forming processes and other contaminating agencies on the quantity of C-14.⁵ Yet, a few crucial dates from carefully sorted material would be a good starting point for our chronology. Fortunately, the recent work of Fairservis⁶ and Casal⁷ in Baluchistan and Afghanistan respectively, to which reference will be made later, has proved to be very useful for a general review of the position in the Indus basin.

The more basic techniques, based on stratigraphic excavation, enable one to build up a sequence of objects, as they were deposited at the sites. Such a chronology, unless related to a known system of absolute dates, is relative. For European archaeology, the development of a calendar at a very early age in the historic civilizations of Mesopotamia and Egypt has been a boon, to give a system of relative and absolute chronology.

In India, we have no such facilities and much more intensive explorations and excavations are needed before we can correlate archaeological and literary chronology. But the contacts of India with our neighbours in Western Asia provide some very valuable links to enable us to fix up a few terminal dates to start with. *Hence our chronology is in an absolutely fluid state and requires constant revision for some time.* It is well-known that the whole chronology of the Indus Valley civilization depends on the association of certain Indian objects in Sargonid and Post-Sargonid Mesopotamia with a central dating of about 2350 B. C. for Saragon of Akkad. This primary evidence is corroborated by certain datable Western Asian antiquities in India and *vice versa*, as

1. ZEUNER, F. E. *Stone Age and Pleistocene chronology in Gujarat*, Poona, 1950.

2. CAMMIADE AND BURKITT. *op. cit.*

3. SEN AND BOSE., *Excavations at Mayurbhanj*, Calcutta, 1948.

4. LIBBY., *Dating by Radio-Carbon*, Chicago, 1956.

5. ZEUNER, F. E. *Annual report of the Institute of Archaeology, London University—Eleventh Annual Report 1955*, pp. 43-51.

6. FAIRSERVIS, WALTER, A. *Excavations in the Quetta Valley, West Pakistan*. Anthropological papers of the American Museum of Natural History, New York, 1956, Vol. 45, Pl. 2.

7. CASAL, JEAN MARIE. "Mundigak"—*Illustrated London News*, 7th May, 1955, pp. 832-35.

well as a fairly satisfactory series of C-14 dates for the Pre-Harappan cultures on the Indo-Iranian border. Since the publication of Stuart Piggot's first synthesis,¹ the most important work covering the entire field of culture sequence in the Indus basin and the borders of Pakistan is that of Fairservis. Fairservis has made a very reasonable case for a reconsideration of the dates of Harappan culture itself.²

" Culture cycles "

It seems we have a sufficiently clear idea of the archaeological picture of the Indus basin with the extensive explorations and some of the recent excavations. Using an analogy of the analysis of European Prehistory by Late Prof. Gordon Childe we may refer in main to three " Culture cycles ",³ a group of cultures relates in time and space, yet showing quite significant divergences—or to put it in another way, a group of contemporary cultures with contacts. Thus we can divide the Proto-historic period into 3 broad groups :

1. Pre-Harappan.
2. Harappan.
3. Post-Harappan.

Pre-Harappan

We have already described the relation of India, to Western Asia, as that of " a periphery of the nuclear Near East ".⁴ The recent work of Fairservis in Baluchistan, throws a new light on this problem. Here, we have a sequence beginning with a Pre-pottery Neolithic Stage, and as pointed out by Childe,⁵ " this stage is represented at Kili Ghul Mohammed in Baluchistan. But the radio-carbon age of the last-named site is not more than 3500 B.C. " Who can now dispute the validity of the geographic contention ? We shall discuss the other C-14 dates in our section on Proto-history. In view of the plausible relations revealed between the cultures of the Indus basin and the Indo-Iranian border lands, we can group the whole group of Pre-Harappan cultures beginning with the Neolithic stage as the first cycle of cultures.

1. PIGGOT, STUART. *Prehistoric India*, Penguin Book, England, 1950.

2. FAIRSERVIS *ibid.*

3. CHILDE, GORDON V. *op. cit.* p. 22.

He explains : " Since the types thus produced are not everywhere identical and are associated with other different types in each province, prehistorians are today inclined to regard this ' culture ' or industry rather as a cycle of cultures . . . "

4. BRAIDWOOD, R. J. *Near East and the foundations of civilization*. Oregon, 1952.

5. CHILDE. *op. cit.* p. 37.

Harappan

We have already indicated the main premise on which the Harappan Chronology depends, *viz.* the Sargonid link. But the newly revised dates of Kili Ghul Mohammed and Damb Sadat will have to be taken into consideration.

Post-Harappan

In the last few years, a good deal of work has been done in Central and Southern India on the Chalcolithic cultures, which are Post-Harappan and which precede the Historic period commencing about 500 B. C. Enough light has been shed on their interrelation and these cultures are characterized by the common use of painted pottery and a highly specialized blade-technique. While some of them represent survivals of the Harappan, others show certain older traits mixed with new elements which penetrated into this sub-continent about the beginning of the first millennium.

The valuable link with Western Asia is lost when we come to the end of Indus Valley civilization. Nowhere, except at Harappa, has an overlap been noticed between the main Harappan civilization and the succeeding cultures of the Punjab.

Till 1944, the whole of the Deccan peninsula remained a vague cross-word puzzle. But Sir Mortimer Wheeler has left behind a fine working system of chronology based on the impact of Roman trade and the consequent deposition of Roman coins and coin hoards of known date, and other antiquities. Now the recent work in India has, more or less succeeded in disentangling a fairly satisfactory system of early historic and proto-historic chronology. It is not possible to go into the details of chronologies of individual regions, but it is proposed to discuss a few crucial types of pottery, which serve as definite diagnostic traits, and of Brahmagiri, on account of its importance to South Indian archaeology.

The most crucial pottery, on which the whole fabric of proto-history depends is the so-called Northern Black polished ware on account of its bright black surface, which seems to be the more common and characteristic type.

We are not in a position, yet to decide its origin and the exact technique of manufacture, except that it is made of very finely levigated clay and fired to a very high temperature under reducing conditions, probably in a sagger, as suggested by Rawson.¹ Dr. Wheeler recognized its importance for the North Indian sites where it occurs in comparative profusion, and attributed it to the

1. RAWSON, P. S. "Surface treatment of Indian pottery" *Mm.* 1953: Art. No. 58.

Pre-Alexandrian levels at Taxila.¹ While this pottery occurred from 6 to 13 feet, a hoard of coins with one of Alexander, in a mint condition, was found at six feet. But the more recent excavations at Kausambi, Rajagriha and Vaisali have shown that the focus of this pottery is the Gangetic basin, particularly the ancient Magadha, where it occurs in very large quantities and varieties and that Taxila marks a peripheral distribution. The chief type site is the ancient capital of Vatsa, Kausambi, on the left bank of the river Jamuna. Here, N. B. P. occurs at the lowest levels of the Historic period, and the construction of city's ramparts has been placed to the beginnings of the 6th century B. C.² There are quite a good thickness of deposits below the main monastery of Ghoshitarama, dated to the 3rd century, B. C. But the importance of this section can only be appreciated when the report of these excavation is published. Before we close this note, it is necessary to caution the use of this Gangetic Valley date to the peripheral areas of Central, Western and Southern India. Since the most probable agency of these movements was trade and political conquest, it may be dated a little later, even upto the 3rd century B. C.

The N. B. P. spread over various parts of the country from Taxila in the north-west to Gaur and Pandua in the east and Amaravati in the South. But outside the Gangetic valley, it occurs in very small quantities and usually at the Buddhist sites. Does it signify that they were the carriers? For example, at Bairat, an N. B. P. bowl, nicely mended with copper wires, occurred in the excavation. This pottery seems to have spread very rapidly in view of what we have seen at Taxila. At Maheshvar and Ujjain, the N. B. P. occurs at the intermediate levels of black-and-red ware and iron, suggesting again, an infiltration into this area about 5th century or slightly later. Hence this ware can safely be dated to the five centuries preceding the Christian Era, in view of its occurrence also with the coins of the Satavahanas at Nasik³ and Nevasa.⁴ The whole chronology of the Grey Ware depends on this pottery, as they stratigraphically belong to the Pre-N. B. P. Phase.

In central India, the black-and-red ware occurs in the Pre-N. B. P. Phase but it becomes profuse with the N. B. P. (Fig. 29).

Another very important fabric of pottery, which has a very wide distribution, is the Red polished Ware. Its focus is Gujarat and Kathiawad, where it occurs in nearly forty sites and in profusion. It is very distinctive by its fine clay body and its high resemblance to the Roman Samian

1. WHEELER AND KRISHNADEVA. *Ancient India*, No. 1. Jan. 1946. pp. 55-8.

2. GHOSH, A. *Presidential Address—Archaeology section*. XVII Session of the All India Oriental Conference. Ahmedabad. 1953.

3. SANKALIA, H. D. AND DED., S., B. *Excavations at Nasik and Jorwe*, Poona. 1956.

4. Government of India. *Indian Archaeology 1955-56*. New Delhi. 1956.

and other Red wares of western Asia. Curiously it has the circumstantial association of Graeco-Roman antiquities : Cameo, bronze handle with the figure of Eros, Sculpture of Poseidon, Roman coins and clay bullae at a number of sites.¹ Some of the forms are characteristically Indian and it may be inferred that it represents the adoption of the Roman technique, as a result of commercial contacts. Though the forms are Indian, their chronology, luxurious character, limited occurrence at all sites and the characteristic association of Roman antiquities is too much of a coincidence to ignore this compromise. The Gangetic valley red wares are much inferior in fabric as well as in the treatment of the surface.

This pottery with its focus in Western India has been very well-dated to the Kshatrapa Period (the first four centuries of the Christian era) by the excavations at Baroda, Timbarva (Karvan), Variav, Vadnagar, Amreli and Vasai by the association of large number of coins. Fortunately, we can trace its further expansion all over the country by the widespread occurrence in small quantities of a very characteristic diagnostic type—a narrow necked " sprinkler type "—right from Rupar in the Punjab to Bangarh in Bengal and Chandravalli in Northern Mysore. This occurs nowhere before the Christian era and in spite of a number of sites where they occur together, it is nowhere reported to overlap with the N. B. P.²

Now, we pass on to Brahmagiri, on which the whole south Indian chronology rests.³ The solid datum for the chronology of the site is the Rouletted ware, dated to about the 1st century A. D.

The associated local pottery is the so-called Russet coated criss-cross painted ware, described as the " Andhra " ware for convenience. The next earlier culture, namely the Megalithic, was found overlapping with the Andhra. Wheeler estimated the duration of the Megalithic culture to about 250 years and was greatly influenced by the dramatic context, provided by the break up of a " universal state " as being instrumental for a folk wandering from the south. Hence he ascribed it to the beginning of the 3rd century B. C. or a little earlier about 236 B. C. (death of Asoka). Dr. Wheeler himself has warned us against any " theoretical attempt to build up a time scale on the depth of the strata ". Now the more recent work described later, calls forth a slight revision of the chronology at Brahmagiri without disturbing the main datum. The most important factor is the occurrence in large areas of Northern and Central India of the

1. SUBBARAO. B., *Baroda through the Ages*. M. S. University Archaeology series. No. 1. Baroda 1953. Appendix. 1.

2. At Rupar and Prakash, Dr. Sharma and B. K. Thapar have dated their sequence on the basis of the N.B.P., which they have assigned a date between 500-100 B.C. Hence, here sprinklers have been included in the Post-N.B.P. phase beginning with 100 B.C. This does not vitally affect the date of this ware consequently.

3. WHEELER. Brahmagiri and Chandravalli—1947. *Ancient India* No. 4. New Delhi. 1947-48.

typical megalithic black-and-red ware in unimpeachable earlier deposits dating almost to the beginning of the first millennium B. C. Its gradual spread southwards will be indicated later. The most important fact is the close affinities of the chalcolithic burials at Bahal and the incompletely investigated pits near the cists V and VI at Brahmagiri which, on Wheeler's own admission, are appreciably earlier than the designated megalithic culture.

The second factor is the 'Andhra' pottery itself. At Brahmagiri, Maski and Sangana-kallu, a fine distinction could be made in the technique. The so-called Russet coated pottery technically, retains the forms of the black-and-red ware. B. K. Thapar has pointed out that there seems to be a difference in the firing, since the exterior rim portion is well-burnt.¹ We see the survival of a few 'Megalithic types'. As Wheeler put it, "The two commonest types on which this characteristic decoration is found are dishes with an internally beaked rim, and particularly partially straight sided bowls. The former occasionally bear concentric rings of rouletted pattern on the upper side of the base. The straight-sided bowls seem to be an inheritance from the simple ceramic of the Megalith culture".² Besides, the amount of the bright red-slipped ware increases. There is a nice negative evidence for this very significant ceramic change. Salihundam, on the east coast of India, yields larger quantities of bright red-slipped wares, and the Red Polished Ware and there is a significant absence of the black-and-red ware. The site can be dated otherwise to the 3rd Century A. D. Similarly Nagarjuna-Konda, the Ikshvaku capital of the III century A.D., on the banks of the river Krishna, also yielded very little quantity of black-and-red ware. Thus the chronology of the Russet coated Andhra ware, which is absent at Salihundam and Nagarjuna Konda, can now be dated to about 100 B.C. to 200 A.D. Besides, this pottery has nothing to do with the political dynasty of Andhras, since it does not occur in a very large portion of the old Andhra Empire in Central and Western India, at a number of well-investigated sites. It curiously confines itself to the lower valleys of the Krishna and Godavari. Besides, it has very close affinities in technique to the well-known Coimbatore and other Megalithic painted pottery. It seems to be a local but widespread south Indian pottery.³

A more urgent need for a revision seems to be the correlation of the North Indian and South Indian archaeological chronology. Now, the Vindhyan barrier has been successfully broken

1. At the Symposium held at Delhi, Government of India, under the auspices of the Department of Archaeology in September 1957. Also see Thapar B. K. "Maski—1954—A chalcolithic site of the Southern Deccan" *Ancient India* No. 13, Jan. 1957, p. 73.

2. WHEELER, R.E.M. "Brahmagiri and Chandravalli—1947" *Ancient India*, No. 4. New Delhi. 1947-48, p. 237.

3. DR. M. SESHATRI of the Mysore University has unearthed a cist yielding this type of pottery with wavy-line decorations.

by the recent work at Maheshwar. With our knowledge of the age and distribution of the N. B. P. belonging to the early centuries preceding the Christian era, we can clearly see its movements in space and time towards west, east and south from its focus in the Gangetic valley. Similarly, in the early centuries of the Christian era, we have another pottery, the Red Polished ware and its movements towards east, north and south can be followed in space and time, from its focus in western India. With the help of this pottery again, we can link up with Brahmagiri and Chandravalli in the Andhra Period. Hence, a slight downward revision of the Brahmagiri chronology seems to be essential to reconcile the evidence from the north and south. This would enable us to place the Megaliths in the Pre-Mauryan period, without upsetting the Roman datum. Even for the "Andhra pottery", the 1st century A.D. should be a central date instead of a terminal date. These changes would enable us to place the infiltration of metals into the Central Deccan to a period about the beginning of the 1st Millennium B.C. The more obvious and urgent desideratum is to conduct one or two large scale excavations in the Central Deccan to verify and corroborate the sequence of Sanganakallu, Brahmagiri, Maski and Piklihal.

Before closing this discussion on chronology, let us remind ourselves of the magnitude of the sub-continent and the horizontal spread of the various strata of cultures in time and space. Some of these time-space coordinates are becoming clearer and we should bear in mind the time for their spread. Hence the need is for a more flexible and dynamic approach while interpreting the material relics in different parts of the country, sometimes as we shall see, of two cultures in different zones, but yet belonging to the same complex with common diagnostic traits. Hence it is difficult to draw horizontal lines across the lines of vertical development in different parts of the country, since the horizontal expansion was influenced and even retarded by the geographic barriers within the country.

PREHISTORY

Prehistory is unfortunately the least developed branch of Indian archaeology, in spite of its early beginnings, from 1863, when Foote discovered the first palaeoliths in the lateritic pits at Pallavaram. Except in two or three areas, our knowledge predominately rests on typology, and unless we establish a stratigraphic sequence for these industries we will not carry forward the bounds of our knowledge. In the West, very rapid progress was made with the cooperation of all the Natural sciences and it is hoped that this cooperation will not be sought in vain in this country too. The development of prehistoric studies in any country depends on the progress of general pleistocene studies by the geologists and the palaeontologists. It is very gratifying to see that a good beginning in coordinated research has been made since 1957.¹ Besides the recent discoveries in the Pravara basin and studies in the Narbada basin, rapidly call for fresh studies in Pleistocene palaeontology. In view of the environmental diversity and the magnitude of the country, we will not be justified in blindly extending the Siwalik chronology to Central and Southern India. For example, the extensive studies carried out in the Himalayas and the Siwaliks prepared the back-ground for the success of the Yale-Cambridge expedition. It is not our purpose here to summarize the work done in different parts of the country. But it is proposed to review critically the main sequence of industries and relate them to the "Early, Middle and Late Stone Ages" in India adopting the terminology suggested in this book.

A. Early Stone Age

As already pointed out, the two areas which have been systematically studied are the Potwar region of Pakistan and the region around Madras. They have an additional advantage since they show certain significant variations in physical conditions and typology suggesting a sequence. As these two areas belong to two different technical traditions in their tools, it is advisable to accept the terminology suggested by De Terra and Oswald Menghin and call them the "Sohan" and "Madras" or "Peninsular" facies of the Early Stone Age in India.

1. "A team consisting of Drs. H. D. Sankalia and B. Subbarao, respectively of the Deccan College-Post Graduate and Research Institute, Poona, and the Maharaja Sayajirao University of Baroda, Shri S. C. Awasthi of the Geological survey of India and Dr. K. N. Puri, Shri B. B. Lal, Shri K. V. Sundararajan and Dr. R. V. Joshi of the Department explored the valley of Banganga, a tributary of the Beas." *Indian Archaeology 1957-58—A review*. New Delhi. 1958. p. 43.

Potwar region—The Sohan Industry

It is well known that during the Pleistocene period, the era of man, there were series of fluctuations resulting in the alternation of cold and dry conditions. In the higher altitudes of the world, these changes manifested themselves in the occurrence of rivers of ice or glaciers during the cold periods, and the intervening dry periods were called Inter-glacial periods in contrast to the Glacial. In India, the Himalayas supported large Glaciers during that period. The Yale-Cambridge expedition continued the earlier work on the Himalayan glaciers by Indian and foreign geologists and they succeeded in correlating the human cultures with those of the Ice Age.

The glaciers, flow with a tremendous weight or mass and can grind and carry large masses of rock and other debris on their sides and at the tip of the tongue. This debris constitutes moraines, which survive the glacier and provide evidence of former glaciations. Outside these glacial areas and particularly in the foot-hills called the 'Peri-glacial zones', the rivers which drain the uplands are also affected by these changes. During the glacial periods, a large amount of debris was brought down, but there was not sufficient water in the rivers to carry them. Hence all this additional load was deposited by the rivers in their upper courses. During the Inter-glacial periods, however, the additional water released by the melting of the ice increased the velocity of the rivers, which cut through their previous deposits leaving a portion of their former beds on the flanks, which survive as terraces. This process of building and cutting, technically called 'aggradation' and 'erosion' respectively, can be noticed by a study of the river valleys. Since the man and his contemporary animals met at this life-giving rendezvous *viz.* the river, the rivers tell the story of the man who lived on its banks. Since the rivers are very sensitive to the climatic changes, which directly influence the volume of water in the bed, the rivers throw light on their environment too.

With this introduction we pass on to the study of the river Sohan, a tributary of the river Indus in the Potwar region (Fig. 12). It has preserved five terraces showing its history and fortunately human tools have been found in association with them. The first terrace (400 feet) and the third (120 feet) can be directly linked with the moraines of the II and III Glacial periods, making its chronology and stratigraphy certain. The human tools have been found in all the four top terraces. De Terra and Paterson have divided the stone tools into three main groups. The earliest called 'Pre-Sohan or Soan' is found in the huge boulder beds or Conglomerate belonging to the II Glaciation. After a critical evaluation of the African pebble industries including the Kafuan, K. P. Oakley has recently questioned the propriety of accepting some of these as tools. He has suggested the possibility of accidental removal of large Clacton-like flakes by

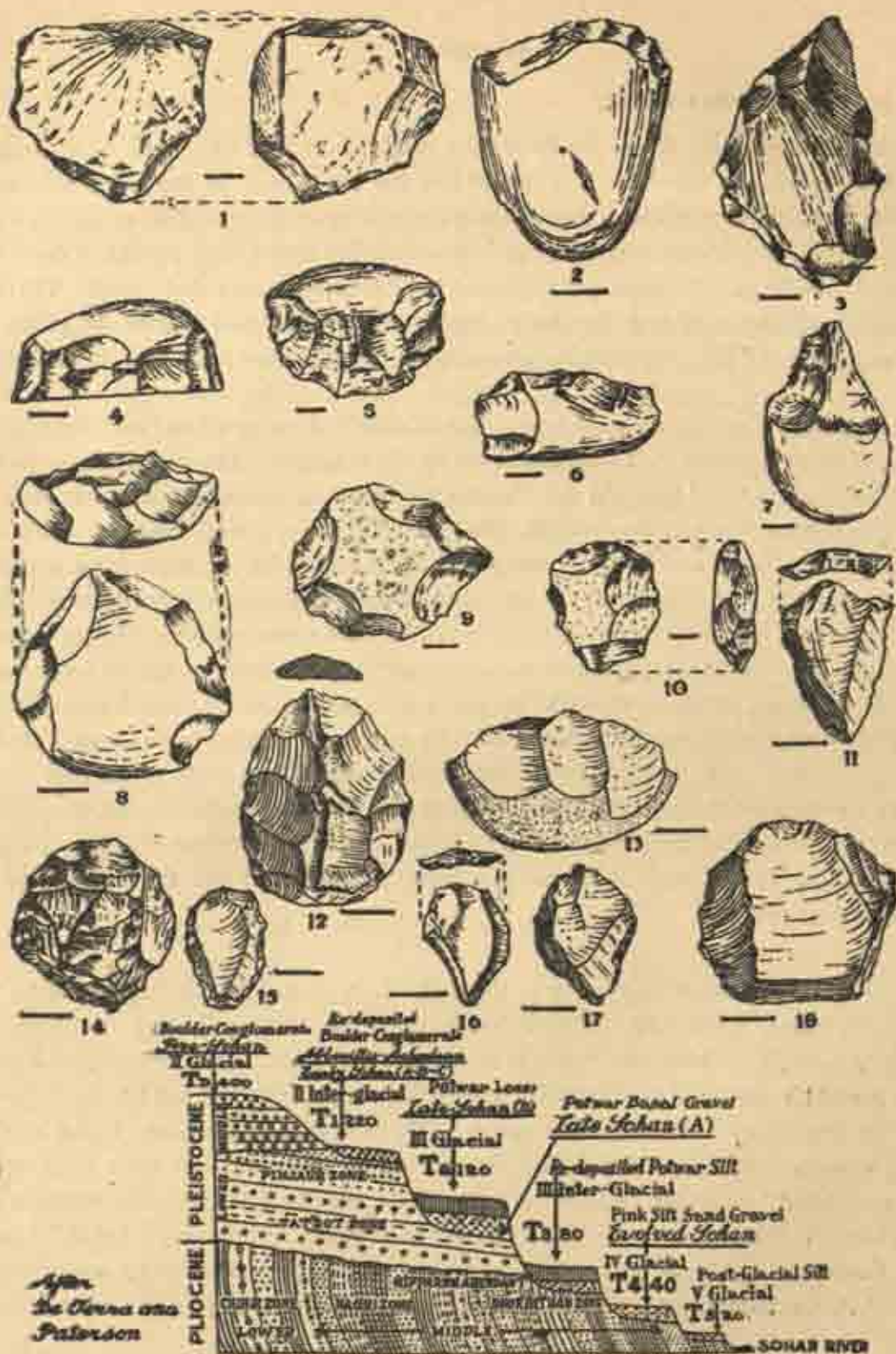


Fig. 12. Type section of the river Soan with the associated human industries. 1. Pre-Soan flake; 2-9 Early Soan; 10-18 Late Soan.

nature.¹ Even about the Sohan, it is necessary for one to be very wary about the nature of these tools.² According to the authors of the report, the tools consist of large flakes struck off the cores without any elaborate preparations and can be compared to the 'Clactonian industry'. Very little attempt is made to retouch or sharpen the edges by further flaking.

The next group, called the *Early Sohan*, belonging to the II Inter-glacial period, consists of a series of choppers and other scraping tools made on flat truncated pebbles. On the basis of the physical condition of the tools they have been sub-divided into three groups 'a', 'b' and 'c'. But the most interesting evidence is the intrusion of the typical hand axes and the increase in the number of flakes and the appearance of the technique of elaborate preparation on the core before the tool is struck off from it, (called the 'Levallois' after the type site near Paris). These again have been sub-divided into 'a' and 'b'. To summarize the picture, we can quote the authors, "the presence of large number of pebble tools and cores made on small pebbles is one of the most outstanding features of the Punjab in the Soan pebble tools there can be traced a development towards smaller and more finely made types. The Soan flake industries, too, provide an excellent example of the evolution of a flake culture in a small area. In the early stages the flakes are crude. . . . In the late Soan, alongside the simple forms, there are other flakes, showing a development in technique, with much more regular primary flaking and often with faceted platforms, denoting careful preparation of the core in a manner reminiscent of the Levalloisian".³

B. B. Lal has made a detailed study of the terrace structure of the river Beas and its tributary, Banganga.⁴ The latter also has five terraces with the tools found in the first four terraces. The studies of Olaf Prufer⁵ and Y. D. Sharma⁶ also conform the general typological and technological features of this Peri-glacial industry.

The Peninsular Hand Axe Industry

By contrast, the Early Stone Age industries of the Peninsular India (geological sense) show a different technological tradition. Instead of the pebble chopping tools, these are characterized

1. OAKLEY, K. P. "Tools Makyth Mau" *Antiquity* No. 124, December 1957, p. 203.

2. During a recent visit to the Banganga by the writer in the company of a party organized by the Department of Archaeology, he experienced this difficulty. A simple flaking leading to a uni-facial chopper can sometimes be made accidentally. A rigid criterion is necessary for these studies.

3. DE TERRA and PATERSON. *op. cit.*, p. 311-12.

4. LAL, B. B., "Palaeoliths from the Banganga and Beas valleys, Punjab." *Ancient India*, No. 12, New Delhi, 1956 pp. 58-92.

5. MOVIER, HALLAM, L. "Palaeolithic archaeology in Southern Asia, exclusive of India", *Journal of World History*, Unesco, Paris, Vol. II, No. 2, p. 263.

6. *Indian Archaeology*, 1954-55.

by the presence of large quantities of hand axes and cleavers made on cores and flakes. The ideal region, where a typological evolution of this series can be studied is the Madras area, investigated by Paterson and Krishnaswamy.

The problems of tropical India are of a different character from the Glacial and Peri-glacial zones. It is generally believed, that, in the tropical areas, there were fluctuations of wet and dry conditions, depending respectively on more or less precipitation. There is no unanimity of opinion between the various scientists about the relation of these wet or Pluvials and dry or Inter-pluvials with the Glacial and Inter-glacial periods. But one school of thought believes pluvials to be the secondary effects of, or simultaneous to, glacial periods. But in India, whatever be the relation between the Glacial and Pluvial periods, there is a substantial body of evidence of periods with more and less precipitation all over the country. Cammiade, Burkitt and Richards¹ were the pioneers in these studies and they demonstrated a succession of wet and dry periods on the east coast of India in the Godavary and Krishna basins. Here the evidence was based on the formation and redeposition of laterite, a soft rock with a concentration of iron and allumina.

The conditions necessary for the formation of this rock are : tropical heat, rain and thick vegetation, alternating wet and dry seasons (each of several months duration), imperfectly drained elevated level or gently sloping surface, and a subsoil that will retain moisture for long periods. Since these conditions do not exist on the east coast today, a hypothesis of three former wet or pluvial periods separated by dry periods was put forward on the basis of their investigation of a number of sites. As we will see a little later, these periods were correlated with human industries.

The next important study was that of Prof. F. E. Zeuner who carried out investigations in the river valleys of Sabarmati, Mahi, Orsang and Narbada in Gujarat² and Godavary in Maharashtra and Burhobalang in Orissa and Rihand and Balia nadi in the Singrauli basin. His latest opinion may be stated as follows :

In the 1300 kilometre long and 400 kilometre broad strip of India between the 20° and 24° parallels, a relatively dry climate was dominant in the younger pleistocene which is represented in the gravel deposits of these rivers. Two of these cycles can be distinguished and they are separated by a phase of formation of dry wood-soils (humus), which would not have needed a damper climate than the one that exists in those regions. The first dry cycle begins with a coarser gravel than the second, which perhaps points to a greater fluvial action of the rivers. In the western

1. RICHARDS, F. J. ; CAMMIADE, L. A. ; and BURKITT, M. C. with notes by S. W. WOOLDRIDGE and P. LAER.
"Climatic Changes in South-east Asia during the Early Palaeolithic times", *Geological Magazine*, LXIX, 1932. pp. 193-205.

2. ZEUNER, F. E., *Stone Age and Pleistocene Chronology in Gujarat*. Poona, 1950.

parts of this belt (Gujarat), there are traces of wind activity and it becomes less as we go to the east and south-east. To the north-west of Gujarat, there is the great Indian desert which encloses parts of Rajaputana and southern Punjab. Climatologically this is the dry area of the eastern end of the Sahara strip and the geological observations show now, that in the later Pleistocene, this dry area at least must have stretched twice as far to the south and east.¹

Similarly Dharani Sen has tried to build up a climatic sequence in Orissa.² Thus though detailed investigations including studies in tropical soils is a great and urgent desideratum, there seems to be no doubt about the existence of these climatic cycles.

Now to go back to the human cultures of this period, we should begin with the type area viz., Madras. The site of Vadamadurai, in the suburbs of Madras, yields the earliest relics of man in a boulder conglomerate. Krishnaswamy and Paterson have correlated it with the boulder conglomerate of the II Glacial period and the Mid Pleistocene fossil beds of Narbada.³ This problem of Pleistocene correlation will have to await very detailed study of palaeontology and stratigraphy in India. *As already pointed out Peri-glacial siwalik chronology cannot be applied blindly and let it be recorded that this correlation, for the present is based in typology.* Even in the Narbada, the difficulties of correlation were felt by De Terra and this will be discussed further. If their assumption is correct, it would bring out the striking difference between the Sohan and the Peninsular cultures. While the former has the large Pre-Sohan flakes, the latter has an early series of hand axes comparable to the Abbevillian or Chellean of Europe and Africa. These are made on pebbles and they show large flake scars with zig-zag edges. On the basis of the physical condition of the tools, the Vadamadurai group can be sub-divided into three types: (a) Early, crude hand axes with a deep whitish crust and the tools generally retain a large portion of the pebble surface; (b) Lateritised⁴ specimens of a more advanced type and finer flaking, and (c) Non-lateritised with more advanced and neater forms of hand axes and ovates. Cleaver was found only in the last group, and that too a single specimen.

This evidence was carried further by the terraces of the river Attirampakkam, also in the suburbs of Madras. Here in the gravels of the II terrace were found tools of the C-group from Vadamadurai with a few derived specimens belonging to 'a' and 'b' groups. The material

1. ZEUNER, F. E., "Das Problem der Pluvialzeiten" *Geologischen Rundschau*. Bd. 41, 1953, Stuttgart.

This account is based on a rough translation of this paper in German.

2. SEN, DHARANI, "Lower Palaeolithic Culture-complex and Chronology in India", *Proceedings of the Indian Science Congress*, Hyderabad, 1954, Vol. I.

3. KRISHNASWAMY, V. D. K., "Pre-history in India", *Ancient India*, No. 3.

4. DE TERRA & PATERSON, *op. cit.*

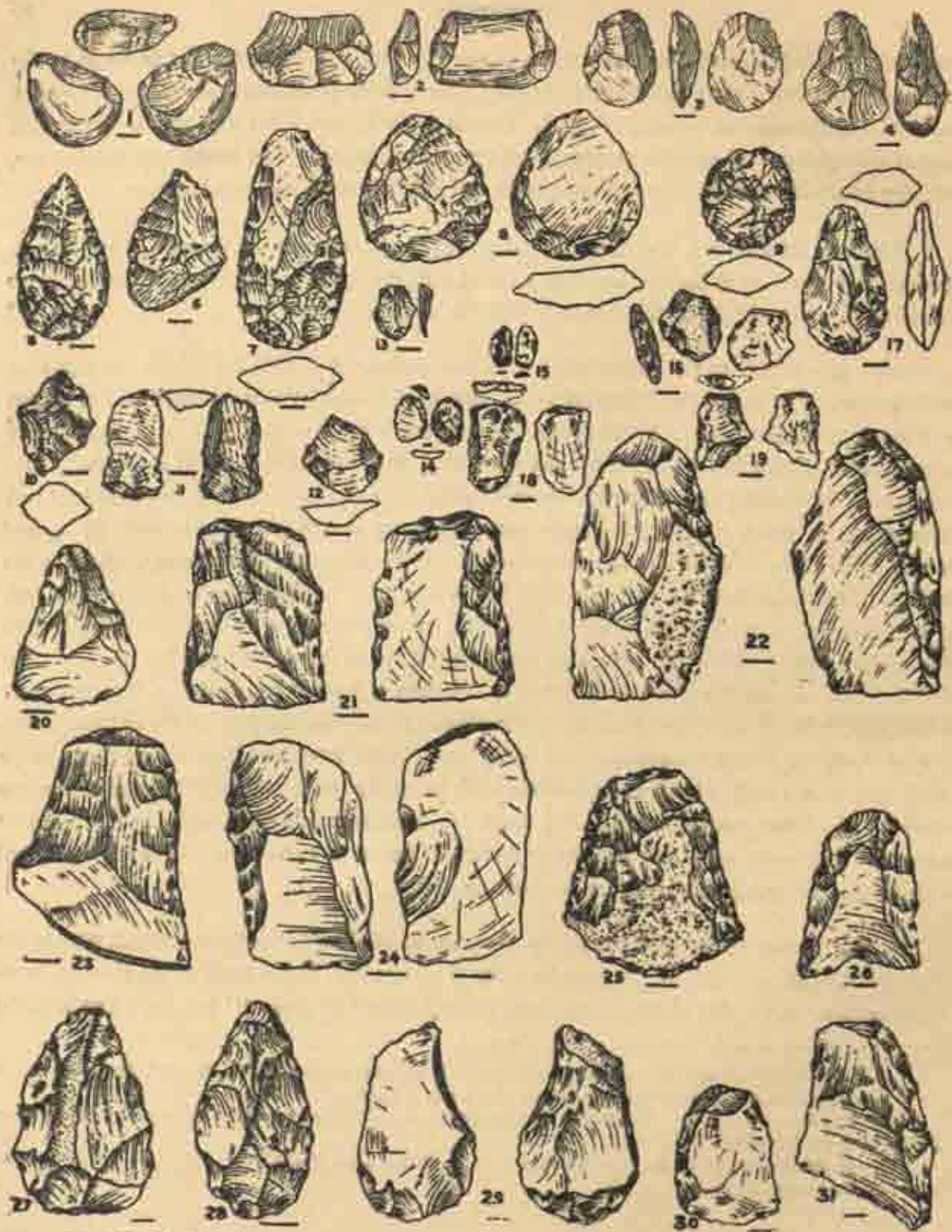


Fig. 13. Typical tools of the 'Madras' or the Peninsular hand-axe cultures from the Mahi Valley, the Madras area, the Singrauli basin and the Malaprabha valley.

from Attirampakkam shows a great general evolution of the hand-axe culture into very neat forms corresponding to the Middle and Upper Acheul of Europe, with a large number of cleavers. Finally from the loam we have an evolved flake industry showing evidence of prepared-platforms and much primary flaking on the surface suggesting a 'Levallois' technique.¹ (Fig. 13).

Similar evidence of an Early Stone Age industry was found in the Krishna and Godavary basins and these have been related to the climatic phases based on the formation of laterite and its redeposition. Typologically the series I and II correspond to those of Vadamadurai and Attirampakkam respectively.²

In the middle reaches of Narbada, in the Hoshangabad—Narsinghpur area, rich fossiliferous localities were re-examined by De Terra for correlation with Stone industries.³ In the light of the remarks of Prof. Zeuner quoted above, we see again two dry periods or periods of aggradation with a break and a third minor phase. De Terra located three groups called by him: the *Lower*, *Upper*, and the *Black soil*, consisting of basal gravels or sands capped by clay and silt. The lower group yielded typical peninsular Abbevillo-Acheulean hand axes with a few Early Soan tools. The Upper group yielded developed hand axe industry with a Late Soan flake industry. The third group will be discussed later.

In the winters of 1952-53 and 1957-58, the writer in the company of Dr. H. D. Sankalia carried out further studies of the Narbada in the Maheshvar region about 200 miles downstream from Hoshangabad.⁴ The three lower terraces confined to the present bed of the river, were studied. Actually the Narbada has preserved two more terraces, visible in the foot-hills and the ancient streams with a transverse drainage. One such stream terrace was noticed to be implementiferous, but there was no time to do the measurements of the terrace levels and construct a transverse profile of the Narbada basin. But the existence of five terraces is certain. The details of the three younger terraces are given below. The main sequence may be stated as follows (Fig. 14):

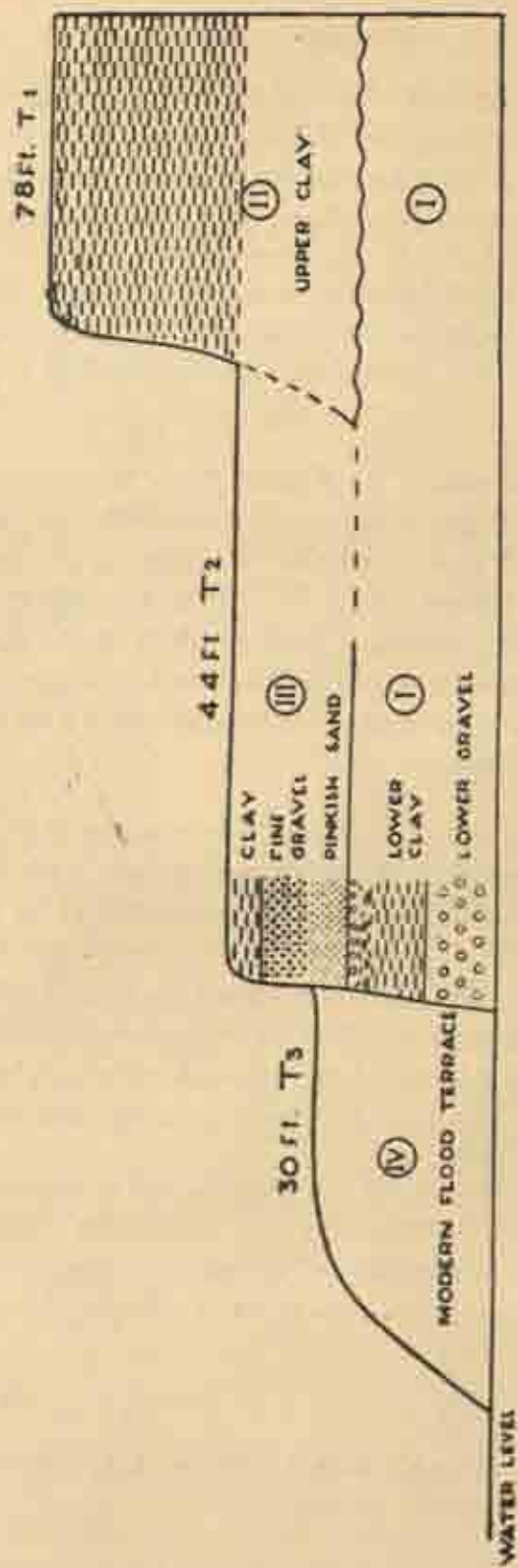
1. Sometime in the Mid-Pleistocene, the river Narbada cut its present bed through a rock trough. But there is no information about the lowest filling within this trough. Evidence of laterite as in the Hoshangabad—Narsinghpur area could not be verified. But at present, the river is exposing the lowest group of well-cemented conglomerates. This

1. KRISHNASWAMI, V. D. K., *op. cit.*

2. CAMMADE & BURKITT, *op. cit.*

3. DE TERRA and PATERSON, *op. cit.*

4. We are very much obliged to Messrs S. C. Malik, J. J. Kapasi and G. C. Mahapatro for the help rendered in this survey.



SECTION ACROSS THE RIVER NARBADA OPPOSITE SAHASR ADHARA

VERTICAL 0 40 80 FEET

HORIZONTAL 0 40 80 FEET

Fig. 14.

and the overlying silt has been described earlier as the lower group, representing one phase of aggradation. (Group I, Fig. 14)

2. After a break, which probably represents a reversion to wet conditions, another gravel was deposited on top of the lower clay. At places these clay beds have been badly tilted. But, as noted by De Terra also, no there is terrace level associated with this.
3. The Upper group of gravel and clay (or at places only clay), rest on top of the weathered lower clays with a disconformity. This aggradation is very prominent. This top is very well-preserved as a terrace about 80 feet above the present water level. This is one of the best preserved terraces of the Narbada. (Group II, Fig. 14)
4. The next phase is one of erosion. The river eroded down to the top of the gravel of the upper group and at places it has washed and resorted these gravels.
5. The next phase of aggradation is characterized by the formation of fine gravel with a predominance of trap pebbles and pellets and the clay on top of it. Wherever it is preserved, the top of the clay constitutes the 2nd terrace, from the present water level, at about 40 feet. (Group III, Fig. 14)
6. The last phase seems to be an erosion and the formation of the most recent terrace, may be the modern flood level. (Group IV, Fig. 14)

It is very interesting to recall that this entire section is very well-preserved near Sahasradhara about 3 miles down stream from Maheshvar (Fig. 14). This section more or less confirms the one given by De Terra¹ in his Fig. 182. In this season's work a few tools were found *in situ* in the various gravels. But the material is not sufficient to make a distinct typological analysis. However, the most important fact noted is the association of the lower 40-foot terrace with the Middle Stone Age flake-blade-scraper industry, significance of which will be discussed in the next section.

All along the East Coast of India, there were outcrops of laterite, and in the detrital or re-deposited laterites very large quantities of Early Stone Age tools had been found. One of the largest of such collections comes from Nellore and belongs to Rev. Manley. But no stratigraphic evidence is available and Dr. Aiyappan has given us a fine typological analysis.²

A very interesting series of studies were started by N. K. Bose and D. Sen in the Mayurbhanj District of Orissa. They started with the tools found in the secondary—laterite pits near

1. DE TERRA and PATERSON. *op. cit.* p. 314.

2. AIYAPPAN, A., *The Manley Collection of Stone Age tools with topographical and other notes. Memoirs of the Archaeological survey of India. No. 68.*

Kuliana.¹ Now they have succeeded in linking it with the sections of the Burhobalang river about 3 miles from Kuliana. Their latest study of geological and palaeontological evidence gives the following sequence based on the sections of the river at Mahulia, Mukramatia and Satputia and their earlier section of Kamarpalghat on the same river.

There is at places a secondary laterite with tools on top of the Baripada beds consisting of shales and lime stones. Overlying this is a conglomerate bed, which is in turn capped by clays and silts. According to them, there were crude pebble tools of the "African types in the lower part of the gravel". Taking the typical Abbevillo-Acheulean tools of Kuliana beds they interpret as follows :

1. "The extension of the Kuliana sequence of Palaeolithic implements has been established into the boulder conglomerate bed near Kamarapalghat lying within three miles of Kuliana with an earlier crude tool phase at the base."
2. "The Age of the Baripada beds may be placed in the Lower Pleistocene instead of the Lower Miocene."²

Thus this sequence, inspite of the interim character of their studies, shows a picture very much akin to the Vadamadurai-Attirampakkam sequence of the Madras area and requires watching.

In the Malaprabha valley of Karnatak, detailed investigations were carried out by Dr. R. V. Joshi. Here the industry shows on the whole developed 'Acheulean' hand axes and cleavers, but there is no vertical division between the various types of crude and developed forms.³

In the Godavary, very important evidence was found by Dr. Sankalia near Nevasa. Here in the gravels of the river Pravara, he found a typical Abbevillo-Acheulean hand axe and cleaver industry with *Bos Namadicus* of Mid-pleistocene age (?) and is comparable stratigraphically and typologically to Narbada sequence.

In the Bombay area, Todd discovered a similar Early Stone Age assemblage, but this section is important as the previous one for the upper series belonging to the Middle Stone Age.⁴

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1. SEN, DHARANI and BOSE, N. K. *Excavations at Mayurbhanj*. Calcutta 1948.
 2. SEN, BOSE and G. S. RAY. "Geological and Cultural evidence of Stone Age in Mayurbhanj" *Man in India*, No. 1, Jan-March 1948.
 3. JOSHI, R. V., *Pleistocene Studies in the Malaprabha Basin*, Poona, 1955.
 4. *Indian Archaeology*, 1954-55.
 5. TODD, K. R. U., *Journal of the Royal Anthropological Institute*, 1939.

In Gujarat, we have typical 'Abbeville-Acheul' hand axe industries belonging to the first wet period and the beginning of the first dry period as suggested by Prof. Zeuner. But here again there is no vertical division within the assemblage.¹

The same story is more or less repeated in the Balia nadi of the Singrauli basin.² More recently Deshpande, Rangnatharao and Sengupta have been collecting large quantities of typical Abbeville-Acheul tools with a good number of pebble choppers from the beds of Gambhira, Berach and Chambal in the Chitorgarh District of Rajasthan.³

Dr. Seshadri has described a typical Early Stone Age industry from Kibbanahalli, Mysore.⁴ According to him it consists of rostracarinated, Abbevillian and Middle and Late Acheul hand axes. In his more comprehensive work, he comments that the Mysore Palaeolithic industries represent a culture comparable to Attirampakkam.⁵ But the most interesting feature is that "a variety of small flake tools go with heavy tools". In view of the absence of any stratigraphic evidence, it is not possible to assess their relation. Both these industries require further study.

Thus the broad outlines of the Early Stone Age in India are clear enough, though the details of exact chronology and stratigraphy await further investigations. *At present the whole correlation of the Boulder Conglomerate of the II Glacial Potwar region and those of Narbada, with the Orissa and Madras boulder beds depends entirely on typology.* We have already alluded to the need for a fresh evaluation of Pleistocene palaeontology of the Tropics, if we are to avoid some of the problems which Dr. Deraniyagala had to face with the palaeontology of the Ratanpura gravels of Ceylon. For example, it will be very interesting to quote here the problem of De Terra in the Narbada basin. Besides it will also high-light the problems of Palaeolithic chronology in India.

"At first this stratigraphic pattern resembles that found in the Potwar region of North-west India, where the Boulder conglomerate, Potwar silt, and younger alluvium make for an equally distinct cycle. However, such superficial resemblance may lead to errors, for it must be remembered, that we can choose between correlating the Narbada stages either with the four "main zones" of the Punjab or with its sub-stages as recorded in the terraces. Should we attempt the former correlation, we would on Palaeontological grounds feel inclined to equate the "Boulder conglomerate zone" of the Upper Siwaliks series with the "Lower Narbada group".

1. ZEUNER, F. E., 1950, *op. cit.*

2. KRISHNASWAMY & SUNDARARAJAN, "Lithic Industries of the Singrauli Basin", *Ancient India* No. 7, 1951.

3. *Indian Archaeology—A Review* 1953-54; 1954-55.

4. SESHADRI, M., "The Palaeolithic industry of Kibbanahalli", *Artibus Asiae* XVIII, Nos. 3 & 4, 1955, pp. 271-87.

5. SESHADRI, M., *The Stone using cultures of Prehistoric and Proto-historic Mysore*. London, 1956.

as had been suggested on previous occasions (De Terra and Teilhard, 1936). But the archaeological records argue strongly against such a correlation, because the "lowest group" contains heavily rolled Abbevillean and fresh Late Acheul hand axes, which in Punjab appear only connected with the stages younger than the Boulder Conglomerate (T1-T2) (italics mine). As it is very improbable that these industries appeared in both the regions at such different intervals, we are obliged to take the second alternative—namely to correlate our sequence with terrace deposits of the Punjab."¹

This brings out the complexities of Indian Pre-history and much patience is needed. Similarly, we have to take into consideration the possibility of a slightly later date for the Central Indian and Peninsular industries. Should we not yet try to find out a reason for the uniform occurrence of anything from Abbevillean to a developed Acheul tools in the same beds, without any vertical division, as in Gujarat, Maharashtra, Narbada valley, East Coast and the Malaprabha valley? Recently the finding of *Bos Namadicus Falconer* in the Pravara basin, with Early as well as Middle Stone Age tools, also brings out the other anomalies in our chronology. Hence we should take the picture described in the earlier stages of this chapter as provisional and try to make intensive efforts to clarify the picture and remove the anomalies.

Finally, large quantities of tools have been recovered, but the remains of man have, as yet, eluded us. It is not superfluous to repeat that a concerted effort of the archaeologist, geologist, the palaeontologist and the soil scientist is needed if we are to throw further light on this neglected phase of India's cultural history. Vague resemblances in technique and typology with those of Africa and Europe are unmistakable, but to define these relationships the desideratum is a greater effort at home and abroad. Sen has suggested a parallel development, but it is too early to say anything more.

B. Middle Stone Age

This is, as yet, the least known of all the phases of Indian Stone Age. The basis of this new term has already been explained. It is being put forward as a hypothesis to explain an enigmatic group of stone industries, which do not fit in with the Early Stone Age or the equally distinctive Geometric and Non-geometric industries, widely distributed in time and space all over the sub-continent. Hence very vague term like "Proto-Neolithic" has been applied to them to show their distinctive character. But in a few localities there is some stratigraphic basis to show their intermediary position within the other well-known assemblages. This position was brought home by the discovery of a large group at Maheshvar and recently in a stratified

1. DE TERRA and PATERSON. *op. cit.* p. 320.

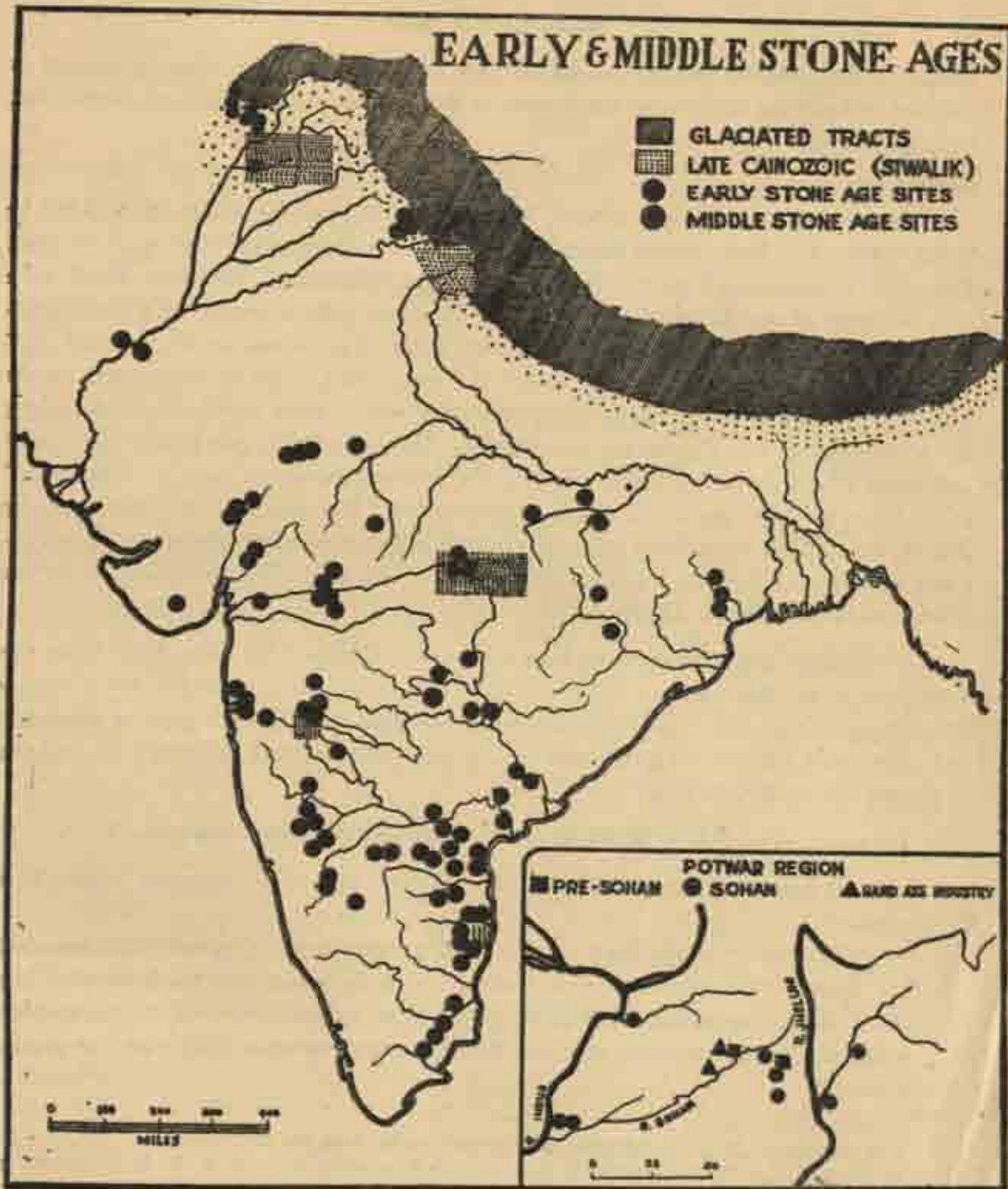


Fig. 15.

context by Dr. Sankalia near Nevasa on the river Pravara. Hence the following account is intended to focus the attention of the workers to this problem. It needs a fresh investigation. (Fig. 15)

Bombay area

The finest evidence for this industry is provided by the sections at Khandivli studied by Todd¹ (Fig. 16). Now, we can understand his sections in the light of recent work by Prof. Zeuner and by comparing them with those of Gujarat and Maharashtra. As already stated, there were two series of aggradations with a break. At Khandivli, we have more or less a similar situation. The lower clay, "bluish brown" in colour, seems to correspond to the 'Mottled clay' of similar colour noticed in all the river systems of Western India. Then the lower gravel and the Middle clay constitute one aggradational deposit starting with a coarse gravel. Archaeologically, it is of the same age as in Gujarat and Maharashtra. This is succeeded again by an Upper Gravel and Upper clay in the eastern sections, while in the southern section, we have a "laterisation" of the top of the lower gravel with rubble underlying the "Red earth". As pointed out by Zeuner, the wind activity becomes less as we go south and eastwards from the Sabarmati valley—(note the difference between Sabarmati and Mahi—for example)—This would account for the absence of this evidence in Khandivli.

If we accept this correlation, we have a very interesting evidence of an Early Stone Age assemblage at the base while in the intermediary levels there is a "blade-and burin-industry which appears to get into a more evolved stage in the upper clay with such types as polyhedral and angle burins and even the parrot beak type, strongly reminiscent of the Asiatic Aurignacian of Europe and the Middle East"²

The recent work of S. C. Malik in the Khandivli area confirms this sequence.³

Similar evidence has been found by Dr. Sankalia in the valley of Pravara near Nevasa. Here is his account :

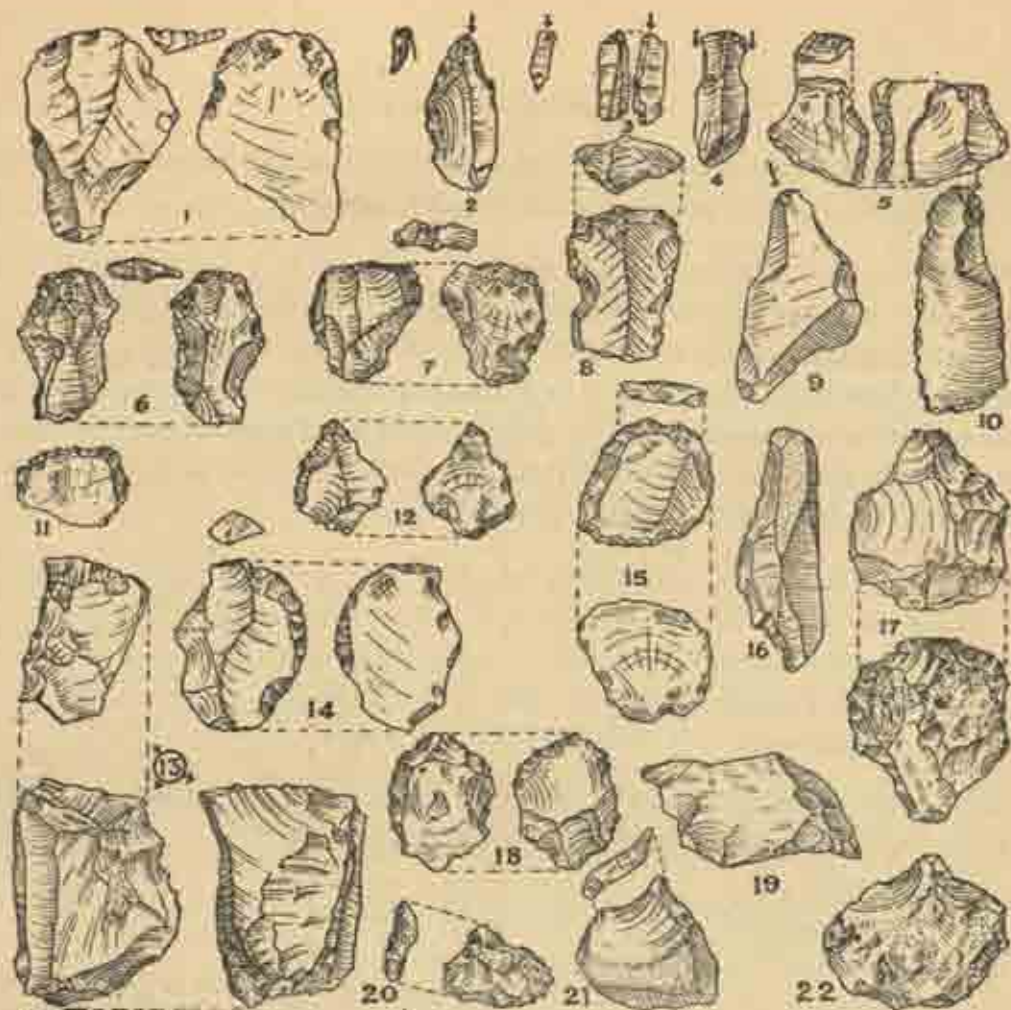
"The earliest occupation was represented by three layers of gravel, which contained two types of lithic industries. One, probably the earlier was a hand axe industry of Trap-rock. It was typologically Acheulean. The second industry consisted of comparatively small cores, flakes, scrapers, blades and burins of jasper, carnelian and other fine grained stones"⁴

1. TODD, 1939. *op. cit.*

2. KRISHNASWAMY, V. D. K., "Progress in Prehistory", *Ancient India*, No. 9.

3. MALIK, S. C., "Palaeolithic Industries of Bombay—A Re-evaluation", *Journal of the M. S. University of Baroda*, Vol. VI, No. 1, March 1957.

4. *Archaeology in India—A Review—1954-55*,



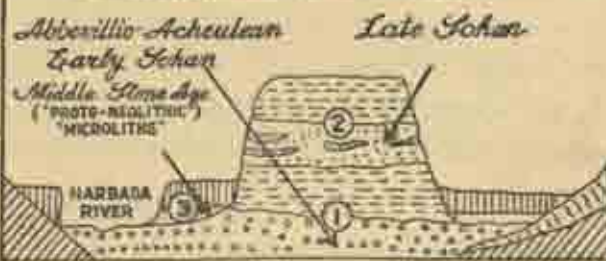
KHANDIVLI SECTIONS SEQUENCE

SECTION	SEQUENCE
UPPER CLAY	MICROLITHS
RED EARTH	BLADE-BURIN
UPPER GRAVEL	EQUUS NAMADICUS
RUBBLE	" " ATINUS
MIDDLE CLAY	FLAKE-BLADE-SCRAPER
LOWER GRAVEL	LATE-ACHEULAN CLACTON
LOWER CLAY	CHELLEWAN CLACTONTIAN
LOWER GRAVEL	ROSTRO-HANDAXE
LOWER CLAY	CLACTON
ROCK	
SOUTH	EAST

After K. R. U. Fodde

SECTION OF NARBADA NEAR NARSINGHPUR

CORRELATION WITH POTWAR REGION



- ① LOWER GROUP
- ② UPPER GROUP
- ③ BLACK SOIL GROUP WITH BASAL GRAVEL

After Dr. Fourn & Teilhard

Fig. 16. Type sections at Khandivli near Bombay and at Hoshangabad on the Narbada, with tools from Adilabad (1, 2 & 21); Kurnool District (3); Khandivli (4); Maheshvar area (5-8, 11-20 & 22) and Nevasa (9-10).

This account would thus furnish an additional confirmation of this sequence, specially since the lower industry is, as already said, associated with *Bos namadicus*.

From Central India, particularly the Narbada basin, we have evidence to confirm this hypothesis. De Terra and Teilhard studied the stretch of Narbada near Narsinghpur. There in the third period of aggradation (minor)¹ indicated by the basal sands or the gravel of the "Black soil group", we have similar evidence. "In the basal gravel and sands in the lower few feet, was found a flake industry characterized by the absence of hand axes or large cores and by the dominance of small blades and scrapers. These tools are made of flint or jasper, clearly indicative of a total change both in technique and in choice of materials".

Unfortunately, the authors of this valuable survey have not given any description of this industry. Besides the finds have been divided between the various institutions in India and abroad. The writer of this account studied the collections available in the museums at Calcutta and Madras, when he was studying the fresh collections made in the Maheshvar area.² The numbers refer to are those in the catalogue of the Indian Museum, Calcutta.

- 11211 Leaf shaped scraper on a primary flake with cortex, flaked alternatively on one edge and retouched on the other longitudinal side by steep shallow flaking. On the back also, there is retouch.
- 11230 A leaf shaped side-end scraper on thick flake of jasper.
- 11216 Scraper on a semi-rectangular flake retouched on all the sides.
- 11231 Semi-triangular flake of green jasper with a faceted platform and retouched on both the sides. One side shows battering due to use.
- 11245 A core with alternate step flaking.
- 11221 A side-end scraper on a thick flake, with the one edge retouched by steep upward flaking.
- 12229 A semi-rectangular rolled flake with a hollow base and the side shows some working, but is badly battered.
- 11238 A side scraper on a large thick flake. While one side shows steep retouch, the other edges, (back and front) show evidence of retouch or use marks.
- 11212 Long flake of chert.

About 200 miles down stream on the Narbada, we have plenty of material from the cliffs as well as number of sites at the foot of the Vindhya.³ Here, there are fine veins of jasper ex-

1. DE TERRA and PATERSON. *op. cit.* p. 320.

2. I am very grateful to Shri C. Sivaramamurri and the staff of the Indian Museum, Calcutta for the facilities.

3. SANWALIA, SUBBARAO, & DES, *Excavations at Maheshvar and Narda toll, Poona-Baroda, 1958.* pp. 37-41 and Figs. S,T,U, and V.

posed near the foots of these hills on either side of the river. A very large collection was made. (Fig. 16-5, 6, 7, 8, 12-18, 20 and 22). Besides the scrapers and short blades on flakes, the characteristic type seems to be a double hollow scraper or a borer. (20-22).

As already explained in the section on the Early Stone Age, the recent studies at Maheshvar have thrown a very important light on the age and character of this industry. It belongs to the basal gravel of the 40-foot terrace of the river Narbada. A number of tools were recovered *in situ* from the fine Trap gravels of this terrace. (Fig. 14).

But the most interesting factor of this industry is the large number of open sites found in the interior at the foot of the Vindhya and Satpuras on either bank of the Narbada. In the intra-trappean beds of the Trap formations through which Narbada flows, there are large outcrops of variegated jasper which occurs in huge thick veins. At Choli, about 12 miles North-east of Maheshvar, there are blocks of jasper as big as $2 \times 2 \times 1$ feet. So in the open fields near these outcrops we have extensive factory sites of the Middle Stone Age. One cannot ignore the nature of these open sites, which are difficult to date. Yet, one important fact for their antiquity is the *absence of any significant typological difference* between those associated with the terrace gravels and the open sites in the interior. Provisionally, this homogeneity may be interpreted as suggesting a contemporaneity of the both. Hence one may argue that the people who lived on the banks of the river chipped their tools near the outcrops in the interior. Besides, this industry has a wide distribution in the country and it also represents a switch over to the fine-grained materials. Hence it shows a systematic hunt for raw materials.

Now we have seen what little stratigraphic evidence is available about this industry. From Adilabad, Prof. Haimendorf has collected a large number of scrapers and blades and they are now lying in the London University Institute of Archaeology. I am obliged to Prof. Zeuner for permission to illustrate a few specimens from this collection (Fig. 16, 1, 2, 21). Among the older collections, Foote's antiquities from Patpad *Cache* is unique.¹ In view of the proximity of this site to the fossil bearing Upper Pleistocene caves of Billasurgam in the Kurnool district, the whole area calls forth an urgent investigation. Similarly from the limestone areas of Bijapur and Dharwar, Chapghar has found large number of such specimens from the caves, and our problems can be solved if the stratigraphic horizon of this industry can be confirmed.

Finally we propose to close this account with the pioneer typological classification attempted by Cammiade and Burkitt. They assigned this blade and burin industry to their series 3 (Fig. 17) while the earlier two series represented an Abbevillo-Acheulean industry.

1. FOOTE, *Ippocr.*

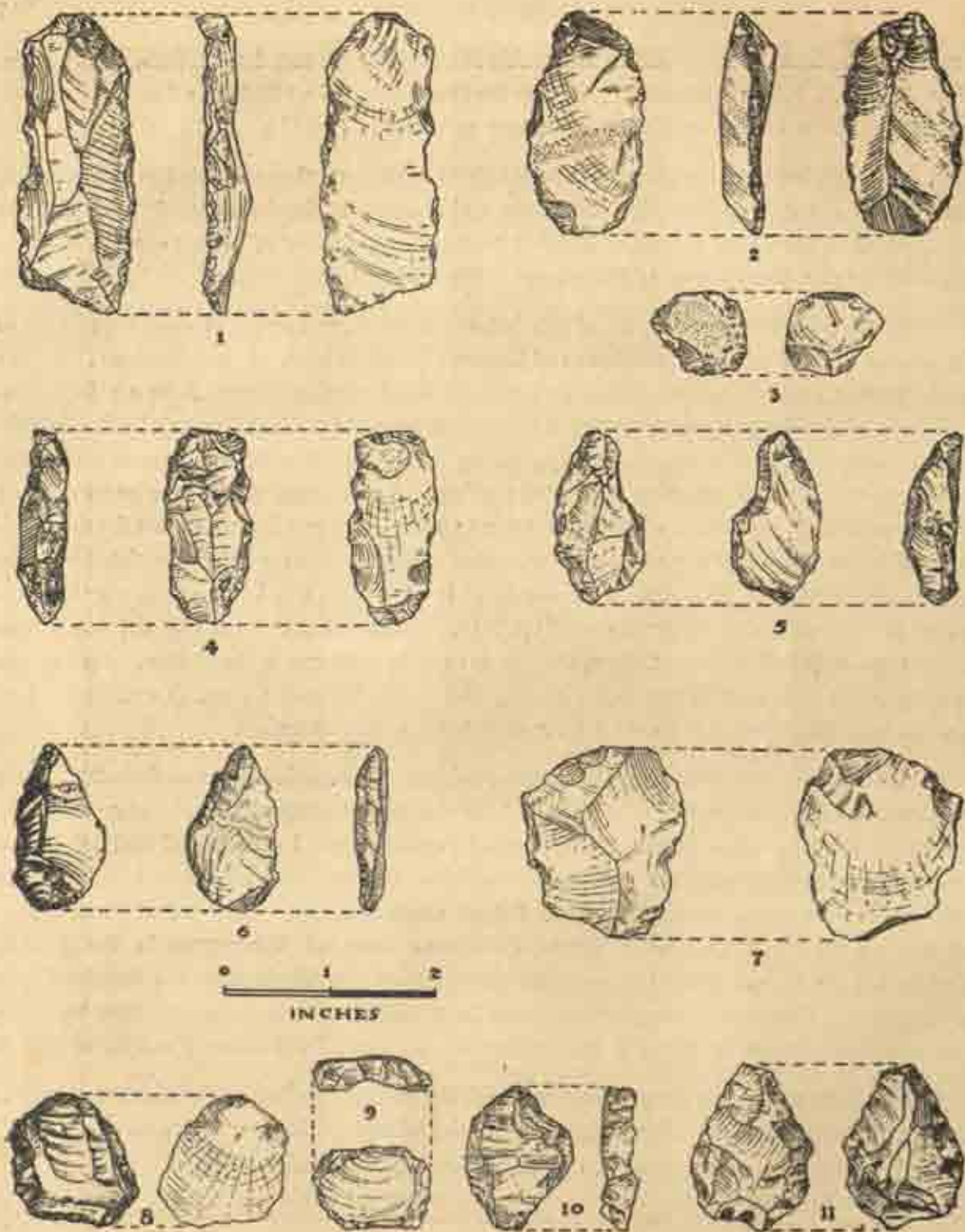
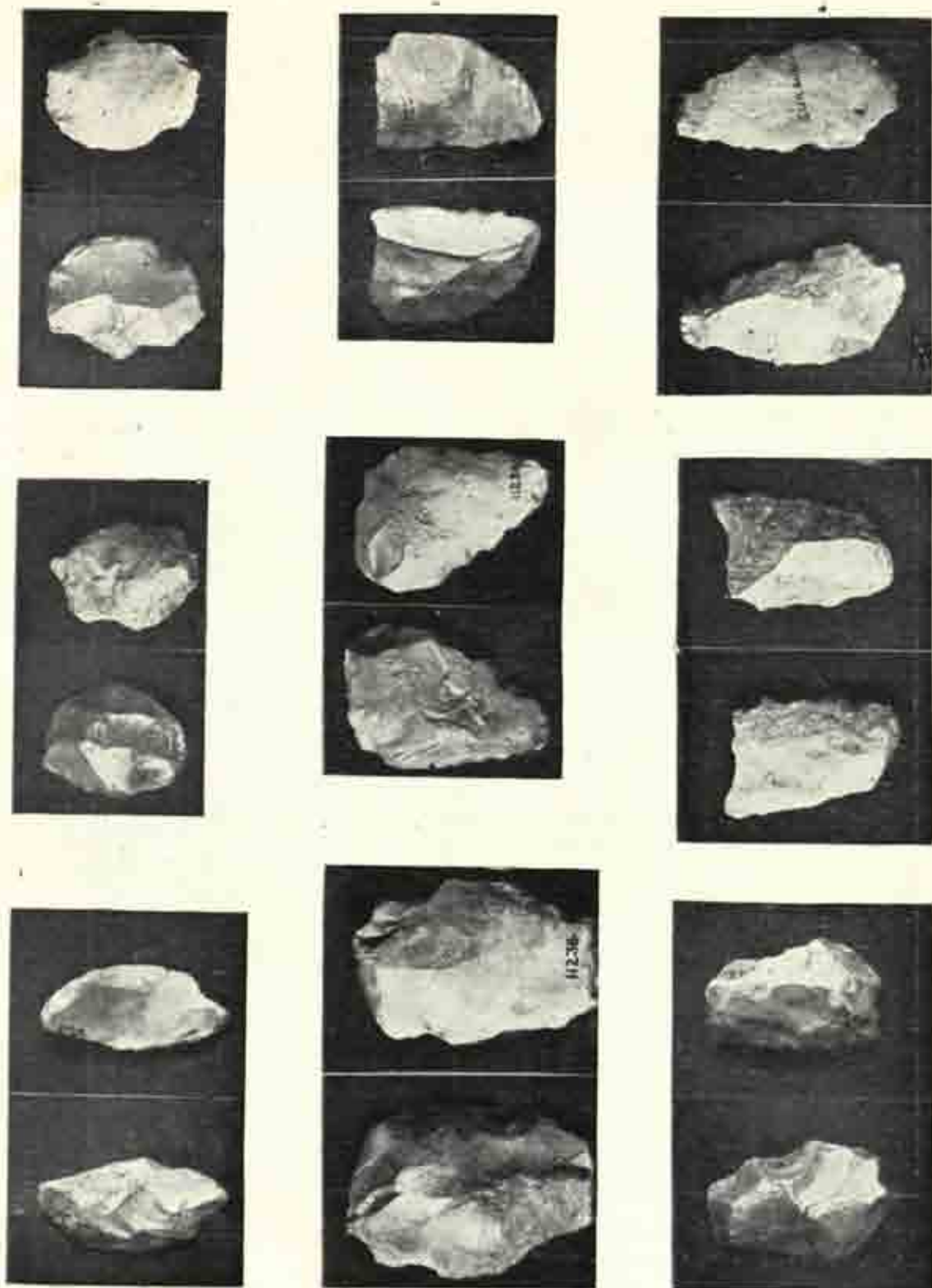
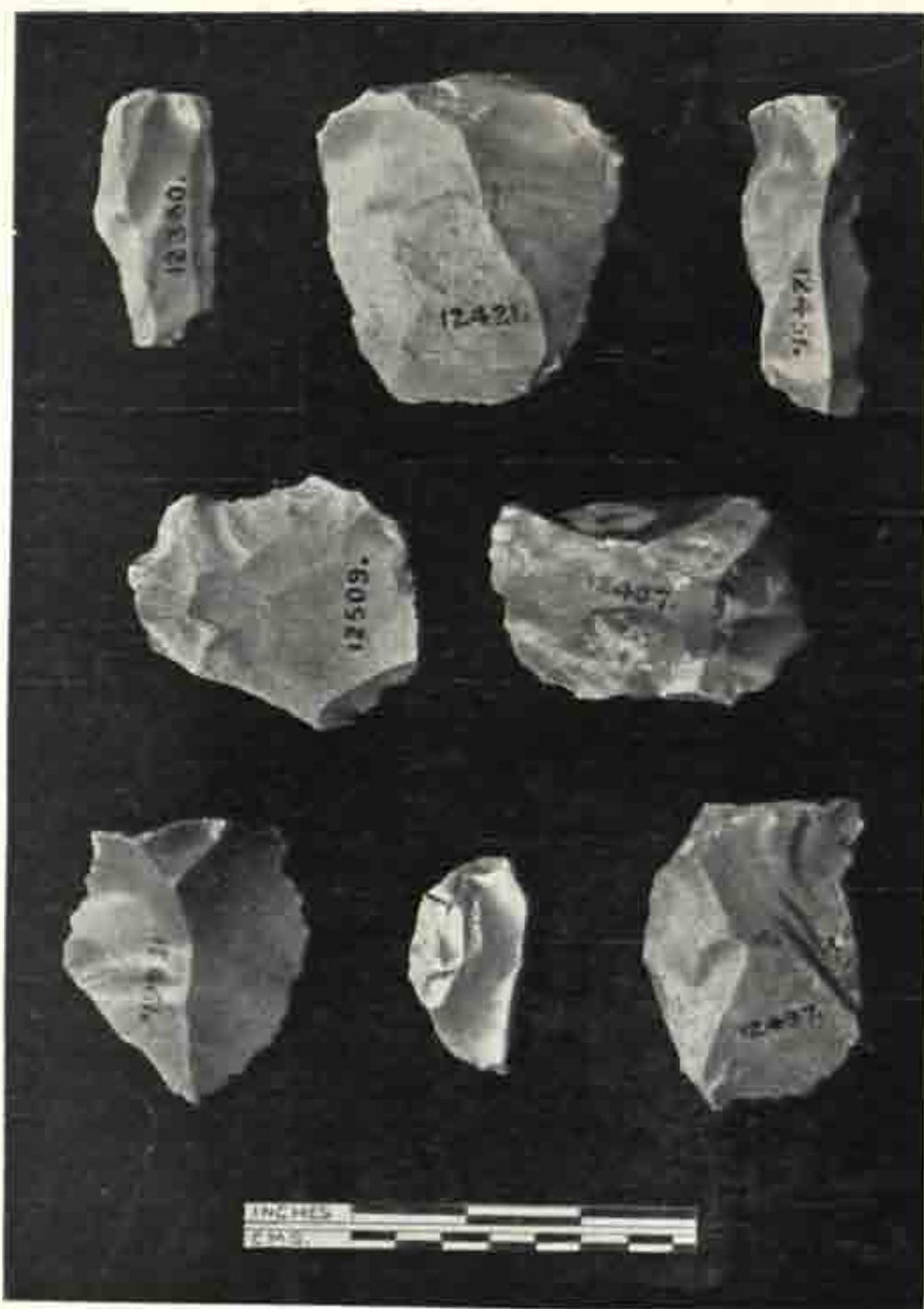


Fig. 17. Middle Stone Age tools from Uravakonda and Patpad Cachde—Kurnool District. From the Foote's collection in the Madras Museum.



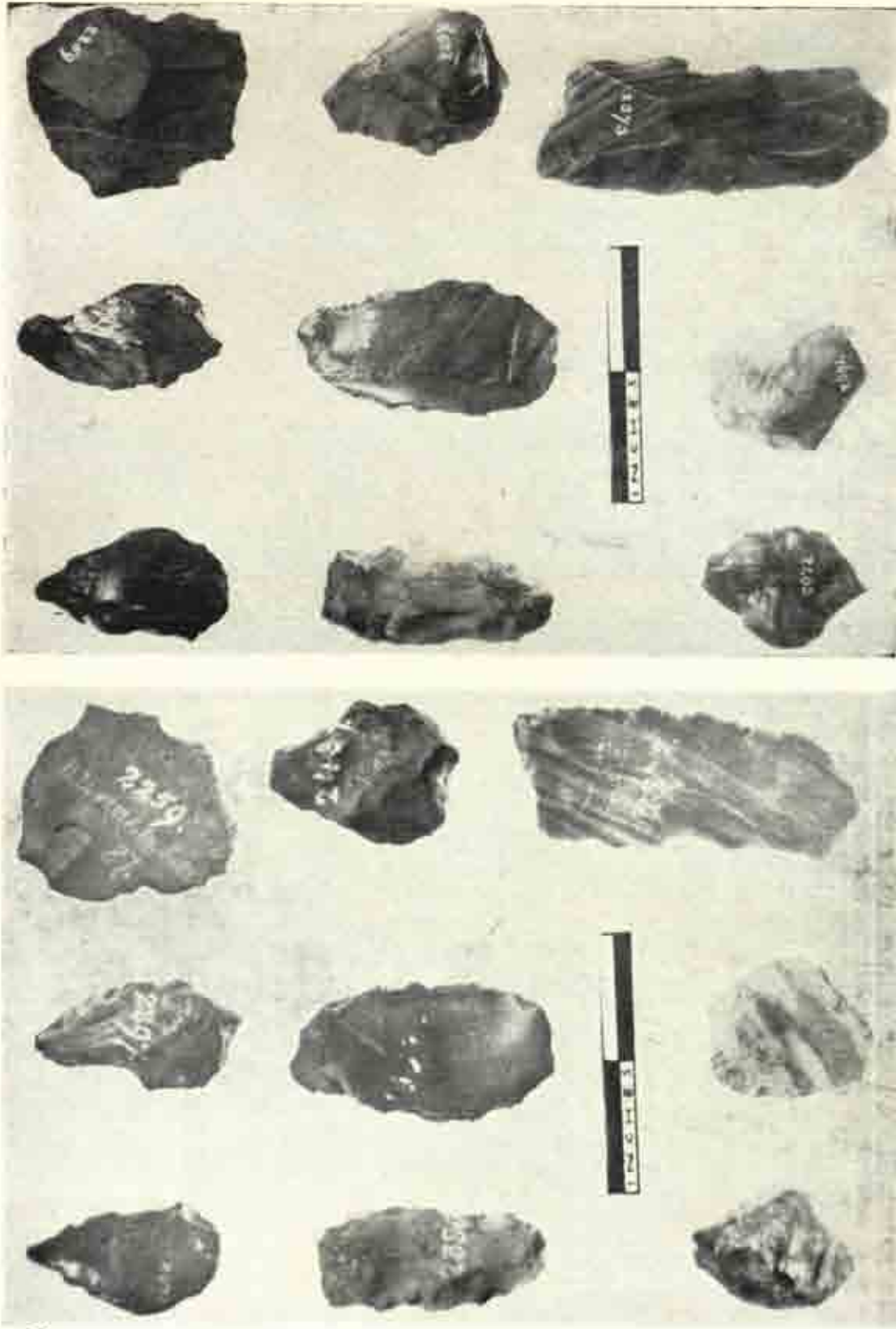
I. Middle Stone Age Blade-scraper industry from Narsinghpur and Hoshangabad from the collection of the Yale-Cambridge Expedition in the Nartada Valley. The specimen—(bottom right)—comes from Sukkur in the Indus Valley, Indian Museum, Calcutta
 By Courtesy—Director General of Archaeology in India.

PLATE II



II. Retouched scrapers from Sukkur and Rohri—Indus Valley, Pakistan—from the Yale-Cambridge Collection, Indian Museum, Calcutta.
By Courtesy—Director General of Archaeology in India.

PLATE III



III. Retouched scrapers and furin from the Kurnool District, Andhra, from the Foote's Collection, Government Museum, Madras.
By Courtesy—The Superintendent, Government Museum, Madras.



IV. (1) A view of the valley Sanganakallu between the Sanganakallu and the Kupgal hill.
(2) The Sanganakallu hill, Bellary District, Mysore State.

As already pointed out, the age and character of this Industry requires a further investigation and the most promising localities seems to be the caves in the lime stone areas of Karnatak and Andhra.

C. Late Stone Age

The last two phases of the stone age in India are the "Late Stone Age" and the "Neolithic". Though we have substantial evidence from the Central Deccan about the separation of these phases of Indian stone age, there has been a good deal of confusion, due to the indiscriminate nature of the collections lying in the various museums in India and abroad. Only in recent years, evidence is forthcoming to differentiate the earlier Geometric Microlithic Industry (Late Stone Age) from the Neolithic or Polished Stone Industry and the fine Chalcolithic blade industry or the "ribbon flake" as it has been called. An order is appearing at least in Western India and Central Deccan, but we should make a fresh study as typology seems to have done the maximum harm to this phase. An attempt to probe into these problems was made by Col. Gordon,¹ but the recent evidence takes us much further. There is definite evidence of differential distribution in space (Fig. 20), and in some of the areas even of time. But the former calls for an explanation. A situation similar to that of Africa can certainly be recalled, owing to the environmental diversity within the country. Just as we have the genuine Pre-Neolithic Capsian and also the later "Beduin" microlithic industries in the drier parts of North Africa and South Arabia, we can postulate a widespread microlithic industry in India replaced or succeeded by either the Neolithic or the Chalcolithic in more favourable environments. The geographic factors enumerated already go a great deal in explaining some of these diversities.

Apart from the mass of "pygmy implements" and other casual collections from different parts of India, we have fairly well-observed material from only two areas: Gujarat, and Tinnevely District at the southern tip of India. From Central India, particularly from the tribal and forested hills, various collections have been made, notably by Gordon, but as we have said, further light on the sequence of cultures can only be shed from those of the perennial nuclear regions or areas of attraction and not "*cults de sac*". Unfortunately the evidence from the latter areas has been used to the prejudice of general studies in sequence and chronology.

Gujarat

In Gujarat, the pioneer discoveries of Foote² were continued by Dr. Sankalia whose explorations and excavations from 1941 at Langhnaj mark a very important stage in Indian

1. GORDON, D. H., "The Stone Industries of the Holocene in India and Pakistan", *Ancient India* No. 6, 1950.

2. FOOTE, *lppa*.

GUJARAT

MAP SHOWING THE DISTRIBUTION OF LANGHNAJ MICROLITHIC INDUSTRY

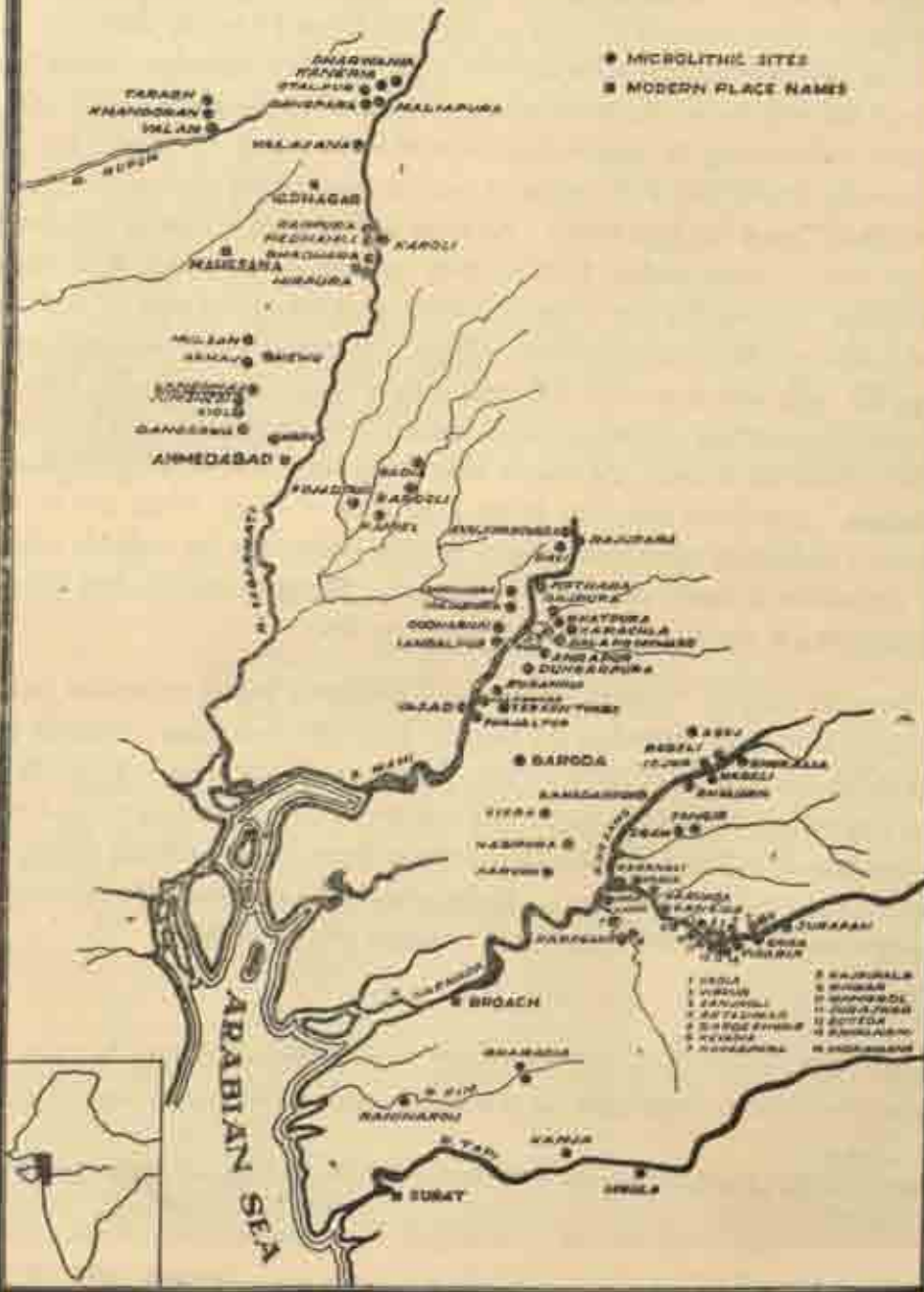


Fig. 18.

Prehistoric studies.¹ This was continued by the writer during the last five years and R. N. Mehta and S. N. Chowdhary have worked in the Narbada and Banas valleys (Fig. 18).

North and Central Gujarat provide excellent evidence for the study of the settlement pattern of these communities. In the Upper pleistocene, extensive wind-activity (referred to already) has left a vast area of fossil sand dunes and "blow-outs" or depressions, formed by the whirlpools of wind caught between the dunes. When the area became more habitable with the resumption of wetter conditions, some of these blow-outs supported small natural ponds. It seems that, in one of these wet phases, man settled on the tops of these wind-blown dunes surrounding those ponds. During the explorations it was found that ancient sites were located either on the cliffs of the rivers or on isolated groups of dunes with ponds. Thus, we can bring to our minds the picture of these hunting communities settling on the well-drained areas with water to support them and their prey.² Since no evidence of any definite habitation or houses have been found, we can only postulate nomadic people with very transient habitations.

The excavations of Dr. Sankalia at Langhnaj in the Mehsana District in 1942, '44, '47 and '49 resulted in the discovery of a large number of microliths, animal remains and seven human skeletons in a very highly flexed position. Due to the fine and homogeneous texture of the soil, as it was windborne, it was not possible to locate any stratification or sequence. The soil analyses carried out by Prof. Zeuner, however, yielded definite evidence of a buried soil.³ This was confirmed by the excavations conducted by the writer in 1954 at this site. A continuous humic horizon was found varying in depth between 2'-10" and 4'-2" by testing the soil with acid. Another human skeleton in a badly preserved condition was found below this horizon suggesting that the Microlithic culture belonged to the older land surface, subsequently raised by fresh deposition.

The animal remains are being studied at present by Zeuner, but according to him, "though the identification of the species present still requires some time, it has become certain that game animals are conspicuous in the fauna". Some of them are: Indian rhinoceros (*Rhinoceros*

1. SANKALIA, *Investigations into Prehistoric Archaeology of Gujarat*, Baroda, 1946.

SANKALIA, & KARVE, *Preliminary Report of the Third Gujarat Prehistoric Expedition*, Poona, 1945.

SANKALIA, & KARVE, "Primitive Microlithic Culture and People of Gujarat", *American Anthropologist*, Vol. 51, No. 1, 1949.

2. It is interesting to recall that all over the world these small hunting and fishing communities with these microlithic tools preferred soft sandy open sites (incapable of supporting heavy vegetation). This can be studied best in European Mesolithic period. But when once extreme specialization takes place these people seem to have moved even into the more wooded parts of Tropical India and Africa and managed to live with such small tools. If we are lucky one day in recovering the methods of hafting etc., we may be able to explain some of these anomalies.

3. ZEUNER, F. E., 1950 *op. cit.*

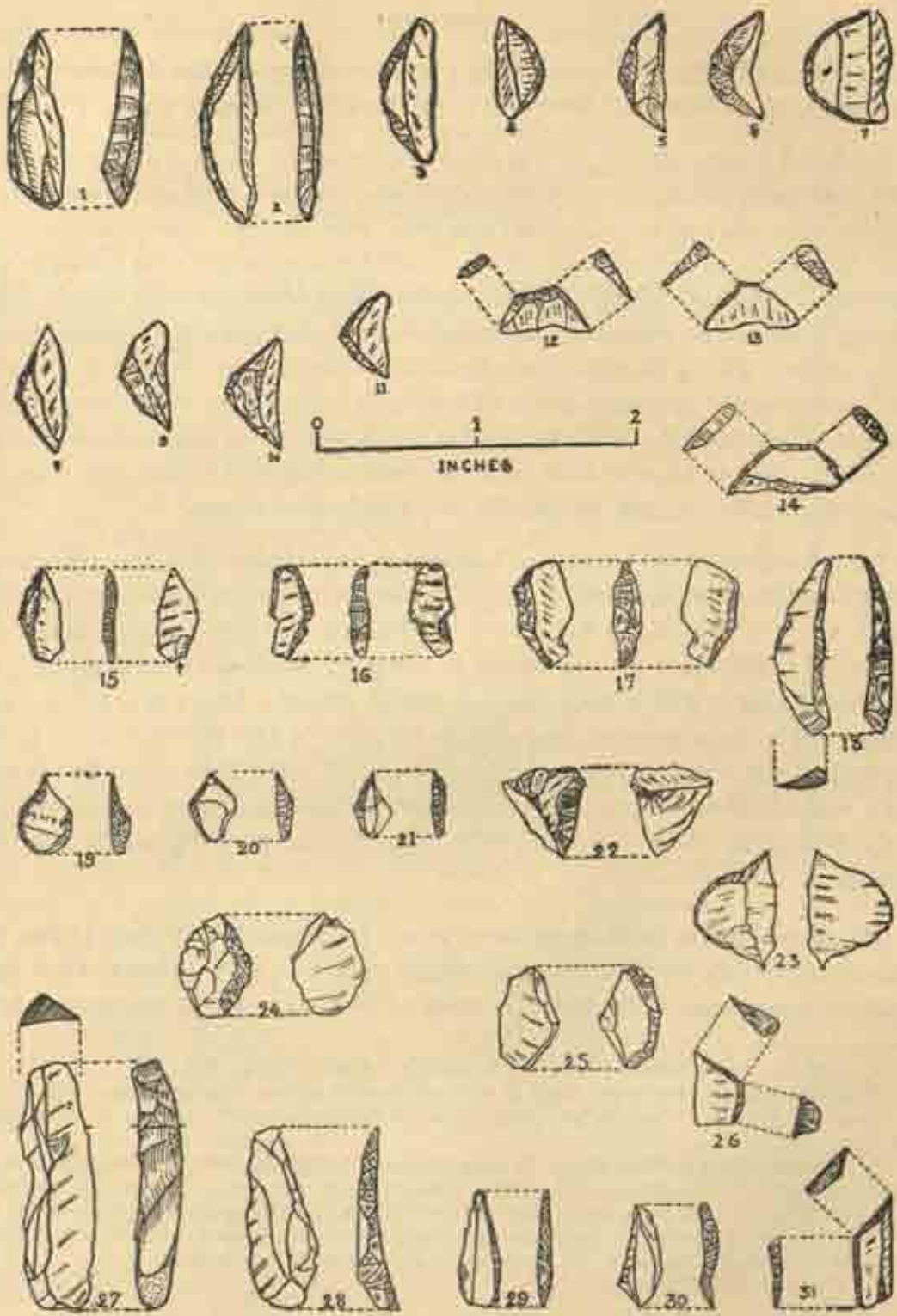


Fig. 19. Typical Microlithic Industry of the Mahi Valley—Gujarat.

Unicornis. L); Hog deer (*Hyelaphus porcimus* Zimm.), Indian buffalo (probably wild), Antelope (*Boselaphus tragocamelus* Pall.) and among the smaller ruminants Black Buck (*Antelope cervipra*, Linn.). Two skeletons of dog were also found (one near that of a man), but there is no definite evidence of domestication. Thus according to Zeuner, the predominance of the game fauna and the absence of domesticated animals remains so far, suggests that these microlithic people must have been mostly hunters.¹

This is also borne out by the typology of the microliths and other stone tools. The most conspicuous feature of this industry is the complete absence of any heavy tool, and at best, it can be described as a crude geometric microlithic industry. Only one perforated mace-head was found during this whole period. A statistical analysis of the material from the latest excavation by the writer (1954) showed that 87.4 per cent of the total microliths lay below the buried soil. The most common tool type among the microliths is the lunate or the crescent. The other types represented are—triangle, trapeze, side and end scrapers and core scrapers (Fig. 19). From the functional or utilitarian point of view the most important type recognized by Zeuner is the "asymmetrical point", in which a sharp point is obtained by obliquely backing one of the sides of a thick flake with a mid-rib. In view of the absence of the arrow head in the Indian lithic industries, these may be regarded as barbs and points or arrow heads.² But the most remarkable evidence of the manufacture of microliths was brought out by Zeuner in the course of his study of the animal remains. He noticed a number of artificial pits 10 to 25 mm. across on the large shoulder blade of the rhinoceros found by Dr. Sankalia. He explains³:

"The pits are all crowded with short cut marks which are mostly arranged radially. A few run across the pits without passing through the centre, so that it looks as if the pits are the results of the frequently repeated action of sharp cutting edges, which were impressed upon the bone in all manner of directions, though more or less exactly on the same spots. The result of this repeated operation was the wearing-away of the bone, which naturally was deepest where the largest number of cuts were superimposed. It is clear that these cuts, the longest of which is of the order of 12 mm., cannot have served any purpose such as cutting or carving the bone. The explanation which suggests itself is that the bone was used as an anvil for the manufacture of microliths, the cores being placed on the bone and the cuts being produced either by the sharp edge of the core or by the edge of the flake when it was struck off."

The most intriguing feature of this microlithic culture, however, is the presence in very small quantities of extremely comminuted pieces of coarse, hand-made and ill-fired pottery. In

1. Zeuner, F. E., "The Microlithic Industry of Langhraj Gujarat", *Man*, 1932, No. 182.

2. *Ibid.*

3. *Ibid.*

the previous excavations, the presence of this pottery in the lower levels was not noticed, but the small excavation of 1952 and the larger and more carefully investigated excavation of 1954 brought definite evidence of the association of this pottery right through the cultural deposits at Langhnaj. But it may be stated that there is a slight difference in the pottery of the deposits above and below the humic horizon, the top ones showing a slightly higher firing and a few distinct rims. A second point is the extreme scarcity of these sherds, and the largest piece found in all these seven seasons' excavations being about 2". Hence this problem requires further investigation and possibly from different sites.

The human remains have not yet been studied but a preliminary report of Iravate Karve may be stated to complete the picture. "The capacity of the skulls, to judge from the length and breadth measurements, compares with that of the modern Europoid. The supra-orbital ridge, the well-rounded occiput showing the ruggedness of the muscle relief, the pre-nasal fossa and the intra-orbital breadth suggest primitive features. The slight prognathism of one skull with the smooth small rounded forehead suggests Negroid affinities which belief is strengthened by the smallness of the cross-section as compared to the length of the long bones of the upper and lower extremities."¹

Finally, about the age and character of this industry, a tentative position may be stated. The existence of the buried soil at Langhnaj as well as at Akhaj (three miles away) has been proved by soil analyses. Since the main culture belongs to the buried soil phase, there is no doubt that Microlithic man occupied these dunes when there was an interruption in wind activity during one of those wetter periods with slightly heavier rainfall. This is also borne out by the fauna and particularly rhinoceros, the lover of swampy jungles. Probably with the resumption of wind activity, suggested by a further accumulation of soil, these sites were gradually abandoned. This can be borne out by the fact that only 12.6 per cent of the tools were found above the buried soil. They probably moved eastwards into the foot-hills of Gujarat.

At present there is no means of getting any absolute chronology for this site since there is no stratigraphic superposition. But the evidence from other excavations has thrown some light on the possible limits. The excavations of Ranganathrao at Rangpur² have revealed the existence of a crude microlithic industry in a gravel lens below the natural soil on which the Proto-historic Harappan people settled. How earlier does it begin, cannot be stated now. The second limit is provided by the excavations at Baroda³ and Timbarva.⁴ At Baroda there was a

1. SANKALJA & KARVE, 1949, *op. cit.*

2. Indian Archaeology, 1953-54.

3. SUBBARAO, 1953, *op. cit.*

4. MEHTA, R. N., *Excavation at Timbarva*, M. S. University Archaeology Series No. 2., 1955, Baroda.

clean barren layer between the Microlithic and the Early Historic phases. At Timbarva, this Early Historic phase of Baroda stratigraphically overlies, without a break, a still earlier period characterized by the presence of N.B.P. Since we have microlithic sites all round this place, the Microlithic phase could not be later than 400 B.C., a date assigned to the beginning of the early historic phase at Timbarva. This will be the lower limit, while the upper limit is provided by Rangpur.

In Gujarat we have more than eighty sites and they are distributed in the valleys of Banas, Sabarmati, Mahi, Orsang, and Narbada (Fig. 18).

The other area where we have reasonable evidence suggesting a high antiquity is the Tinnevely district. A chain of microlithic sites have been found along the coast. The microliths are to be found in the *tertiary* deposits of definite aeolian origin, though the capillary oxidisation has consolidated them.¹ This oxidisation has given a reddish colour to these dunes, owing to the movements of iron, and this seems to have affected the stone implements themselves. The whole group of these tools of quartz or crystal have a red staining ("red hydrated ferric oxide"). In some of the open sites, according to Zeuner, these tools were deposited on the lateritic 'pan', when the winds have blown the sand.

Prof. Zeuner and Bridget Allchin have published their studies of these sites.² Zeuner opines that these dunes represent fossil-beach overlain with dune-sand. These dunes weathered before the subsequent formation of recent active dunes. Hence he writes, "these microlithic sites are older than a phase of ancient weathering and are associated with a sea level higher than at present". Assuming the sea levels to vary between 20 to 30 he gives three alternative dates: (1) Late Monasterian or Last Inter-glacial, (2) 1st stadial of the Last Glacial or (3) Late Atlantic post-glacial sea level (about 4000 B. C.). On the present evidence he recommends the last, and further studies should be carried out in the area.

Another very important feature of this industry is the occurrence of pressure-flaked bi-facial points which are not found at all in any known site or collection from the rest of India. Since they are found in Ceylon, Africa and Oceania, it would be worthwhile to study these further. Similarly, one notices an increase in the use of quartz as one moves south. Whether it is a part of a cultural tradition of using quartz, or it is just fortuitous, remains to be studied further.

A similar industry of a high antiquity and associated with weathered soil profile and terrace

1. SPATE, *op. cit.* p. 727.

2. ZEUNER, F. E., and ALLCHIN, BRIDGET. "The Microlithic sites of Tinnevely, Madras State", *Ancient India*, No. 12, 1956, pp. 4-20.

system of the river Damodar has been located by B. B. Lal near Birbhanpur in Dist. Burdwan,¹ West Bengal. The tools lie in a weathered sandy loam, which rests on detrital laterite. There are a very wide range of a non-geometric microlithic tools with a few doubtful trapezes. The most interesting tools however, are fine² burins (polyhedral and bec-de-flute). This industry is very interesting in view of the occurrence wide of spread non-geometric elements in Eastern India. In the summer of 1953, the writer explored areas around Chakradharpur in the company of K. D. Banerji.³ Sen and Uma Chaturvedi have published a paper on microliths from this same area.⁴

It is now possible to conceive the theory that the Indian microlithic industries, particularly, the non-geometric could be derived from the Middle Stone Age tools. The most interesting discovery of S. C. Malik, in the Bombay area is the occurrence of diminutive forms of borer or double-hollow scraper in the microliths in that area.

Finally Krishnaswamy discovered in the Singrauli basin a microlithic industry four feet below the upper alluvium on the southern banks of Balia nadi "where the evidence is in conformity with the provisional dating assigned to early microlithic sites. This site is distributionally linked with the microlithic sites in the Banda, Bundelkhand and Baghelkhand. The general nature of the Singrauli microliths (backed blades, parallel sided blades, lunates, cores and coarse scrapers and arrow-heads in milky quartz), reminds us of a degenerate Upper Palaeolithic blade tradition and the entire industry, devoid of any associated pottery, can probably be ascribed to an early Mesolithic period".⁵

From the rest of India we have large quantities of indiscriminate collections with incomplete records (sometimes even of localities), lying in the various museums in India and abroad. Sometimes we have a few careful observations of investigators like Gordon, Hunter, Todd and a few others. But in view of the complexity of Indian archaeology with its problems of survival in different parts of the country and at different levels, it is very difficult to attempt any general classification or chronology. *We have had enough of typology and we should make fresh collections under closely observed conditions and fix them in relation to the local culture sequence or the sequence in the region concerned primarily.*

1. *Indian Archaeology—A Review*, 1953-54, p. 6.

2. I am very much obliged to Shri B. B. Lal who allowed me to see the whole collection at Baroda. Lal, B. B. "Birbhanpur—A Microlithic site in the Damodar valley, West Bengal" *Ancient India* No. 14, 1958, pp. 4-48.

3. This material is not yet published and is lying at Baroda with the writer.

4. SEN, D. and CHATURVEDI, UMA. "Microlithic Industry of Singhbhum", *Man in India*, Vol. 37, No. 4, pp. 294-304.

5. KRISHNASWAMI, *Ancient India*, No. 9, p. 65.

A survey of all the microlithic industries in India described above shows the wide distribution and their typological homogeneity. Now our recent studies clarify two points :

- (1) There is a widespread Chalcolithic Blade or ' Ribbon flake industry ' which is very distinct from the normal microlithic industry, by the predominance of blades and the absence of other microlithic tools.
- (2) Similarly we have clear evidence for the sub-division into Non-geometric microlithic industries and Geometric microlithic industries probably in a chronological order. In areas of Central and Western India, where the Neolithic cultures do not follow them, Geometric microlithic industry develops pottery, probably as a result of contacts with more developed cultures.

Thus we can now safely say that the Late Stone Age in India was characterized by a Non-geometric microlithic industry followed by a widespread Geometric microlithic industry. But in certain backward areas this industry survived for a very long time, till they were displaced.

Finally a few general observations about the Indian Microlithic Industry may be made to focus the attention of the workers. Microliths, as such, have a wide distribution in the time and space all over the Old World. But certain technological difference may be noted. Zeuner has pointed out how the asymmetrical points common in various parts of India are " one of the few items that distinguish the Indian microlithic ' hunting ' industries from the Wilton of South Africa " 58. Similarly bi-facial retouch and bi-facial points are very rare—almost absent—in the Indian industries. But they are very common in Africa, Ceylon and Australia. A few have been reported by Mrs. Allchin from the *teri* sites at the southern tip of the Indian peninsula, close to Ceylon. Finally, it is now agreed by the archaeologists all over, that the so-called " Micro-burin " is the by-product of the blade, lunate and trapeze industries by the use of the technique of preparing a notch and twisting. The absence of micro-burins in India is one of the most striking features and the few that are recorded are infinitesimally small when compared to the totals and suggest an accidental origin. Hence does it mean again a different technological tradition? The writer had the privilege of examining most of the collections from Gujarat made during the last decade, and the entire collection of Foote, lying at Madras and these inferences are based on it. Yet, there is no reason for complacency and further studies are a great desideratum.

D. Neolithic Period

We have already seen that there is a differential distribution between the Microliths and Polished axes (Fig. 20). But the nature of our existing collections (mostly surface and without

58. In this feature they resemble the Australian-industries where the asymmetrical point is present. ZEUNER, 1952, *op. cit.*

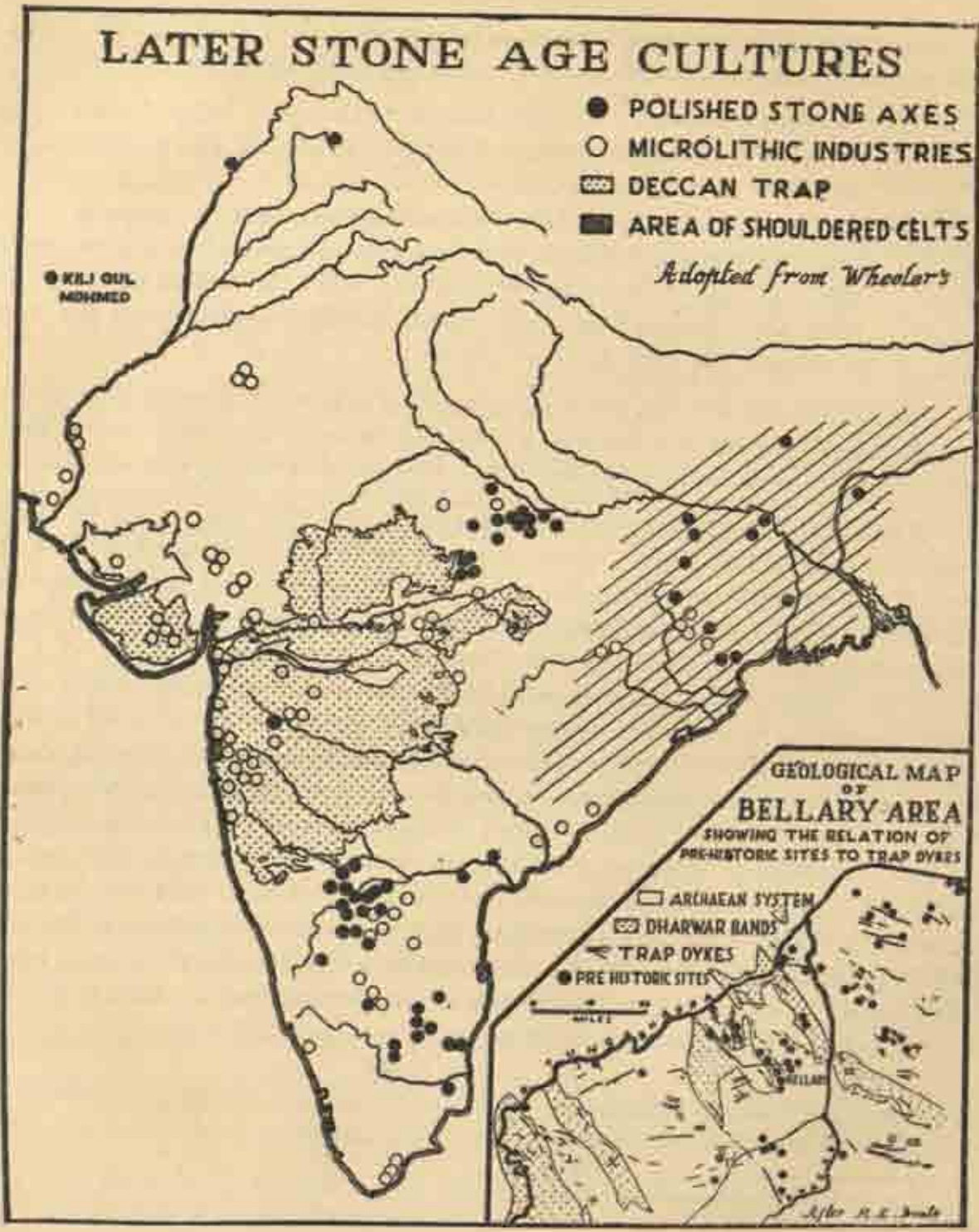


Fig. 20.

any records of their find-spots) vitiates any further study. But in Central Deccan, the districts of Bellary and Raichur have been studied in great detail following the excavations of Sir Mortimer Wheeler at Brahmagiri. It was followed by the survey by the writer, of the Bellary District culminating with the excavation at Sanganakallu, and Dr. F. R. Allchin's survey of the Raichur District was followed by his excavation at Piklihal. Shri B. K. Thapar conducted further excavations at Maski. Dr. Seshadri has made a study of the previous materials from Mysore State. As a result of all these studies, it is possible for us to reconstruct the sequence of cultures, following the sound principle of proceeding from the known to the unknown by stratigraphic method.

The earliest phase at Sanganakallu, (3 miles north-east of Bellary) consisted of a crude microlithic industry of quartz associated with a few heavily patinated flakes of trap and sandstone showing a 'Levallois' technique. This industry points either way towards to the earlier 'Middle Stone Age' already described and also to the succeeding Microlithic or 'Late Stone Age'.¹ As Seshadri and Krishnaswamy have put it, "this post-palaeolithic flake industry would be no more than a 'macro-facies' of the microlithic blades".² This phase at Sanganakallu was followed by a gap in the habitation, indicated by a weathered sterile deposit.

Succeeding this gap, the Phase 'IIa' at Sanganakallu is characterized by fresh celts and other polished tools with a pale-grey handmade pottery, but without any trace of the Painted pottery. The next Phase IIb is characterized by the appearance of typical Brahmagiri Ia and Ib type pottery and thus links up with the Chalcolithic elements of the upper valleys of Godavary and the Malwa plateau as we shall see in our Proto-historic period (Fig. 21). This stratigraphic position revealed in 1948 was confirmed by recent work in Central India and Maharashtra. B. B. Lal says, "The painted red ware occurred only in Sanganakallu II, 2 (IIb) and not below, while the burnished grey ware started from II, 1 (IIa). It appears, therefore, that the painted pottery reached the scene at a later stage, through an extraneous influence".³ But the copper and bronze was introduced in such small quantities as to have been ineffective in changing their economy, which is purely Neolithic. It is not difficult to understand this situation, if we can recall the type of culture contact—*viz.*, "fusion with the dominance of the resident traits". Besides the scarcity of copper would also accentuate the need to retain the heavy stone axes.

If we accept this position, the sequence in the Central Deccan becomes extremely interesting. Thanks primarily to Foote, who was associated with the geological survey of a large portion of South India and the careful investigations of Leonard Munn in the Raichur doab, we are

1. SUBBARAO, *Stone Age Cultures of Bellary*. Deccan College Dissertation Series, No. 7, Poona, 1958.

2. KRISHNASWAMI, 1953, *op. cit.*

3. LAL, B. B. *Ancient India*, No. 9.

SANGANAKALLU 1948

TRENCH II

TRENCH I

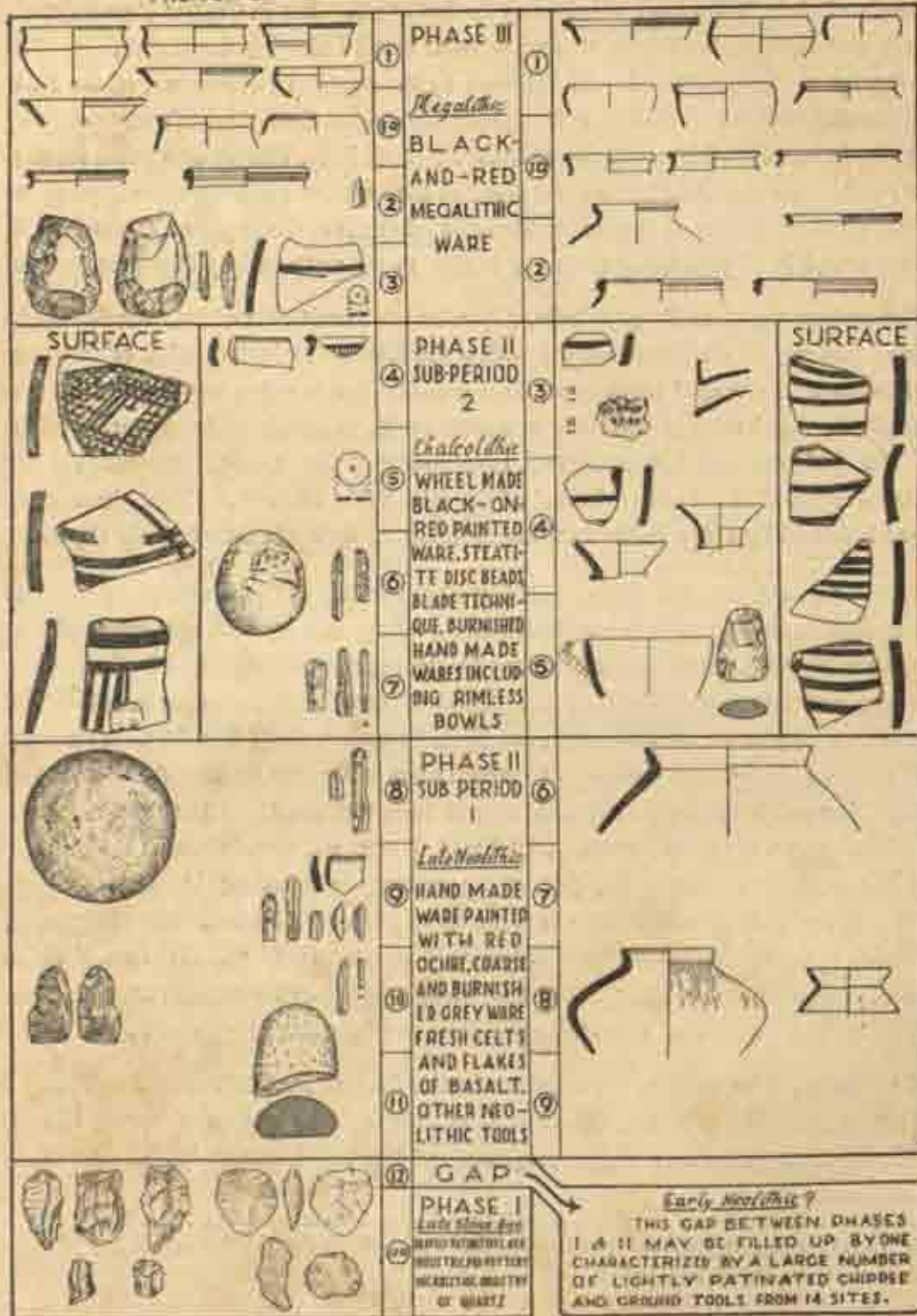


Fig. 21.



- V. (1) A view of the terraced plain on the top of the 'Face Hill' of Bellary town, with Neolithic settlement on top.
- (2) A view of the plain on the top of the Sanganakallu hill with the trace of one of the trenches excavated in 1948.



VI. Graffiti from the Neolithic sites of Bellary and Raichur Districts-1 to 3 from the top of the Koppal hill. (Bellary); 4 and 5 from the famous site of Billamrayana Gudda. (Raichur).

in a position to understand the physiographic environment and the influence of raw material on these widespread agricultural and pastoral communities of Southern and Central Deccan. They always lived on, or near the granatoid hills with convenient rock shelters overlooking their fields below. A fine negative evidence is provided by their avoidance of the schistose hills of the Dharwar system, which leave masses of sub-angular talus along the slopes making any cultivation very difficult. Besides, they always made their large variety of tools out of fine grained basalt or diorite found in large dykes, which intrude out of the gneissic series. Hence, we find a very interesting relation between granite and gneissic hills, dykes and these sites. This was worked out in detail for Bellary, Kurnool and Raichur districts (Fig. 20-inset). According to Sir Edwin Pascoe, all the dykes in Chingleput, South Arcot, Salem, Coimbatore, the Nilgiris, Bellary, Anantapur and the Raichur doab are the representatives of the great lava beds of the Cheyiar series of the Cuddapah system.¹ Foote earlier commented about the invariable use of this dyke basalt for the polished stone celts of South India (Fig. 22). At a number of sites in Bellary and Kurnool districts, large quantities of patinated tools including axes, chisels, picks, hammerstones etc. were found together with fresh specimens. Though patination in itself does not carry any chronological significance, the stratigraphic evidence of tools with different physical condition from Sanganakallu and the occurrences of fresh and patinated specimens from the surface at fourteen sites in the Bellary and Anantapur districts seem to lend weight to the suggestion that the Neolithic culture lasted for a considerable time, preceding the introduction of metals into the Central Deccan at the beginning of the 1st Millennium B. C.

↙ If we take into consideration the graffiti found near these settlements in Bellary and Raichur districts, we will be justified in inferring that these Neolithic Settlers domesticated the long-horned cattle, as suggested by Dr. Allchin.² At all their sites, large number of graffiti were found depicting cattle, other animals, huntings scenes and human groups. The first discovery of such drawings was made at Kuppal, Bellary District in 1892. At Piklihal, Allchin recovered terracotta figures of long-horned cattle from his excavations. Prof. F. E. Zeuner has identified the cinder from the mounds from Kuppal and Kuditini,³ as accumulated heaps of dung, suggesting again pastoral communities. Since similar slag was found in the excavations at Sanganakallu and Brahmagiri, the age of some at least of these mounds seems to be settled. This confirms the earlier theory, enunciated by Foote, on the origin of the mounds and their African parallels "Zariba", cited by him.⁴ Now it becomes clear that the typical celt with a pointed butt is characteristic of the Indian Neolithic.

1. PASCOE, SIR EDWIN, *Manual of Geology of India*, Vol. I. Calcutta, 1950, p. 469-482.

2. I am very much obliged to Dr. Allchin for permitting me to refer to his discovery.

3. I am very grateful to Prof. Zeuner for this information.

4. FOOTE, *Ippa*.

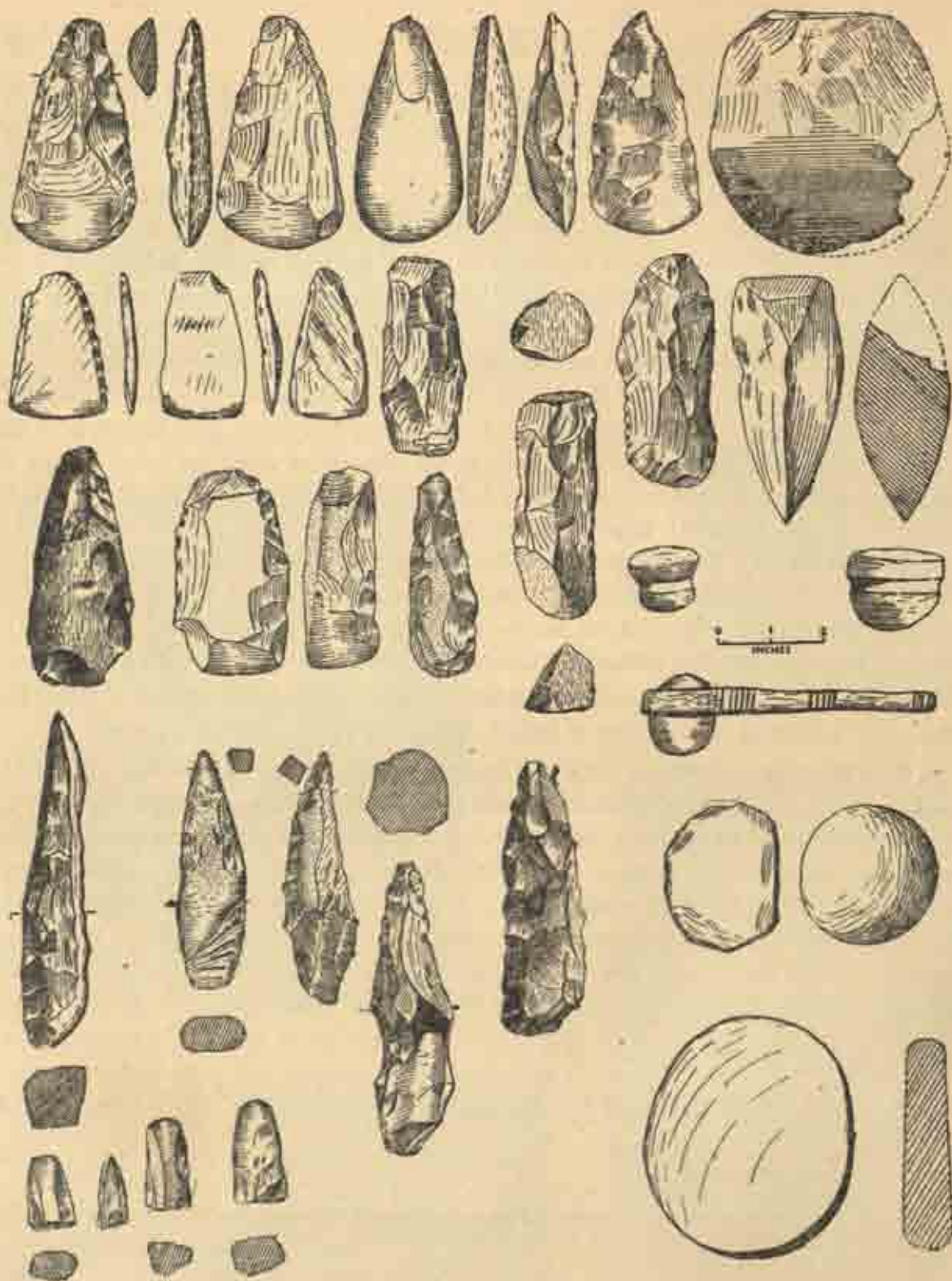


Fig. 22. Typical Neolithic tools from Sanganakallu Bellary District.

Outside the Central Deccan, the best evidence throwing great light on the antiquity of the Neolithic culture comes from Kili Ghul Mohammed. According to Fairservis (Jr.) who conducted the excavation, the lowest level belonging to Period J, belongs to the familiar Pre-pottery Neolithic cultures and a top level of this period is dated by C-14 to 3500-3100 B.C. In view of the very limited area of the dig, we cannot but agree with the excavator who says: "as these neolithic assemblages become better known, a sub-division of Period J, the addition of a Period K, or other changes can be expected".¹

Outside these areas of the Central Deccan, we have some satisfactory evidence from Burzhom in Kashmir and Kili Ghul Mohammed in the Baluchistan area. At Burzhom the section was as follows²:

III. Pottery of the 4th Century A.D.

II. Black polished pottery with incised designs resembling Jhanghar, Post-Harappan culture of Sind.

I. Neolithic celts, bone awls, pottery and cooking vessels, in a post-glacial loess. Unfortunately the excavators had no idea of the ceramic types they were talking of, and this is not helped by Piggot's view, accepted by Gordon and identifying their Black polished ware as N.B.P.³ The only solution seems to be a fresh excavation in the light of our recent knowledge.

In the rest of India, our position is still vague. A large collection from the Kaimur ranges and the Gneissic Bundelkhand and Baghelkhand lies in the British Museum. It is rather tragic that we have no trace even of the find-spots of the major part of the collection. With the peculiar complexity of Indian archaeology with its problem of survivals at different levels, this collection is worse than useless for any scientific purposes. Probably we have had enough of typology. This calls forth a new effort in the area, specially on account of their close affinities to the south-Indian Neolithic cultures. This suggests that there was a widespread Neolithic Culture covering a large portion of the sub-continent in an environment favourable for early agricultural communities.

But it should be noted that we have no evidence at present to decide the origin of this culture. Dr. Eugene C. Worman,⁴ on account of the comparative absence of celts in Western and North Western India, suggested a South-East Asian origin for the whole Neolithic complex of India.

1. FAIRSERVIS (Jr.), *op. cit.* p. 335.

2. DE TERRA & PATERSON, *op. cit.*

3. GORDON, D. H., *op. cit.*

4. WORMAN, EUGENE, C., "The Neolithic Problem in the Pre-history of India", *Journal of the Washington Academy of Sciences* 31, 1949.

A more systematic analysis of all available material from South-East Asia by Ahmed Hasan Dani, has shown that the typical pointed butt axe with lenticular or oval section is the characteristic Indian form. It does not occur in the continental S. E. Asia, where the characteristic type is a flat adze or faceted hoe with squared sides. This type seems to have infiltrated later into Eastern India.¹

Thus we see two distinct traditions in the Indian Neolithic and its later survivals. Into the widespread and chronologically earlier group, we see a distinctive infiltration of the South-East Asian. Dr. Dani has analysed the various elements that have penetrated into Eastern India including Assam from China and Malaya zones. But in the areas of isolation in Central and Southern India, some tribes have more or less managed to survive in a Neolithic economy.

1. I am very much obliged to Dr. A. H. Dani for permission to refer to his thesis submitted to the London University.

THE PROTO-HISTORIC ERA

When we leave prehistory, our story becomes more precise, since a large number of ancient sites have been systematically explored and excavated. Besides, culturally, we pass into the age of metals and the consequent socio-economic changes. The chief among these is the appearance of a large number of town and village sites in the main river basins of the country, probably supporting large-scale agricultural communities. The most significant feature of these proto-historic cultures in different parts of the country is the variation in their aesthetic and technological traditions, but at the same time showing certain mutual influences and contacts. The second anomaly, if one were allowed to use the term, is the diversity in the cultural stage in different parts of the country. We have the highly developed urban civilizations comparable to those of Western Asia in time and stature, while on the other hand we have the survival of primitive stone age cultures right into the early historic period. This differential development can to a great extent be explained by the ecology and geography of these cultural regions. We have already described the various perennial nuclear regions, where large-scale agricultural communities could flourish and carry forward the torch of civilization, and the areas of relative isolation where progress was somewhat halting. Finally, we discussed and defined the areas of repulsion or isolation, the blind alleys of civilization in India. Hence in the following pages, the development of material culture in these three categories of zones will be discussed in the light of the results of archaeological excavations and explorations, and other relevant ethnological data.

Important excavations near the ancient city sites of Taxila, Harappa, Mohenjo-daro, Ahichchatra etc., were carried out before 1944. But, as aids for reconstructing the cultural sequence in the country, we have to depend on a large number of vertical excavations carried out in different parts of the country. It must be said to the credit of Sir Mortimer, that the idea of correlating the regions to get at a historical sequence is his. The following list of excavated sites conveys a full idea of the nature of the evidence on which this reconstruction is built (Fig. 23).

Indus Basin

Kili Ghul Mohammed, Mohenjo Daro, Chanhu Daro, Kot-Diji, Rupar, Taxila, and a number of other sites where trial digs were conducted earlier.

Gangetic Valley

Jagatram, Hastinapur, Ahichchatra, Kanouj, Kausambi, Vaisali, Rajgir, Patna, Sonapur, Bangarh and Tamluk.

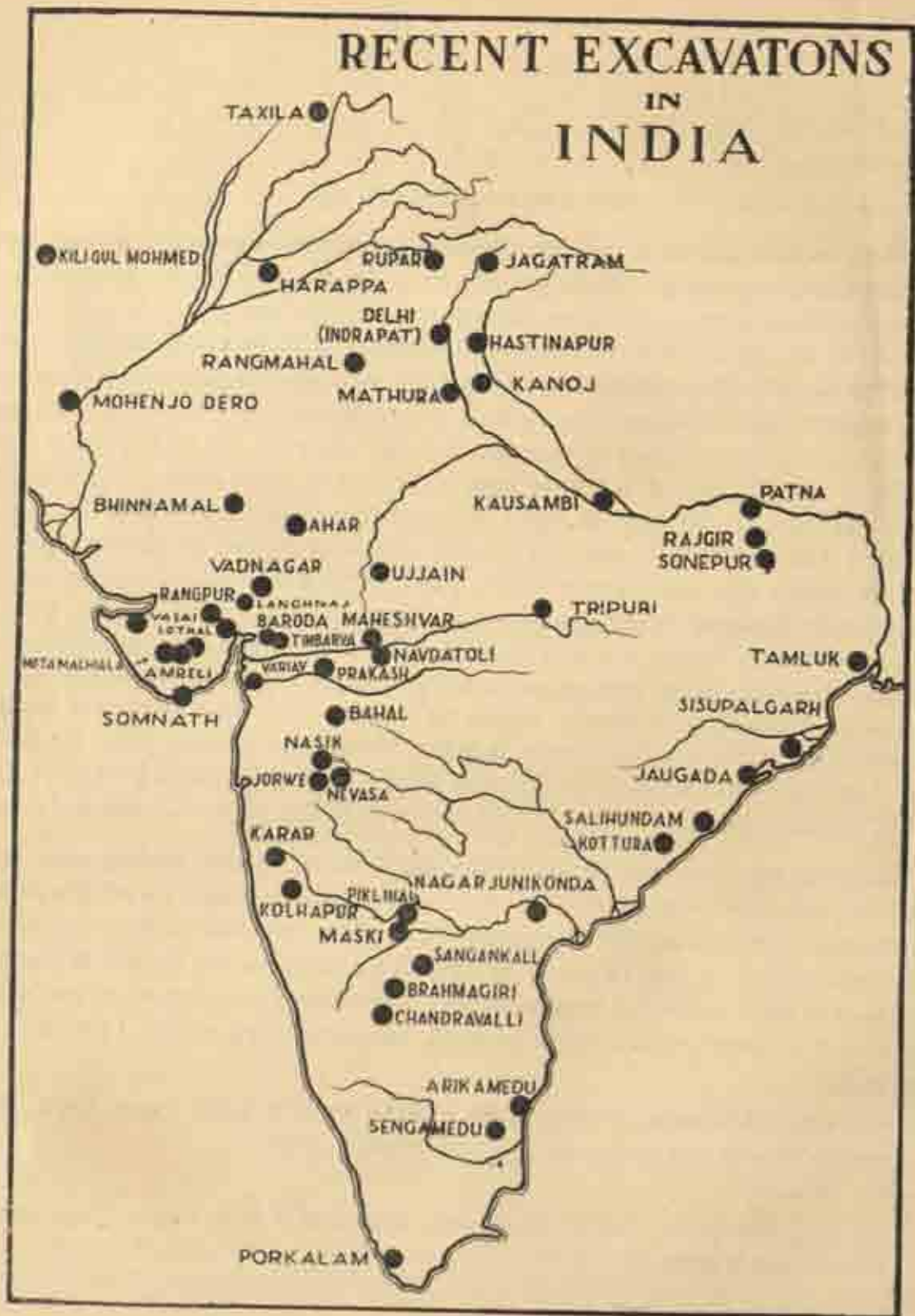


Fig. 23.

Malwa plateau and Central India

Maheshvar, Navdatoli, Nagda, Tripuri and Ujjain.

Gujarat and Rajputana

Lothal, Rangpur, Amreli, Somnath, Vasai, Amra, Lakhabawal, Langhnaj, Akhaj, Amrapur, Baroda, Variavi, Timbarva, Bhinnamal and Rangmahal.

Maharashtra

Prakash, Bahal, Nasik, Jorwe, Nevasa and Kolhapur.

Krishna Basin (Andhra-Karnatak)

Brahmagiri, Maski, Sanganakallu, Piklihal, Chandravalli, Nagarjunakonda.

Northern Andhra

Salihundam, Kottur.

Tamilnad

Arikamedu, Sanur, Sengamedu, Pallavamedu, Kunnattur.

Orissa

Sisupalgarh, Bhuvasuni, Jaugada, Dhauli.

These excavations were generally preceded and followed by explorations. For our purpose, it is not necessary, nor possible with such an amount of unpublished material, to go into the details of individual sequence. But taking a few stratigraphic columns from selected type sites, I propose to draw an outline of the development of material culture in the sub-continent. *In the course of this treatment, the emphasis will be laid on the development of large-scale agricultural communities, with more or less permanent settlements, and at the same time correlating the regions with the archaeological material (Fig. 8).* The details of sequence and chronology in individual regions may slightly differ, but the general picture emerges quite clearly. Again, it is necessary to repeat that this picture lacks many details and is very tentative. If this provisional interpretation is followed by a critical examination, based on more work, this survey will have more than fulfilled its purpose. Now let us briefly review the development in the areas.

Areas of Attraction**Indus Basin and the Indo-Iranian Border lands :**

It is most remarkable that the whole Indus basin should show a great homogeneity in its early cultures, whilst diverging in the later. In one way, as Spate has pointed out, one of the most

important structure lines of Indian historical geography runs from the divide between the Indus and Ganges systems (Bist doab, Sirhind, Ghaggar Delhi) along the Aravallis to the Gulf of Cambay. This would help us understand the significance of the distribution of the Indus Valley culture. At the dawn of civilization in Western Asia, we have indisputable evidence of better climatic conditions than today. In spite of the pioneer efforts of Sir Aurel Stein, Sir John Marshall, N. G. Majumdar, E. J. Mackay, Sir Mortimer Wheeler, Stuart Piggot, M. S. Vats, A. Ghosh and number of other explorers, the main sequence of cultures leading to the Harappan still lacks definition. *Certainties are few and the guesses are too many.* It is most unfortunate that so few of the large number of sites have been systematically excavated. Most of the correlations are based on fabrics and decorative patterns of pottery from the surface and other associated objects, but very rarely from excavation. It should be clearly understood, that these provide only a series of terminal and central dates, and detailed chronology and correlation will have to await further excavations. A heroic attempt has been made by D. H. Gordon to introduce some order into this chaos. But the sequence can only be confirmed by intensive work in Pakistan.¹

During the last few years, important work carried out by Fairservis (Jr.),² and F. A. Khan³ in Pakistan and Casal in Afghanistan⁴ is helping us to get a somewhat clearer picture, and if these efforts are continued, the prospects are very encouraging indeed. The broad studies of Piggot,⁵ Wheeler,⁶ McCown,⁷ Gordon⁸ and Ross⁹ have laid the foundations for the survey attempted here. The Late Prof. Childe, in his *Prehistory of European Society*, faced with the problem of slightly divergent groups of cultures, which are associated with each other and with different types in each province, suggested the use of the term "cycle of cultures". The recent studies of Fairservis in the Baluchistan area show extensive contacts between the various divergent groups that are spread over the Indus basin and the Indo-Iranian border lands. Hence it is proposed to attempt a critical survey of the culture sequence, after dividing them into three culture cycles :

1. Pre-Harappan
2. Harappan
3. Post-Harappan

1. GORDON, D. H., "Pottery Industries of the Indo-Iranian border", *Ancient India*, No. 10-11, 1954-55.
 2. FAIRSERVIS (Jr.), WALTER, A. *Excavations in the Quetta Valley West Pakistan*. Anthropological papers of the American Museum of Natural History. Vol. XXXV, Pt. 2. New York, 1956.
 3. KHAN, F. A., At a press conference at Karachi on 26th Feb., 1958—Release by the Press Service of Pakistan.
 4. CASAL, J. M., "Mundigak", *Illustrated London News*, 7th May, 1955. pp. 832-35.
 5. PIGGOT, STUART. *Prehistoric India*. Pelican book, 1950.
 6. WHEELER, MORTIMER. *The Indus Civilization*. The Cambridge History of India—Supplementary Volume. Cambridge, 1953.
 7. ERICHH, ROBERT W. (Ed.), *Relative chronologies in Old World Archaeology*, Chicago, 1954.
 8. GORDON, *op. cit.*
 9. ROSS, E. J. "A chalcolithic site in Northern Baluchistan", *Journal of the Near Eastern Studies* V, 1946.

Pre-Harappan Cycle

Before we proceed further, it is better to remember a few general principles that guide our approach to the problem. Firstly, we have already emphasized, at great length, the environmental diversity between the main alluvial plain of the Indus and the hilly areas to the west, which separate it from the Iranian plateau. Fairervis has well-compared the Indus plains to a beach, and while the upland plateaux constitute the surf, the hills behind are the waves.¹ "The arid basins and hills of Baluchistan," writes Spate, "form the eastern portion of the great Iranian plateau, sharply marked off from the Indus plains by the Kirthar and Sulaiman ramparts. Looped between the Toba Kakar and Sulaiman ranges lie the trellis-patterned basins of the Zhob and the Beji : nested folds of Cretaceous and Eocene limestones and sandstones producing in Loralai an extraordinary landscape of innumerable scraps and hogbacks, small plateau and mesas, steep craggy outcrops with talus slopes. and set in these arid hills, grey and dun and ochre, a few greener patches in small alluvial and detrital basins" (italics mine).

It is no wonder that these oases of plains among the hills supported the first peasant communities who brought to India some of the elements of the higher cultures from Iran. The valleys of Zhob, Beji, Pishin Lora, Dasht, Kel, Hingoli and Hub, in addition to the main stream of the Indus supported various cultures which can only be distinguished by their pottery industries, and a few other traits like burials etc. The careful comparative studies of Piggot, Gordon and Fairervis have shown that all these cultures have contacts between themselves, and where stratigraphic evidence is available even overlap with each other. As already explained, our evidence mainly consists of large surface collections, interrelated with the help of fabrics and designs of pottery. A tentative relative chronology is provided by a few trial excavations and the remarkable scraping of the sections as at Ranaghundai. A new light has been shed by the latest excavations, where the evidence of Radio-carbon dates has been made available to us. Hence the following account is a mere summary of the works already alluded to. Besides it is not possible, nor intelligible at this stage of our knowledge, to give a detailed catalogue of ceramic forms and patterns. But for convenience, the diagrammatic sketches of Stuart Piggot and a few distribution maps of Wheeler are reproduced here. (Figs. 24, 25.).

The earliest culture identified is a Pre-pottery Neolithic culture with flint chips and Fairervis suggests a long Early Pre-historic period. The most interesting account of their economy comes from the animal remains. They already domesticated sheep, goat and an ox or bull.

1. FAIRSERVIS *op. cit.* p. 183.
2. SPATE *op. cit.* pp. 424-25.

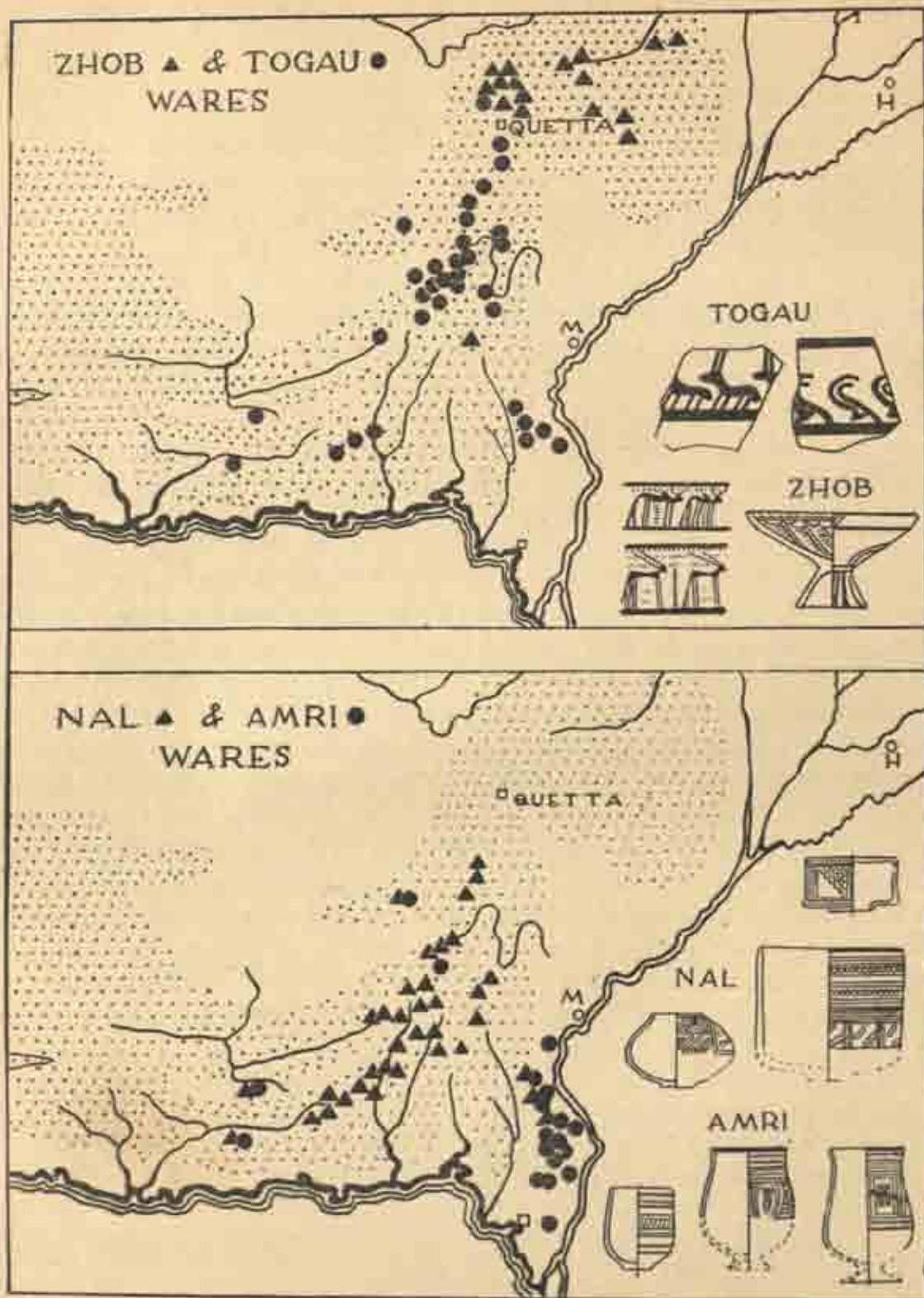


Fig. 24. Maps of Village-cultures of Baluchistan. (After Wheeler)

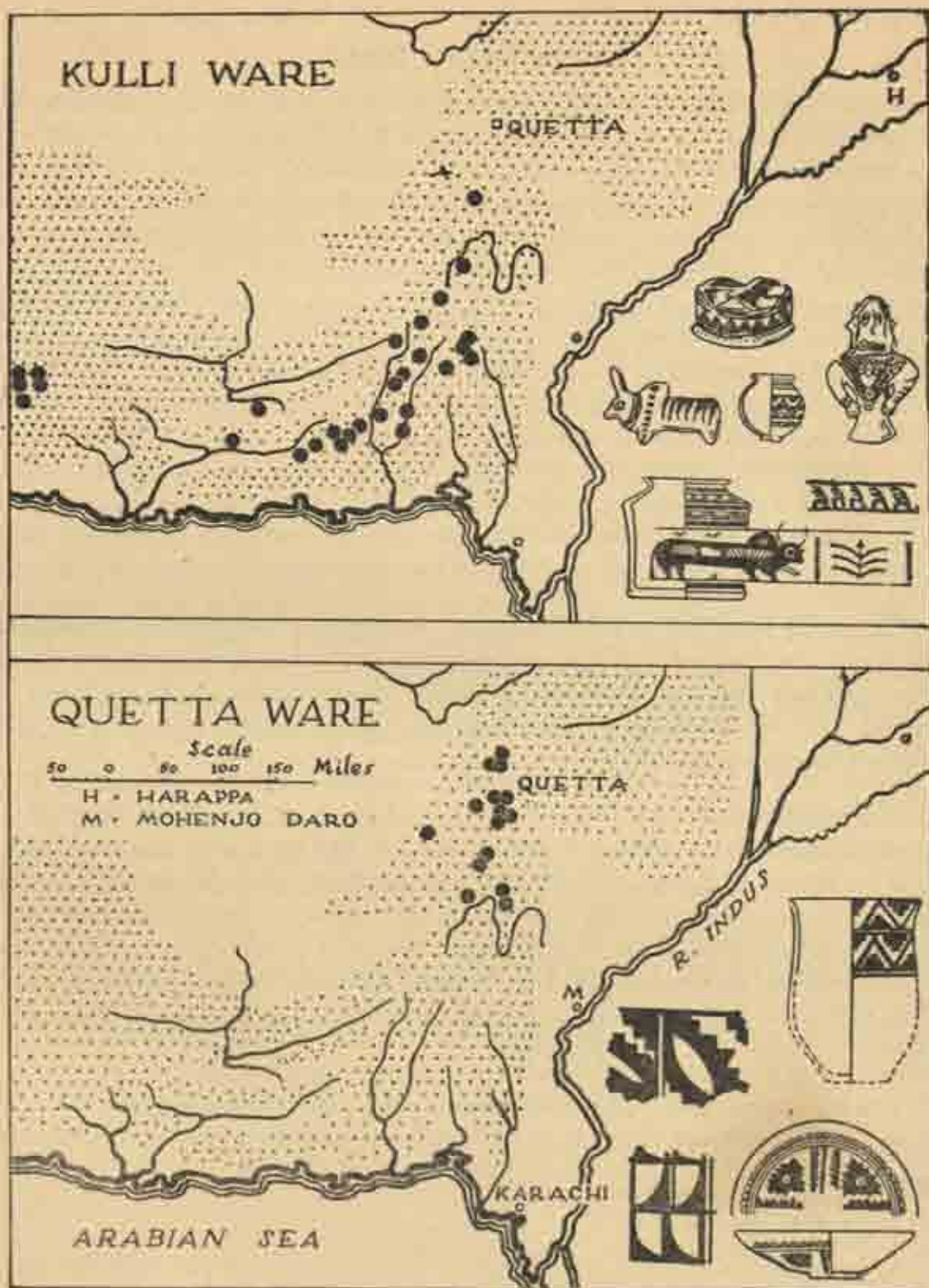


Fig. 25. Maps of Village-cultures of Baluchistan. (After Wheeler)

" Surprisingly, there was no greater representation of wild fauna in Period J " (K.G.I.). They were familiar with the Indian bull, but its teeth found in the excavation were somewhat larger than the normal teeth of *Bos Indicus* and a suggestion has been made that the Brahma bull of the Indus valley is a cross-breed of *Bos Indicus* and the West Asian Urus. They were also familiar with some species of *Equus*.¹ Thus it is very interesting to see the spread of the 'incipient agricultural communities' and pastoral herdsmen in the 4th Millennium B.C. The tools included bone awls, blades varying in length between 3.4 to 5.8 cms., stone scrapers and a limestone slab with a triangular cross-section, probably used " as a grind stone ". Finally, according to the excavator, " as these neolithic assemblages become better known, a sub-division of Period J (K.G.I.), or the addition of a Period K, or other changes can be expected ".² Technologically this phase is comparable, according to Childe with the Pre-pottery and Early Neolithic cultures of Jericho, Jarmo, Hassuna etc.³ A piece of Charcoal, from one of the upper levels of this phase, gave a C-14 date of 5300 plus or minus 200 i.e. 3500-3100 B.C., thus pushing the beginnings of agriculture to the early 4th Millennium or even 5th Millennium B.C. Further excavation is needed to throw additional light on this very early culture of the Indo-Pakistan sub-continent.

The second period has a wider distribution. At Kili Ghul Mohammed, the second phase (II) is characterized by hand made wares including basket marked pottery with a fine wheel-made pottery. All agree that these crude wares are akin to Rana Ghundai I wares (with very little decoration). At Rana Ghundai, Ross found the bones of the domesticated horse, *Equus Caballus* and Piggott suggests " a nomadic horse riding herdsman " as the new settlers.⁴

The third period, corresponding to K. G. III, is characterized by the Black-on-red slip and red-painted wares (type A wares of Ross R. G. II). In the Quetta valley, there are nearly 17 sites of this phase. At Ranaghundai, phase II is marked by the advent of new people who built houses with boulder footings. The most characteristic pottery is the so-called " Bull ware " which has also been found at Zhob and Surjangan. The other animal painted is the black-buck. It is noteworthy that the Loralai region is not the region of black-buck and the presence of humped ox, *Bos Indicus* also suggests an eastern rather than a western influence, indicating the possibility of settlements further east in the main basin.

This phase shows close affinities to Hissar I. This contact with the regions further east is clearly definable in the next phase K. G. IV. " Rana Ghundai III 'a' and 'b', with their Amri

1. FAIRSERVA, *op. cit.* 382.

2. FAIRSERVA, *ibid.* p. 335.

3. CHILDE, *op. cit.*

4. PIGGOTT, *op. cit.* p. 121.

affinities", says Fairservis, "are certainly akin to Kili Ghul Mohammed IV and Damb Sadaat I"¹ This period is very important, as it links a number of other sites in Baluchistan and Sind. This phase shows affinities to Kechibeg, Amri, Togau and Sur Jangal. A sample of charcoal from Damb Sadaat I gave C-14 range between 2400-1900 B.C. (4150 *plus or minus* 250).

In view of the extent of these cultures which begin to spread down into the plains, it is possible to visualise a series of cultures. Similarly the relation of the group of cultures of Nal and Nundara type with Amri links up the entire cycle of cultures, which preceded the Harappan in the Indus basin and the Indo-Iranian border lands.

Coming further east, we find Amri providing a link with Harappan. While the former appears to underlie the latter at Amri, Lohri, Ghazi Shah and Pandiwahi, there is an evidence of an overlap or mixture at Pai-jo-kotiro in the Gaj Valley. But the more crucial culture, which shows more Harappan traits is that of Kulli *i.e.*, the presence of goddess figurines, bull figurines, and pipal leaf motif on pottery. In view of the curious combination of Harappan motifs, as well as the mixture of bulls, ibex, sigmas and comb patterns, Gordon thinks that "Kulli culture was of considerable duration and it had its contact with Harappa." According to Casal,² a culture with affinities to Kulli has been dated to 2650 *plus or minus* 300 B.C. In view of the great distance of Afghanistan from the sites we have been dealing with, one has to be cautious. But on the whole it again emphasizes that by the first half of the III Millennium B.C. the whole cycle of Pre-Harappan, peasant cultures were flourishing all over the Indus basin.

Piggot, Gordon and Fairservis have demonstrated the indebtedness of these cultures to their neighbours in Iran. The Quetta valley and the Pishin plain are traversed by major routes linking Baluchistan, Sistan, and Sind. It is, therefore, not unexpected that all these isolated river valleys, dissected by hills, should show contacts as well as divergences.

Hence we can draw for ourselves a picture of these roving herdsmen and cultivators trying to exploit the little green valleys among these deserts of barren rock. In view of the present-day aridity and the precarious life which these areas support, Stein paid special attention to this environmental problem. He noticed large series of stone-built artificial dams and terraces known as *Gabarbands*. There is no knowing whether some of these belong to these early agricultural communities. "Yet," writes Piggot, "their presence is important in indicating greater rainfall in antiquity, and it is by no means improbable that they do, in fact, date back to the Pre-historic occupation of the Baluchi Hills"³ Dr. Hora has shown, on the basis of his study of fish draw-

1. FAIRSERVIS, *op. cit.* 354.

2. CASAL, *op. cit.*

3. PIGGOT, *op. cit.* p. 70.

ings on Nal Pottery "that wetter conditions are likely to have prevailed in the Baluchistan hills during the period of Nal culture".¹

The complex pattern of multiple origin, or localization or Indianization of certain foreign traits, is emphasized by Fairservis.

"The assemblages we have described were primarily derived from Iran. It is true that some design elements on the pottery were derived from designs characteristic of the Indus valley, such as the *Brahma bull* and *Pipal leaf*, but in addition, the desert ibex and the desert antelope of the Iranian plateau, are also depicted. The Iranian orientation is therefore clear. The Iranian character of these Baluchi assemblages was probably further reinforced by continued and augmented contacts with Iranian cultures in Sistan and Southern Baluchistan. The wide distribution of characteristic wares, such as those of Amri and Quetta, indicates the extent of the contacts".²

It is these very contacts that have helped us understand the relations between the various cultures. Similarly, the detailed study of the blade industries suggests the infiltration of the mass technique of crested guiding ridges, which appears for the first time at Jericho in the Neolithic levels. Its further spread eastwards as well as westwards has been pointed out by the writer.³ Hence this technique which appears in the Harappan culture might have been brought into India by some of these communities. In this connection the long blades (5.8 cms.) of Kili Ghul Mohammed I are worth watching.

Harappan culture

As one moves eastwards, leaving these inhospitable highland valleys, into the plains of the Indus, one sees a marked change: the higher cultures flourishing in the main valley of the Indus. "The Iranian aspect of the society has disappeared", says Fairservis, "and another influence, the Indian in ritual, artifacts, architecture can be clearly discerned." But unfortunately for us, the Pre-Harappan cultures in the main basin are yet shrouded in obscurity. Earlier, Mackay noticed sherds of the Quetta wet ware in the "lower levels" of Mohenjo-Daro.⁴ Similarly Wheeler found a few sherds in: (1) occupation layer underlying the defences, (2) from the material accumulated during the construction, and (3) from the material of the rampart and incidental platforms. They show affinities to pottery from Periano Ghundai, and Pre-Harappa

1. Hora, S. "Fish Paintings of the third Millennium B. C. from Nal (Baluchistan) and their Zoo-geographical significance" *Memoria of the Indian Museum*, XIV, No. 2, pp. 73-84. Calcutta, 1256.

2. FAIRSERVIS, *op. cit.* p. 360.

3. SUBBARAO, B., "Chalcolithic Blade Industry", *op. cit.*

4. MACKAY, E. J. *Further excavation at Mohenjo-Daro*, Vol. II, pl. 67, Nos. 1 and 2; Vol. I, p. 184.

layers of Amri. "In these groups, the contrast, between the true Harappa sherds introduced at the time of construction, and the non-Harappa sherds of the preceding or lingering occupation, is so marked as to indicate the probability of a basic difference of culture. . . . The provisional inference, is that the building of the defences marked the first impact of Harappa culture on this site, and that the builders were preceded hereby a town—or village—occupation representing a variant or even alien culture".¹

Similarly F. A. Khan claimed a mature Pre-Harappan culture at Kot-Diji² in the Khairapur district of Sind. "Indeed there are strong indications to support the view that the early settlers whom we shall call Kot-Dijians, possessed a highly developed culture of their own, from whom the people of Harappa and Mohenjo-Daro borrowed certain artistic and other ideas including the systems of town-planning and fortifications, which are the most extraordinary systems known to Indo-Pakistan pre-history". About the pottery, he reports that there is difference in fabric, form and decoration from the Harappan. Pending further studies it is difficult to make any comment on this. *The possibility of a late movement of the Harappans southwards into Sind cannot be over-ruled.*

Let it be stated straight away, that in the present stage of our studies, the formative stages, if any, of this great Urban civilization have yet to be explored. Even the so-called "Pre-Harappan" Kot-Diji casts the same burden on the archaeologist. Hence the relation of Mohenjo-Daro and Harappa to the "Upland communities" of the Pre-Harappa period, cannot be specified, in spite of certain common artistic and ceramic elements.³ At present it appears to us like Minerva born in a panoply. As Sir Mortimer put it, "the integrity of the Indus civilization stands unchallenged". The greatest challenge to the archaeologist, is to explain the origin of this great urban civilization, with its "impressive bulk" of inter-relationship with those of Western Asia and its "abundant and significant variation" in its sculpture, art, seals, terra-cottas, language and script.⁴ Only the spade, discriminately used, can cut this Gordian knot, and help us understand this jumble of words without a meaning. The true epi-centre of the Harappa culture needs to be ascertained.

1. WHEELER, R. E. M. "Harappa, 1946: The Defences and Cemetery R. 37", *Ancient India* No. 3, New Delhi, Jan., 47 p. 91.

2. At a press conference on February 26th, 1958 at Karachi and circulated by the Director General of Archaeology in India, New Delhi.

3. The relation between the Upland communities and the Urban folk of the river basins requires further investigation. But it is very interesting to recall in this connection the position of the "Fertile Crescent" and the Sumerian and Babylonian plains. There the 'incipient agriculturists' did not move into the plains till their collective organization was developed to the extent of handling problems of irrigation after its initial discovery.

BRADWOOD, R. J., *Near East and the Foundations of Civilization*, Eugene, Oregon, 1952.

4. WHEELER, MORTIMER, *Indus Civilization*, Supplement to Cambridge History of India, Vol. I, 1954, p. 94.

In recent years, with the remarkable discoveries of Lothal in Kathiawad by S. R. Rao, we know the true extent of the Indus valley civilization from the foot-hills of the Himalayas to the south coast of Kathiawad. Similarly the studies of Fairservis throw a new light on the chronology. As a result of careful assessment, Dr. Wheeler suggested the limits of this great civilization between 2500 and 1500 B.C. From the appearance of Harappan influences at Damb Sadaat in phase III, dated to 2050 *plus or minus* 200, Fairservis rightly comments: "The archaeological evidence at this stage, indicates that the Harappan civilization was in swing during the period represented by Damb Sadaat II—III in the Quetta valley, and Surjanganal—Rana Ghundai III in Loralai, that it was expanding northwards into Baluchistan in Damb Sadaat III times and after the occupation of Surjanganal. . . . This would mean that Harappa was occupied after 2000 B.C. Considering the chronology as a whole, it seems that 1500 B.C. for the end of Harappan is too early. A date nearer 1200 B.C., or later is probably more accurate since it allows for the not inconsiderable expansion, and establishment of that civilization in areas remote from its apparent place of origin".¹ In his latest work, he suggests, that in view of the Carbon dating, he would put the limits of the Harappan from 2100-1200 B.C.² In view of the Saragon link, this revised date can be applied only to the Baluchi area, on the periphery of the Indus Basin. Does it represent a back wash or a survival?

Considering the wide extent of this civilization in space, we cannot accept any single arbitrary date for the whole area. It is not improbable that the Harappan might have survived in the peripheral zones of Baluchistan, W. Rajaputana for a longer time than in its epi-centre. For example, we have such an evidence in its southern periphery. With the excavations at Lothal, Rangpur, Somnath, Amra and Lakhabawal, we have very good reason for believing that Harappan survived in a pure form for a longer time in Kathiawad, and continued in a decayed State with new elements right upto about 500 B.C. We shall discuss this in greater detail, while dealing with Gujarat. (See Chapter VII)

Post-Harappan cycle

We are as much ignorant about the origin of the Harappa, as about its final extinction. But two remarkable facts stand clear: the advent of a new people and the desiccation of the Rajaputana desert. The later half of the II Millennium B.C. was a period of turbulent movements of peoples, destruction and the appearance of new languages all over Western Asia. Right from the Anatolian plains of Turkey, this is due to the advent of Indo-Europeans and India has not

1. FAIRSERVIS. "The chronology of the Harappan civilization and the Aryan invasions". Recent archaeological research. *Mon. LVI* Art. 173. Nov. 1956.

2. FAIRSERVIS. *op. cit.* p. 357.

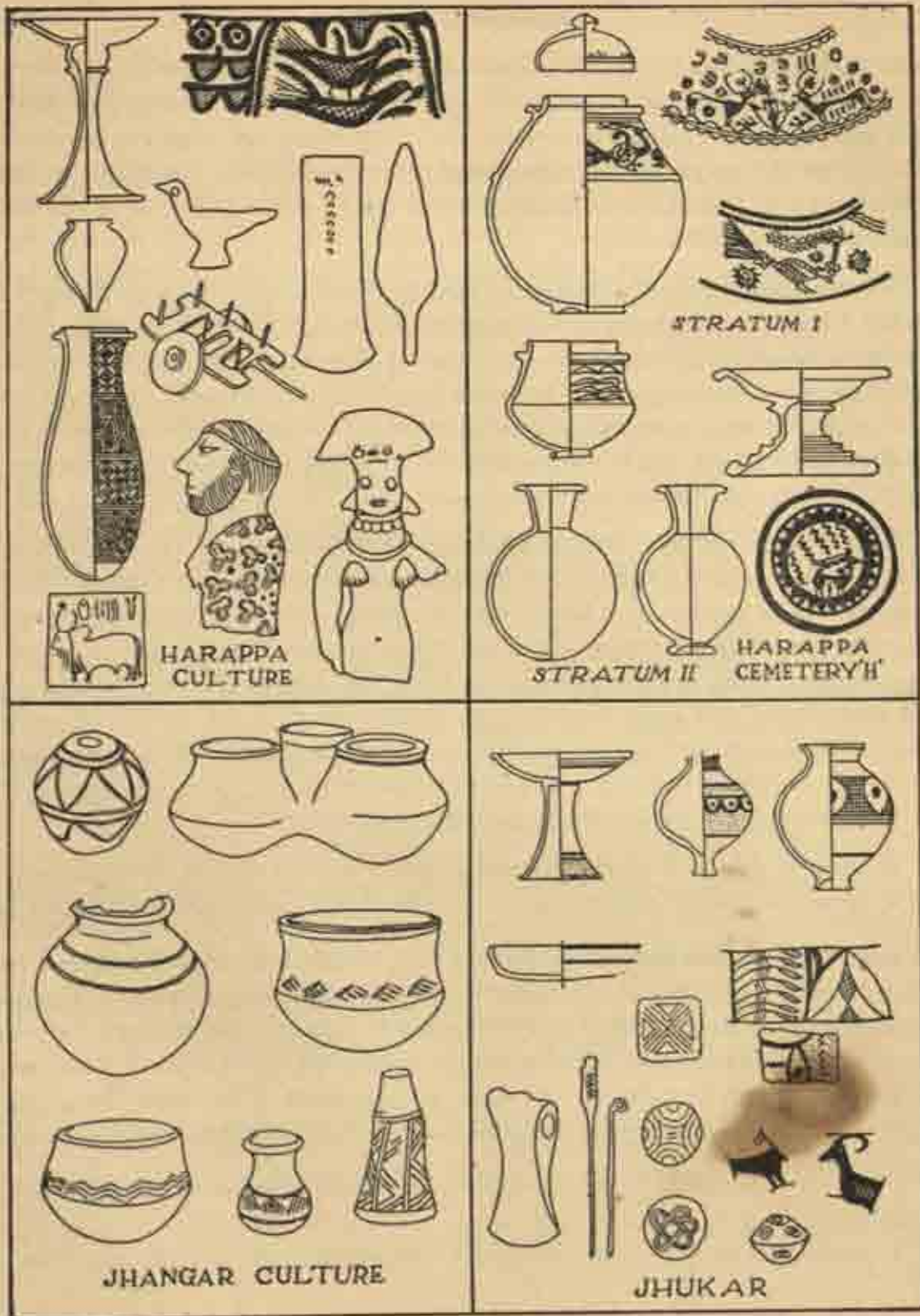


Fig. 26. (After Piggot)

escaped this impact. But it is necessary to remember one important fact, that these violent semi-nomadic people adopted a major portion of the cultural traits of their victims, whom they conquered and subjugated. *Thus all over the Old World, the Aryans have proved to be vague and obscure, though the legacy of their languages has contributed to the history of civilization.* Hence it is not out of place to discuss a few points about the authors of the destruction of the Harappa civilization and the Aryans.

Wheeler, Piggot and Childe, built up an elaborate hypothesis, based on the excavations conducted by Wheeler, at Harappa in 1946. He attributed the destruction to the authors of the Cemetery-H and adduced literary evidence to support the fact that the Rigvedic Aryans destroyed these cities. The first part of his contention that the Cemetery-H people destroyed Harappa is correct. But his more controversial identification of Cemetery-H folk with the Aryans cannot be accepted at the present stage of our knowledge since their pottery has not been identified with certainty from the rest of the Indus basin.

Heine Geldern¹ and more recently Fairservis² have identified the other Post-Harappan culture of Jhukkar with the Aryans. Heine Geldern depends on the animal headed pin, trunion axe, bronze dagger from Fort Munro and the antennae sword, which he derives from Luristan, for his contention that the Aryans moved into India about 1200-1000 B.C. According to Fairservis pottery found at a number of sites—Dabar Kot, Moghul Kala and Kaudani (with broad black lines of black and red running horizontally above the body of the vessel, loops and hatching along the rim, and various geometric and curvilinear patterns, and belonging to Rana Ghundai IV), has Jhukkar affinities. Since the Jhukkar culture overlies the Harappan at Chanhudaro, the stratigraphic relation also supports their hypothesis.³

However, in spite of a slightly greater distribution of these Jhukkar and its related industries, it also suffers from the same fact *viz.* its discontinuity further east into the Gangetic basin.

Finally, a third claim has been put forward by B. B. Lal on the basis of a very substantial body of evidence. If the story of the Aryans, as revealed by our literary sources, has any validity, it speaks of a people who established their first homeland in the valleys of Sarasvati and Drishadvati after consolidating their hold in the upper valleys of the Indus basin. It was in this Brahmavarta that they gave us the Rigveda. Gradually, they spread into the Gangetic basin. On the strength of his excavations at Hastinapur and his extensive exploration in the upper Gangetic basin,

1. HEINE GELDERN, ROBERT. "The coming of the Aryans and the end of the Harappa civilization", *Man*, LVI, Art. 151, Oct. 1956.

2. FAIRSERVIS, 1956. *op. cit.*

3. MACKAY, E. J. *Chanhu-Daro excavations—1935-36*. American Oriental Series 20. New Haven, 1943.

he found a pottery called the "Painted Grey Ware at the lower levels of a number of sites, associated with Indian literary tradition. Since these settlers formed part of the early Aryan stock in India, he ascribed this ware to the Aryans. "May it, however, be emphasized", warns the author, "that the evidence is entirely circumstantial and until and unless positive ethnographic and epigraphic proofs are obtained to substantiate the conclusions they cannot but be considered provisional."¹

Before we close our summary of the problem of the Aryans, a slight digression into the Harappan will not be out of place. T. N. Ramachandran has put in a very powerful plea for identifying the Indus valley civilization itself with the Aryan. While he claims to have deciphered the script on the seals, he has continued the line of studies started by him earlier, the interpretation of art motifs with the help of literature. He interprets the seals—their pictographs, scriptographs and the script—with the help of corresponding verses from the Rigveda.² This is in line with Hronzy's earlier attempts, who also read the Indus valley language as Indo-Aryan.³ As already stated earlier, this hypothesis cannot be accepted nor completely refuted, till the script is deciphered with the help of some bi-lingual seals or inscriptions. It is therefore, a problem of methodology.

Thus this problem of the Aryans has come to the forefront and at the present stage of our knowledge it is impossible to give a final answer. Of all the three or four hypotheses (including Ramachandran's) the best from the archaeological point of view is that of the "Painted Grey Ware folk". Further discussion of this problem will be attempted, after a consideration of the other areas, in Appendix 'I'.

Our knowledge of the Upper Indus basin, above the confluence of the five great rivers of the Punjab and the Ghaggar, is clearer. Commanding the main communications into the Sub-continent, and with a better rainfall, on account of its existence at the foot of the Himalayan chain, and drained by rivers fed by the ice fields, the Punjab continuously supported large scale agricultural communities. We do not yet know the exact authors of the destruction of the Indus civilization. Nor do we know much about the Cemetery-H people, who have been credited with this role, unless they be one of the large groups of Post-Harappan people who moved into the

1. LAL, B. B. "Excavations at Hastinapura and other explorations in the Upper Ganga and Yamuna basins 1950-52. *Ancient India* 10 & 11, New Delhi.

2. RAMACHANDRAN, T. N. *Presidential Address of the Ancient India section, at the All India History Congress held at Agra—Dec. 1956.*

3. HRONZY, BEDRICH. *Ancient History of Western Asia, India, and Crete*. Translated by Jindřich Prochaška. Prague. 1952.

plains of the Indus. Leaving these gaps, which the spade alone can ultimately fill up, we go little east towards the Indo-Gangetic divide. The explorations of Shri Ghosh and the excavations of Dr. Y. D. Sharma¹ at Rupar and of Shri B. B. Lal at Hastinapur have opened a new chapter in Indian archaeology. We are well on the way to bridge this yawning gulf between the Harappan and the Early Historic cultures of India. The rough outlines are emerging and only the links will have to be forged.

Following the Harappan, we have probably, what Ghosh has called the "Sothi Culture",² from a number of sites in the Drishadvati Valley, characterized by the widespread occurrence of a crude ill fired pottery, which for no better reason, has been called the "Ochre washed ware". While some forms show affinities to Harappan, the fabric is closer to that of Hastinapur, Bhadrabad and other copper hoard sites in the Gangetic basin. Since its stratigraphic relation to either the Indus or the Gangetic valley cultures yet remains to be established, it is better to be wary.

But of all the various Post-Harappan cultures, the most widely spread, and the movements of which can be directly traced into the Gangetic basin, is that of the Painted Grey Ware culture. At Rupar,³ on the Sutlej, the habitation begins with a Harappan and is succeeded after a distinct break by the Grey Ware culture. This sequence neatly ties up with the Early historic period, characterized by the advent of the Gangetic valley Northern Black Polished Ware. This Grey Ware culture seems to have a wide distribution in the Valleys of Sutlej, Sarasvati and Drishadvati in the Punjab-Bikaner area. We eagerly await some work on the other side of the Pakistan border.

Finally, with the excavations at Rupar and Hastinapur, the gap (which is dramatically called the "Dark Period") is closing up. Ghosh well summed up the position of Grey Ware-Harappa relations when he said: "While it is admittedly premature to hold that the latter people (Grey Ware folk) were no other but the Aryans, it is doubly premature to say that the Aryans had nothing to do with the disappearance of the Harappans. Even if that be the future consensus, the possibility will remain that the descendants of the Harappans, after the end of their glorious days, lived somewhere in India, still holding to their culture, if in a modified form, to contribute its traits to the pattern of Indian culture, either directly or through the Aryans or some other agency. Otherwise, the existence of Harappan elements in Indian culture will remain unexplained".⁴

1. Sharma, Y. D. "Past Patterns in Living as Unfolded by Excavations of Rupar" *Lalitkala* Nos. 1 and 2. April 1955 to March 1956 pp. 121-129.

2. Ghosh, A. Presidential Address, Archaeology Section, XVII Session, Oriental Conference, Ahmedabad, 1953.

3. Government of India, *Indian Archaeology 1953-54. A review published by the Archaeological survey of India, 1954.*

4. Ghosh, A. "Notes", *Ancient India* No. 10 & 11, 1954-55. p. 3.

Yes, it survives. In the pivotal point — the Proto-historic tri-junction—the old Brahmavarta (Sarasvati and Drishadvati valleys) and north-eastern Rajaputana, all the streams of Proto-historic cultures mingle, and our immediate task is to explore for overlaps and contacts. This is very well borne out by the recent discoveries at Ukhliana, near Meerut, of a thick red ware of " Harappan fabric " with typical terracotta cakes. A few sherds of the same type were also found in the Grey Ware levels of Kausambi. But for the cakes, the only other identifiable type is the dish-on-stand. So the possibility of these being either very late Harappan or being derived from the other Post-Harappan cultures has to be stressed. Kausambi seems to carry some of the architectural elements of Harappa like the fortifications and corbelled drain ? From this point of view the occurrence of Grey Ware and black-and-red ware at Ukhliana make it very interesting. The survival of so many Indus valley symbols on our Punch-marked coins remains an enigma. Similarly the clear evidence for slightly later dates for the Harappan, and the close inter-links of its direct descendant Post-Harappan cultures of Kathiawad, with the Pre-N.B.P. proto-historic Chalcolithic cultures of Central India, suggest the possibility of a Harappan survival in the peripheral regions to the east, west and south of the main Indus basin. *Thus Harappan might have direct contacts with some of the Post-Harappan cultures of the sub-continent.* Does it not fit in with the geographic factors already enumerated ?

Finally, the story of the Indo-Iranian border lands is one of continuous contacts between both the countries, and it also serves its function as a bridge between the cultures of Iran and India. These cultural influences need very careful scrutiny and since we know sufficient surface-material, the more urgent need seems to be stratigraphic excavations. Col. Gordon has shown the close affinities of the material from the Moghul Ghundai cairns and Sialk B cemetery (about 1000 B.C.).¹ More evidence of this late contact with Iran has been brought forth by Beatrice de Cardi from Londo and other sites in Baluchistan. As Stuart Piggot puts it :

" It looks as though contacts between India and the West were either continuous for nearly a millennium after 2000 B.C., or more probably there were two movements of peoples from Northern Persia towards India, one (Shahi-tump, Jhukkar etc.) fairly soon after 2000 B.C., (the Indian evidence implies that it cannot be earlier), and the other (Moghul Ghundai, Jivanri, Londo) round about 1100 or later ".² (See Fig. 27)

Gangetic Basin

Now when we cross the Indo-Gangetic divide, we leave the Harappan in space and time. The most important, and intriguing relics of this region are the enigmatic copper hoards from

1. GORDON, D. H., " Sialk, Giyan, Hissar and the Indo-Iranian Connections ", *Man in India*, XXVII, 1947, pp. 195-241.

2. Review of the above paper by Stuart Piggot in *Antiquity*, XXIV, No. 96, Dec. 1950.

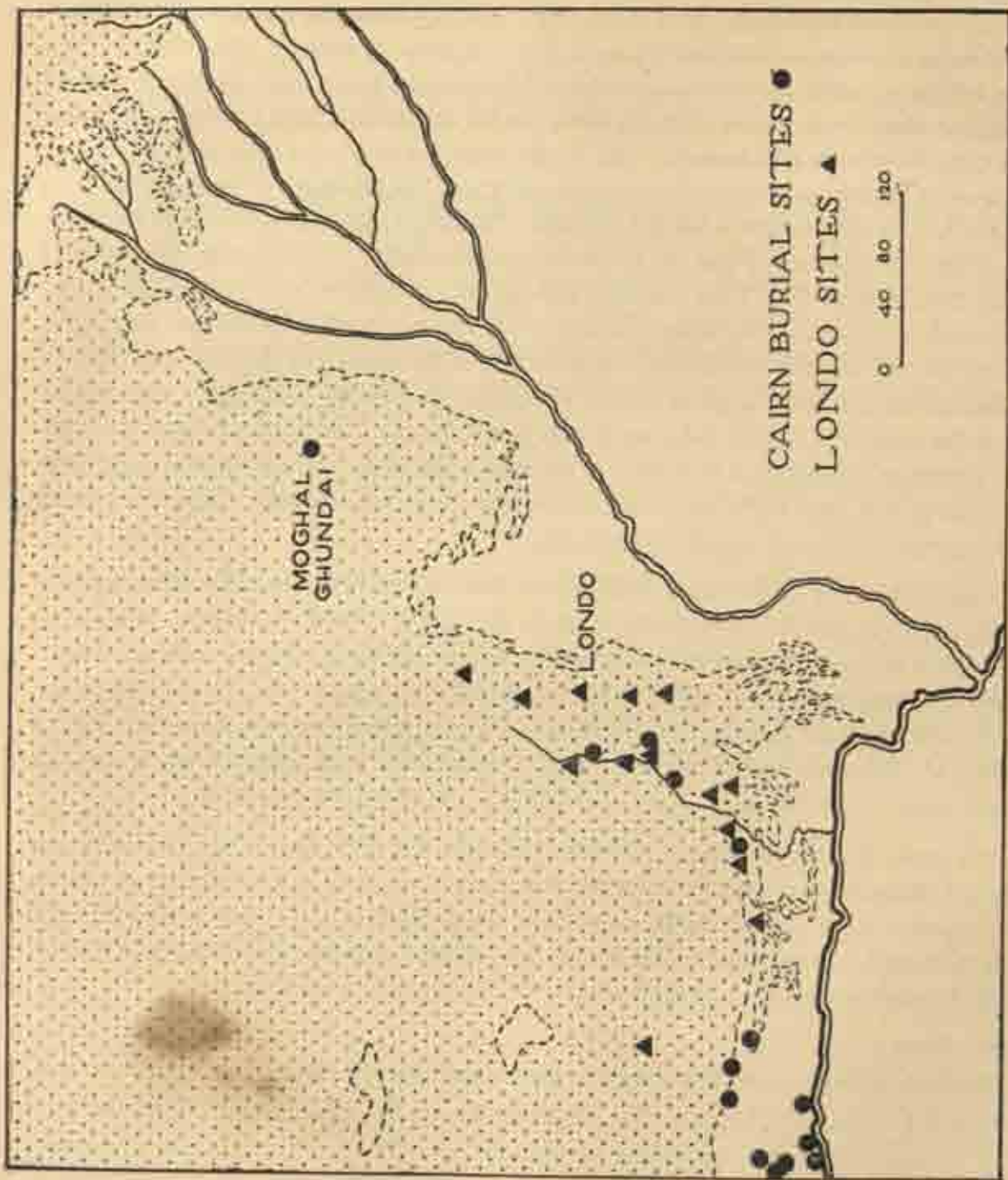


Fig. 27. (After Gordon)

the Gangetic basin, studied by Heine Geldern,¹ Stuart Piggot,² D. H. Gordon,³ and B. B. Lal.⁴ Lal, by a fine typological analysis has shown that they differ from the Western groups and also points out the circumstantial but yet unproven association of the so-called "Ochre washed pottery" with these hoards. The reported discovery of Grey Ware at the hoard site of Pariar in Unao District, U. P. is encouraging and I hope it will receive early attention. But one interesting fact emerges; with such highly specialized and evolved copper tools, testifying marked technological achievement, is it too much to conjecture that their advent marks the beginning of the clearance of the semi-tropical jungles of the Gangetic basin? (Fig. 28)

All along the flanks of the Vindhyas, particularly in Bundelkhand and Baghelkhand, we have extensive surface collections of Neolithic stone tools. These are typologically indistinguishable from the Bellary-Raichur ones, studied in detail already. The collections of these from the British Museum are being studied by Dr. F. R. Allchin. Could this mean the expansion of the early agricultural communities into the main riverine tracts after their mastery of metallurgy, which enabled them to clear the jungles and drain the swamps? But it is significant to note that this event more or less precedes the expansion into, and the establishment of the people using the Painted Grey Ware, identified very reasonably with the Aryans by Shri B. B. Lal.

Hastinapur is the most important type site, in that it serves as a link with the east and the west.⁵ Here Lal discovered 5 phases of culture, the earliest of which shows circumstantial evidence of association with the Gangetic valley copper hoards. This fact is very important in the light of the excavations conducted at Maheshvar-Navdatoli in 1952-53 and 1957-58. As will be pointed later, the earliest agricultural communities in Malwa carry with them large number of Harappan and Post-Harappan (Western) traits. But in the latest excavations five copper-bronze (?) celts were found. Two of them have rounded and flared cutting edges and one of them has a deep shoulder, suggesting a Gangetic valley origin. Similarly at Kallur (Raichur District, Hyderabad State), we have the antennae swords. Hence there is a growing evidence of a Copper Age epi-centre in the Gangetic basin and the most urgent task seems to be to follow up Hastinapur with systematic explorations in the Gangetic basin. The second period marks a distinct break and is characterized by the Grey Ware. The people of this period built mud houses and practised

1. HEINE GELDERN. "Archaeological traces of the Vedic Aryans", *Journal of the Indian Society of Oriental Art*, IV, 1936, pp. 87-113.

2. PIGGOT, STUART. "Prehistoric Copper Hoards in the Gangetic Basin", *Antiquity*, XVIII, 1944.

3. GORDON, D. H. "Early use of metals in India", *Journal of the Royal Anthropological Institute*, LXXX, 1950.

4. LAL, B. B. "Further Copper Hoards from the Gangetic basin and a review of the problem", *Ancient India*, No. 7, 1951.

5. LAL, B. B. "Excavations at Hastinapur and other explorations in the Upper Ganga and Sutlej Basins", *Ancient India*, Nos. 10 & 11, 1955.

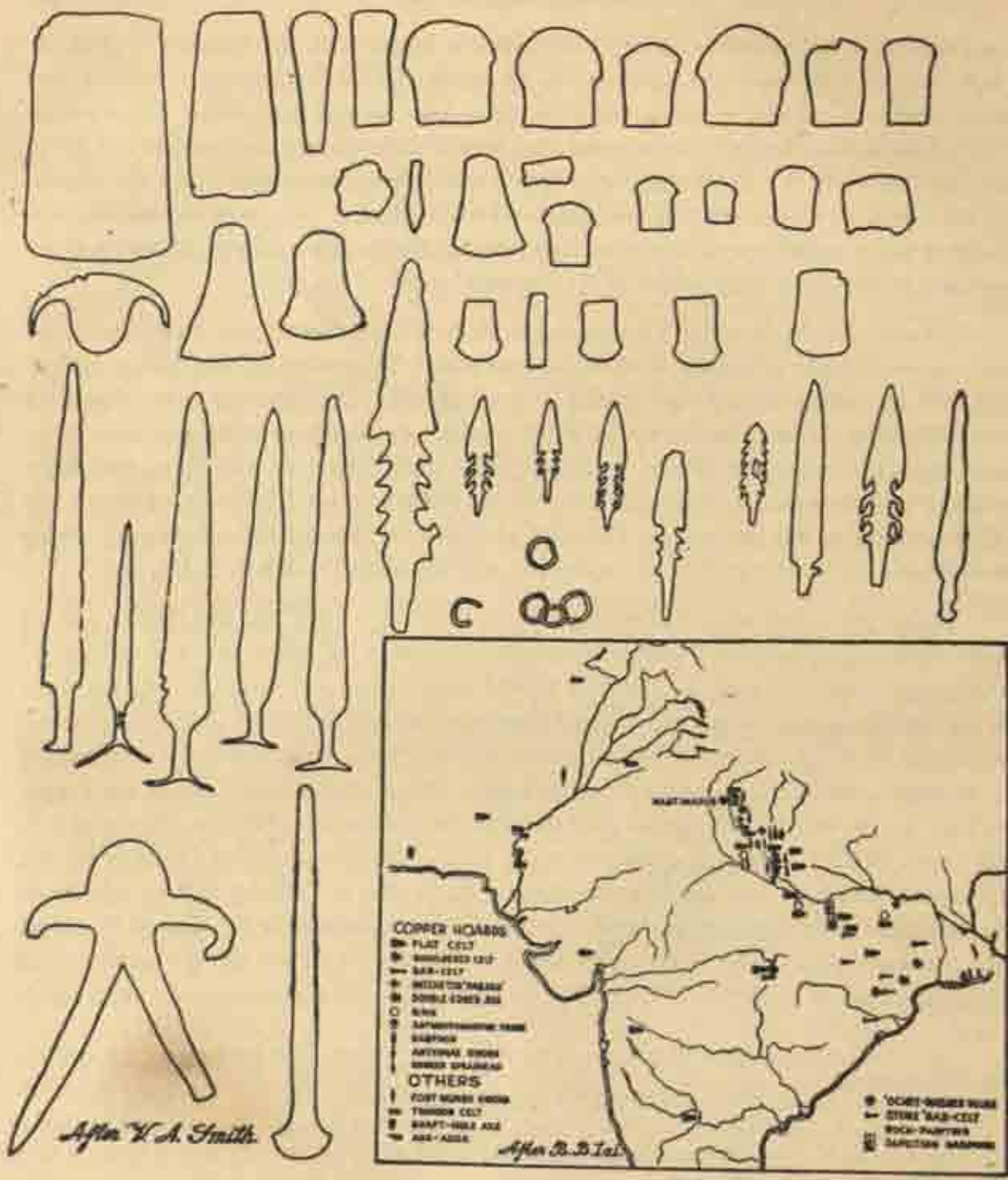


Fig. 28. Typical group of copper and bronze implements from India, particularly from the Gangetic basin with an inset map showing the distribution of the main types.

agriculture and cattle breeding. We have the earliest evidence of rice cultivation in this period. Other finds included copper arrowheads, nail parer, sickles, antimony rods, weights of chert and jasper, bangles and bone points. This occupation seems to have been abandoned owing to floods, indicated by the erosion of the face of the mound. After a break, the third period marks the advent of the N.B.P. and iron (barbed arrow heads, chisel, sickle, latch, etc.). The people built fine burnt brick houses. The next phase falls well into the historic period indicated by Sunga coins etc. At present the Grey ware seems to have spread over the Upper Indus and the Gangetic basins.

The latest season's work at Kausambi (1957-58) has revealed a horizon of 'Painted Grey Ware' in a slightly modified form, significantly suggesting its eastward spread. But the most interesting evidence is the occurrence of a few 'Harappan' (?) red ware sherds, one of them being a portion of the base of a dish-on-stand. The fortifications and the corbelled drain is also taken as an indication of the survival of certain Harappan traits. As already mentioned at Ukhina in the Meerut District was found Grey Ware and black-and-red ware in association with Late or Post-Harappan pottery with terracotta cakes. At Kanouj also a few sherds of black-and-red ware were found. The excavation conducted by Shri G. R. Sharma at Kausambi, by Shri Ghosh at Rajgir, by Shri Krishnadeva at Vaisali and by Shri Vijayakant Misra at Patna, have clearly demonstrated that the N.B.P. originated in the central Gangetic valley about the 6th century B.C. and rapidly spread all over India.

The most significant discovery is the finding of black-and-red ware at the lowest levels of Sonepur below the N.B.P. in the Gaya District¹. Thus the excavations at Patna, Rajgir and Sonepur show that the black-and-red ware again provides a link between the Proto-historic grey wares and the Historic period represented by the N.B.P. Thus this entire problem of these black-and-red wares needs a careful study. Does it suggest a spread of this ware along the flanks of the Vindhyas south of the river Ganges? In that connection, the discovery of a few sherds at Kanouj, and the mention of megaliths by Cockburn in the Mirzapur District, indicate interesting possibilities.

Bengal

The lower deltaic portion of the Ganges is, as yet, a *terra incognita* as far as archaeological evidence is concerned. But these enormous deltaic lowlands of Bengal are subjected to constant shifting of river beds to an extent unknown in any other part and, as Raychowdhary put it, "these changes have made and unmade flourishing cities and thriving marts, and sometimes changed

1. *Indian Archaeology*, 1956-57.

the whole outlook of areas." It is not without significance, as we shall see, that the first literary records refer to the development of *Vardhamanabhukti* and *Kankagrama* between the Rajmahal hills and the *Bhagirathi* (Hooghly) and along the northern foot-hills or northern parts of *Pundra* or *Varendra* with the early inscription at Mahasthan on the banks of *Karatoya*.¹ Other evidence also tends to confirm the general belief of a slow spread of Aryan or Gangetic valley influences downstream along the river. There is evidence of a vague and indeterminable character about the possibility of terrestrial influences from S. E. Asia through Assam and maritime influences through the sea. But this probably was Pre-historic, and Pre-Aryan in character. Such evidence mainly consists of the infiltration of the South-east Asian Neolithic cultures.

The Asutosh Museum authorities at Calcutta have discovered a number of Early Historic sites in the lower delta of Bengal yielding among other things, N.B.P. and Rouletted ware.² Reliable evidence for the reconstruction of the sequence comes from the excavations at Bangarh on the *Purnarbhava* (Dinajpur District) by Shri K. Goswami³ and of Tamluk (ancient *Tamralipti* in the Midnapore district) by Shri M. N. Deshpande.⁴ The former site has yielded definite evidence of the Northern Black Polished Ware in the lowest levels confirming the possibility of rapid development during the Mauryan Period. Its earliest beginnings, if any await the action of the spade. The excavation of Tamluk is very important for the fact that it furnishes evidence of a possibility of a Neolithic (?) culture characterized by the use of polished stone axes, being superceded by the higher cultures with definite influences in pottery, terracottas etc., from the Gangetic Valley. Apart from the earlier Indian literary references, Tamluk is mentioned by Ptolemy. The development of this eastern port by the beginning of the Christian era is also corroborated by the occurrence of Rouletted ware (similar to that of Sisupalgarh), also the sprinkler belonging typologically to the Red Polished Ware (Early centuries of the Christian era), and further distribution of the Rouletted ware is very remarkable.

The most interesting feature is the obvious affinity between Sisupalgarh and Tamluk, suggesting the possibility of the development of the route along the east coast. This then explains the location of the inscriptions of Asoka along this highway to Kalinga.

Malwa Plateau

Moving south-west from the Gangetic basin into Central India and the Malwa plateau, we find an altogether different sequence. The explorations of V. S. Wakankar and A. V. Pandya,

1. MAJUMDAR, R. C. (Ed.), *History of Bengal*, Vol. 1. Decca, 1943, p. 3.

2. *Indian Archaeology—A review*, 1956-57.

3. GOSWAMI, K., *Excavations at Bangarh*, Calcutta.

4. *Archaeology in India—A review* 1954-55.

followed by the large scale excavations at Maheshvar by the Deccan College Research Institute and the University of Baroda¹ and of Tripuri by M. G. Dikshit have enabled us to get a clear picture. Here we have very widespread settlements in the valleys of the Chambal and the Narbada of a people using a painted pottery characterized by black designs on red or cream slipped pottery and a highly specialized microlithic blade industry employing the technique of crested guiding ridges and the elaborate preparation of cores, simulating the well-known "Grand Pressigny" technique of Europe. From an analysis of nearly 7000 specimens from the excavations at Maheshvar the whole technique of manufacture of these blades was studied by the writer. It is essentially intended to mass-produce blades. This technique is definitely identified in Western Asia and the Aegian region. In India, it seems to be associated for the first time with the Indus Valley Civilization. This Proto-historic culture of Malwa can be approximately dated to the 1st half of the 1st millennium B.C. or earlier on account of its stratigraphic position below the deposits of N.B.P. Its contemporaneity with the Grey ware cultures is indicated by the common association with both of the black-and-red (usually associated with megaliths in the South) in the Bikaner region. Near Udaipur, this black-and-red ware has been found with black-on-red painted ware. At Maheshvar, this ware occurs with the earliest painted pottery culture, but it becomes predominant in the following phase characterized by the appearance of iron (sickie, arrowheads, hoe spearheads, nails, etc.) and N.B.P. (Fig. 29)

These excavations at Maheshvar-Navdatoli were again renewed under the joint auspices of the Deccan College Research Institute, the University of Baroda and the Department of Archaeology, Madhya Pradesh (1957-58). During this season, the Chalcolithic settlement on the south bank of the river Narbada was excavated horizontally. It revealed nearly a dozen floor levels of prosperous agricultural communities cultivating cereals, grams and pulses (now being identified). They lived in square and round huts of wattle and daub construction and walls reinforced with thick round posts. As a result of conflagrations the settlement seems to have been disturbed at least thrice. On this basis, the occupation was divided into four phases. The earliest is characterized by the widespread use of cream slipped wares with black paintings, very reminiscent in forms and decorations to those of Sialk. With it occurs a painted variety of black-and-red pottery, suggesting contacts with Eastern Rajaputana and the type site Ahar. Five large copper celts were found. While some of them have straight sides with convex edges, one has a distinct shoulder and crescentic-edge, suggesting affinity with the Gangetic valley. In the next phase, the black-and-red painted ware gradually declines in quantity and we see the appearance of certain

1. SANKALIA, H. D., SUBBARAO, B., DEO, S. B., "Archaeological sequence of Central India", *South Western Journal of Anthropology*, New Mexico, Vol. IX, No. 4, 1953.

NARMADA VALLEY EXPEDITION 1952-53

MAHESHVAR

NAVDATOLI

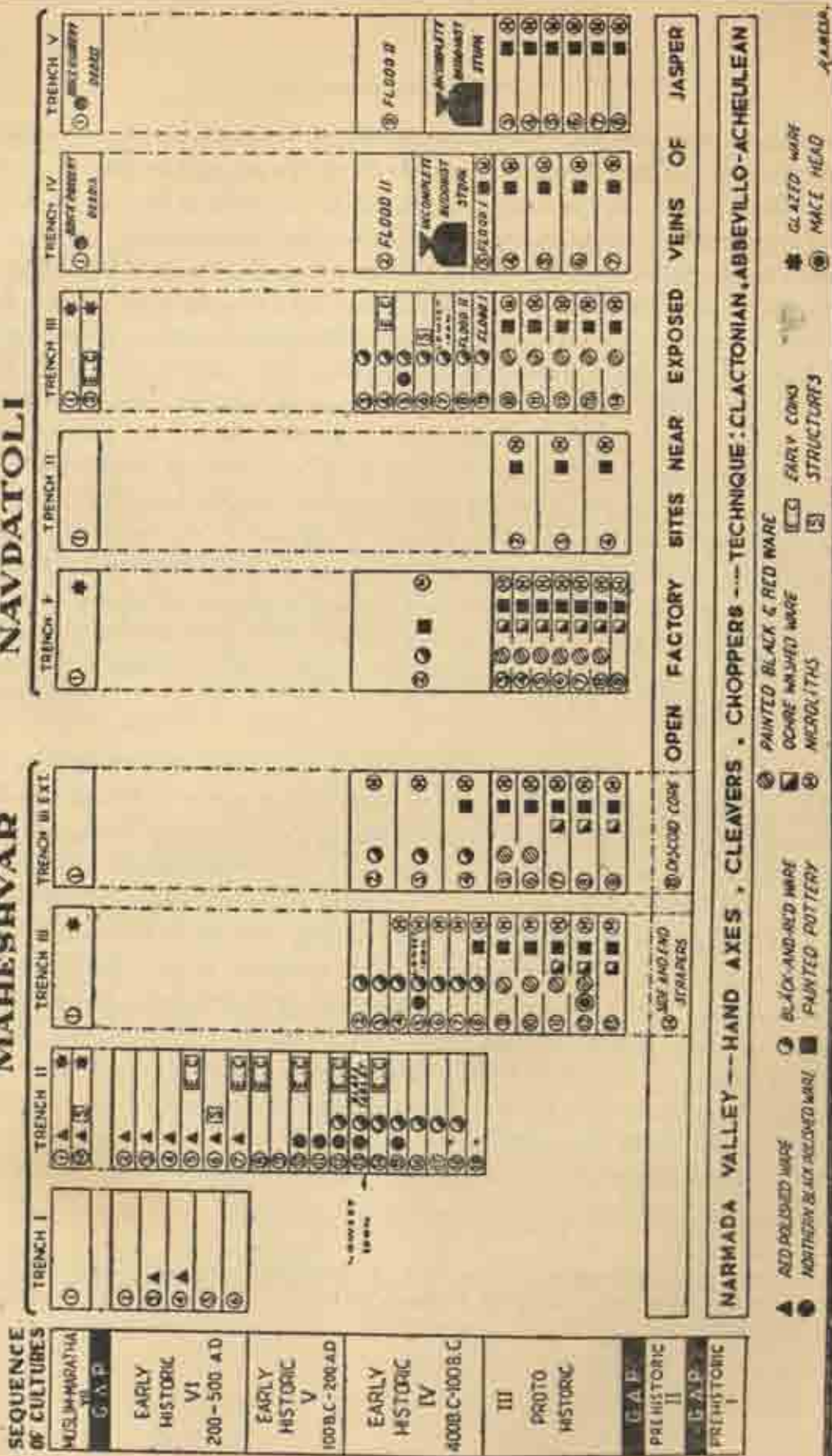


Fig. 29.

Post-Harappan ceramics comparable to Somnath Ib and Rangpur IIb-IIc. Again the last two phases provide a link with the other Chalcolithic sites like—Jorwe in Maharashtra. A few specimens of typical lustrous red wares of Rangpur IIc—III and Somnath II occur in the last phase. Thus the two elements that have contributed to the Chalcolithic cultures of Malwa seem to be a few Post-Harappan traits and a new element from Iran. This has great possibilities and the material is being studied at present. (Fig. 30)

About the chronology of the site, the new evidence from Ujjain and Nagda can be used to take back the dates of the Early Historic N.B.P. and Pre-N.B.P. phases on the basis of the phase I of Ujjain (700-500 B.C.). On the evidence of the ceramic studies and connections with Iran also, the Chalcolithic phase can be dated to 1200-700 B.C.

Since the manuscript was sent to the press, very important data on the chronology of this site has come from the C-14 laboratory of the Pennsylvania University, U.S.A. I am very much obliged to them and Dr. H. D. Sankalia, who promptly permitted me to use these dates,

<i>Lab. No.</i>	<i>Description</i>	<i>Age Years B. P.</i>	<i>Age Before the Christian Era</i>	<i>Phase in the excavation</i>
p-200	Trench II, Sub-Sq. W, Layer(8) S. No. 10, R. No. 5908, Char- coal	3457 <i>plus minus</i> 127	1457 <i>plus minus</i> 127	I
P-201	Trench II, Sub-Sq. D, Layer (8) S. No. 8 R. No. 12847, Char- coal	3492 <i>plus minus</i> 128	1492 <i>plus minus</i> 128	I
P-202	Trench I, Sub-Sq. A 18, Layer (6) S. No. 2, R. No. 12048 Char- coal	3503 <i>plus minus</i> 128	1503 <i>plus minus</i> 128	II
P-204	Trench I, Sub-Sq. G, Layer (3) S. No. 3, R. No. 11522, Char- coal	3449 <i>plus minus</i> 127	1449 <i>plus minus</i> 127	III
P-205	Trench I, Sub-Sq. M Layer (2) S. No. 3, R. No. 11538 (?) Burnt Wheat	3294 <i>plus minus</i> 125	1294 <i>plus minus</i> 125	IV

Thus we have a very consistent dating provided by four runs of this site to between 1500-1000 B.C. In view of the generally cautious chronology adopted in this text, it is very pleasing to note that these cultures can be pushed back slightly, as also the corresponding contemporary cultures. Till this data is finally integrated and interpreted, this whole chronological fabric based on relative chronology may be treated as provisional. (See Figs. 29 & 30).

NAVDATOLI 1957-58

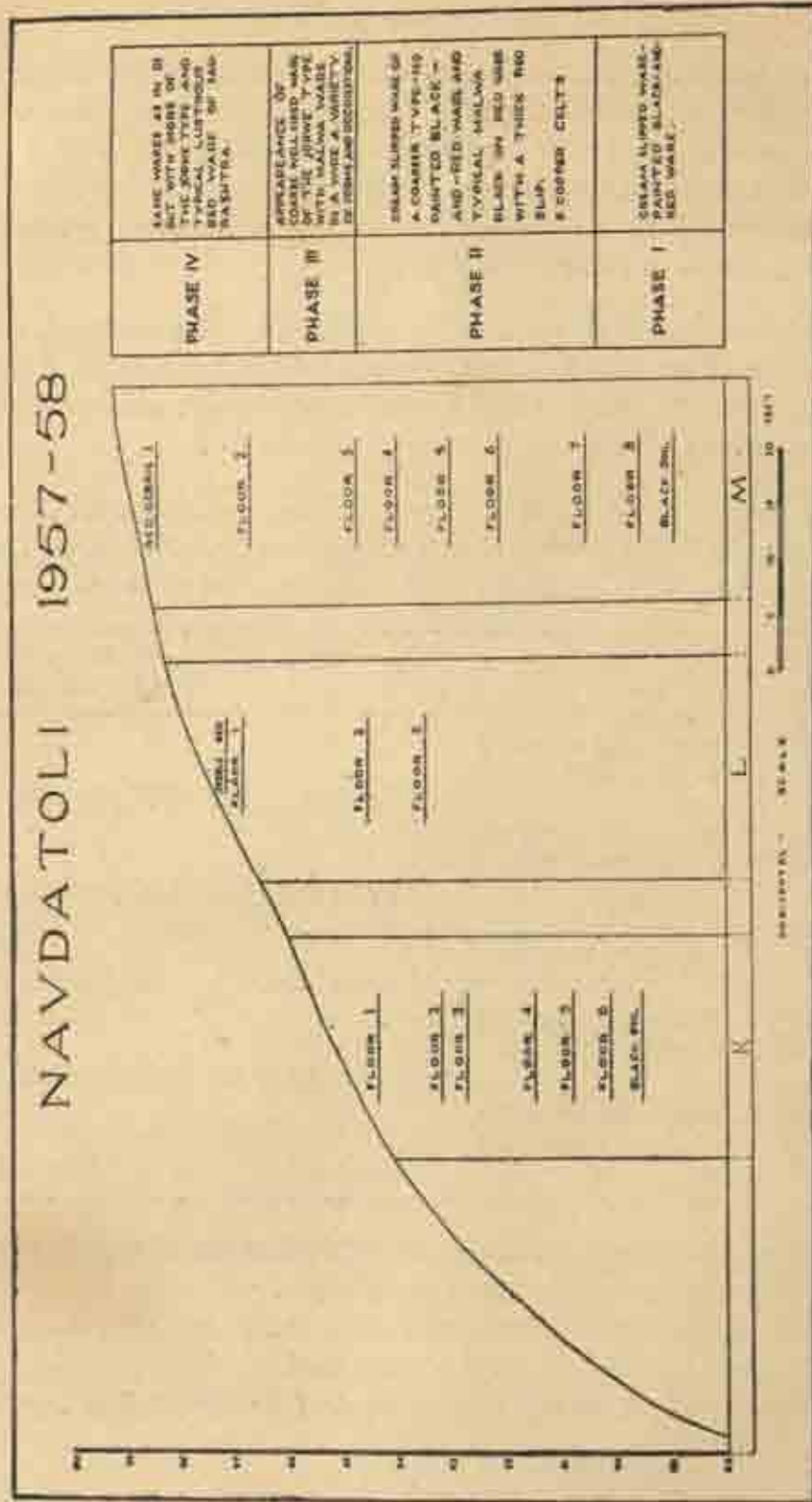
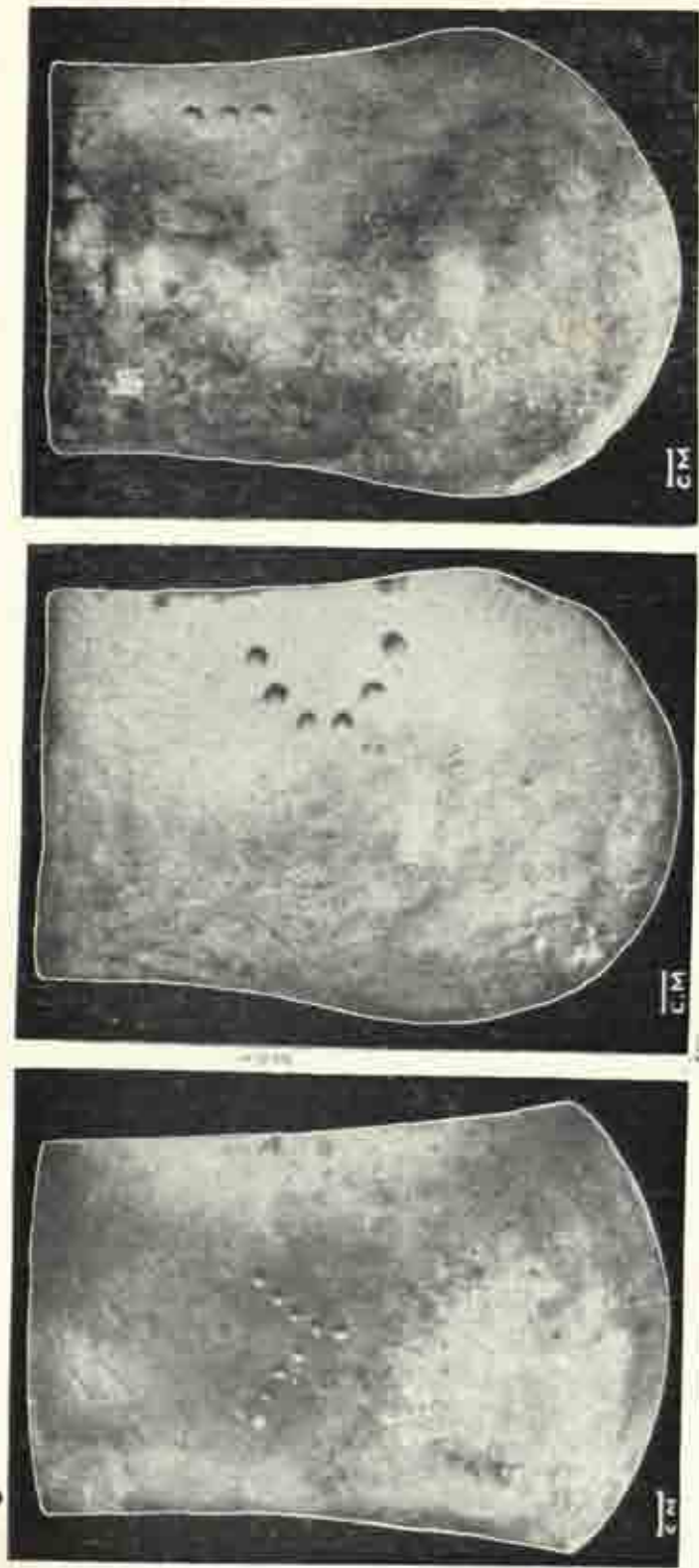


Fig. 30.



VII. Copper celts from Navdatoli, opposite Maheshwar, Madhya Pradesh.

In this connection, it will not be out of place to discuss a very interesting phenomenon at the north western edge of the Malwa plateau and the adjoining Indo-Gangetic divide about the beginning of the first millennium B. C. or a little earlier. Unfortunately, we are not in a position to gauge the full significance of it because of our ignorance of the position on the other side of the Indo-Pakistan frontier. Our knowledge of the position inside the Indian frontier, however, tends to suggest that the Bikaner area was some sort of a rendezvous with various elements apparently converging, but in fact diverging from this point. The significance of this which one may call the "Proto-Historic-Tri-junction" (Fig. 31) cannot be over-emphasized and calls for immediate attention. This also brings into prominence the role of the Aravallis and the Vindhya in Indian archaeology. The Harappan civilization spread along the river Ghaggar (Vedic Sarasvati) into the Bikaner area. But it does not seem to cross the Aravallis.¹ The second element is the Grey Ware culture. The authors of this culture seem to have moved straight from the Upper Indus basin into the Gangetic, as already described. They never used any stone implements and they also carried the urban tradition into the Gangetic valley and established the first towns and villages. The second, but more interesting element is constituted by the small quantities of black-and-red ware, occurring in association with the Grey ware in the Bikaner area.²

This pottery gradually makes its appearance in the Malwa plateau and even in Kathiawad peninsula with the local painted pottery cultures. But in Malwa, it becomes dominant in the next phase, contemporary with the N.B.P. It is very interesting to note the influence of Grey ware on other ceramic forms. Apart from the technique of decoration and surface treatment, some of the basic forms (especially utilitarian types like shallow dishes with incurved sides and beaked or beaded rims, rimless bowls, etc.) commonly occur in the Grey wares, N.B.P., Gangetic valley black wares and even the Black-and-Red wares. The further development of the forms and techniques also add to the story. While the Grey wares carry their technical tradition into the N.B.P., the technique of inverted firing continues in Central India and Maharashtra and develops into the highly specialized funerary forms of the megaliths (Fig. 42). What about the position of metals?

1. As will be shown in the section dealing with Rajputana and Gujarat the persistence of a homogeneous ceramic zone, characterized by the continuous use of a Black-on-Red painted tradition into the early historic period, indicated by the excavations at Rangmahal, Bhinnamal, Vadnagar and Vesai is very significant. Aravallis again constitute the eastern boundary of this zone and the difference in the ceramic sequence between the sites on either side in Mewar and Marwar speaks eloquently of this geographical influence on Indian archaeology.

2. The recent excavations at Rupar and Lothal have very much complicated the problem of this pottery. Their alleged occurrence, even in a Late Harappan context makes it very early. Hence the earlier occurrence does not in any way conflict with the discussion in this paper. But the most crucial area for urgent further investigations seems to be the Proto-Historic-Tri-junction shown in Fig. 31.

The tools in the kits of these Proto-historic settlers of Malwa clearly show that these people used heavy copper celts—derived from the East as well as the West. Further south in Maharashtra also, we have heavy copper flat celts associated with it. At Maheshvar, a few fragments of copper-like rods and a fish hook were found in the excavation. There is no suggestion of a violent displacement of the painted pottery culture at Maheshvar, but one of a long overlap and gradual displacement. But in the second period, where we have definite evidence of iron, there are 31 feet of deposits of black-and-red ware out of a total of about 47 feet of occupational debris, in the main trench on the north bank of Narbada. Within this 31 feet of debris, characterized by the presence of N.B.P., punch-marked coins, etc., the difference in height between the lowest and the highest occurrence of N.B.P. is about 20 feet.

At Ujjain a similar sequence was repeated, but N. R. Banerji divided this earliest phase on the basis of N.B.P. The earliest is characterized by the occurrence of black-and-red pottery, iron, etc., without N.B.P. In his latest report he has dated this period to 700-500 B.C. Very significantly this phase shows affinities to Kausambi and Ahichchatra by the occurrence of "double slipped wares with thin black evanescent slip or wash over a red ware". Thus this is very significant and explains the culture gap between the Chalcolithic and Historic phases at Maheshvar. At Maheshvar, N.B.P. is absent in the lowest 13 feet of the deposits with black-and-red ware and iron.¹

In view of the close association in time and space of these two cultures, whose movements into the Deccan peninsula can be traced by a number of well-spaced excavations, one is tempted to observe that it is not possible to make a fine theoretical distinction between copper and iron, at least in Central India. At best we can postulate two very closely-spaced movements. It is very interesting to note that the inter-mingling of these two cultural elements in Malwa and their co-existence is vouched by the evidence north of the Vindhya. But curiously, this association does not persist in Maharashtra, and the earliest levels both at Nasik and Nevasa have not shown the association of the Black-and-Red ware. Here, as in Malwa, the Early Historic Period is characterized by the use of the same pottery with N.B.P. This raises grave issues of chronology and inter-relations, which await further stratigraphic evidence. Probably the 'Vindhyan Complex' can account for this curious phenomenon.

Besides, by about 1000 B.C. iron had spread almost to the borders of Pakistan. Gowland² has already pointed out that a transition from copper to iron is not very difficult. Whereas copper

1. *Indian Archaeology 1957-58 A review*. New Delhi, 1958, p. 34.

2. GOWLAND, WILLIAM. *The Metals in Antiquity*, Huxley Memorial Lecture 1912, Royal Anthropological Institute, pp. 277-8.

would require temperatures in the neighbourhood of 1100 F. for smelting, it is possible to extract iron from the ores at about 700 F. He also referred to the existence of primitive open furnaces in south India.

This assumption of a knowledge of metal technology, in contrast to that of any single metal at such a late stage, would not in any way conflict with the existence of a copper age in the Gangetic basin. The very difference in the cultural *milieu* and the distinct possibility of copper occurring earlier than the Grey wares in the Gangetic basin, would account for it. On the other hand, this would emphasize the position of raw materials. While copper is found in large quantities in Eastern India and Rajaputana, iron alone is plentiful in Central and Southern India. Then we will be able to understand better the occurrence of flat copper celts of the Gangetic valley type in Maharashtra and the famous copper swords at Kallur in the Raichur District. Hence it may be suggested that the transition to iron in Central India might have taken place sometime in the middle of the 1st millennium B.C.¹ Within an area of about sixty miles to the east and west of Maheshvar, a number of older formations project out of the volcanic lava. In these two areas a large number of "old iron working" have been reported.² But we do not know the antiquity of these workings. So a metallurgical analysis of the ores as well as the tools, may throw some significant light.

To conclude our account of Malwa, we have already seen the appearance of N.B.P. and our sequence ties up with the known early historic sequence provided by the coins, etc.

Maharashtra

Crossing the Narbada basin, we enter into the Tapi valley and the upper basins of Krishna and Godavary. This land is characterized by the occurrence of the fertile black-soil, interspersed with ridges of deciduous and mixed deciduous monsoonal forests. If we recall our section on the physical and cultural environment of the Neolithic people of the Gneissic and Metamorphic areas of the lower reaches of the Krishna and the Godavary valleys, we can understand the character of the first large scale agriculturists in the heavily wooded area of Maharashtra. It is easy to adduce to positive and negative evidence for the settlement of the Chalcolithic folk with their heavy metal tools. The dry-deciduous areas of Central Deccan and the occurrence of granatoid hills with basalt and dolerite dykes is very convenient for people practising primitive agriculture and pasturage. Absence of a favourable environment, capable of supporting large com-

1. In the recent excavations at Ujjain, N. R. Banerji recovered large traces of iron-working with slag etc. I am very much obliged to him for this information.

2. Bose, P. N., "Geology of the lower Narbada Valley between Nimawar and Kawant.", *Memoirs of the Geological Survey of India*, Vol. XXI, Art. I. p. 64-68.

munities is sufficient for our purposes. Now it becomes easy to account for the spread of this Painted Pottery culture of Malwa with their metallurgy into this area with almost similar environment.

The spread of this culture into the next basin, that of the Tapi is indicated by the extensive excavation of Prakasha in West Khandesh District. Here in a 50-foot section, the Maheshvar sequence was repeated exactly.¹ B. K. Thapar has made a sub-division of the earliest Proto-Historic period on the basis of slightly higher occurrence of the characteristic concave sided bowl in thinner fabric of the Jorwe-type in the upper strata of his earliest period. This requires further corroboration.

The further extension of this culture has been amply demonstrated by the excavation of Bahal on the Girna, a tributary of the Tapi, by M. N. Deshpande and of Nasik on the Godavary and Jorwe and Nevasa on the Pravara by Dr. Sankalia. At all these sites, we find the same type of painted pottery and the specialized blade technique in association with copper. Besides, we know a large number of similar sites yielding the same assemblage. The most important evidence is furnished by the last-mentioned excavation at Nevasa where, for the first time, we see the association of polished stone axes with this culture, suggesting the possibility of its contact with the lower basins of the Krishna and the Godavary.

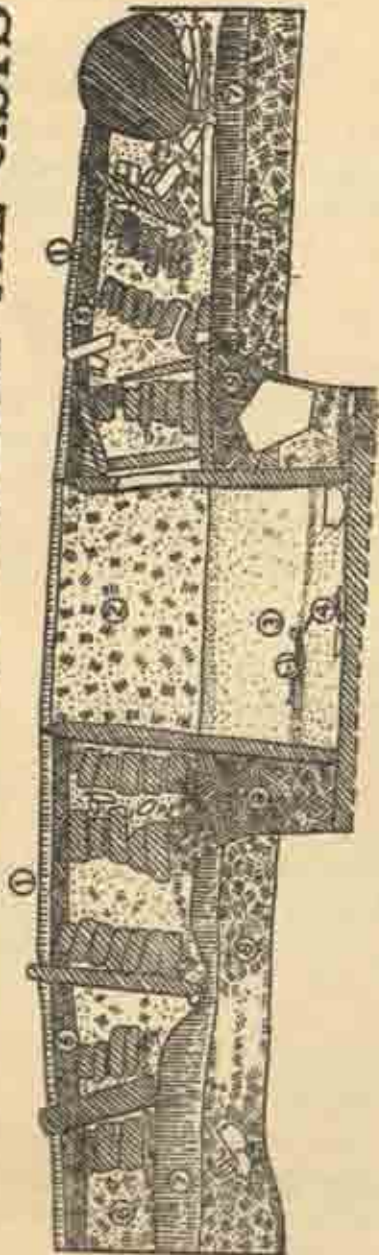
The most important evidence bearing on the problem of burials and the black-and-red ware has been unearthed in Deshpande's resumed excavations at Bahal on the Girna river in West Khandesh. He exposed 5 phases with breaks between I and II, and III and IV. In his first phase, which he divides into 'A' and 'B', he found, thick grey ware urn types with flared rims (similar to Brahmagiri) succeeded by the typical Central Indian wheel turned black-on-red painted ware with a few sherds of "Post-Harappan lustrous red ware" and the carinated vessel with a tubular rim, with the typical blade industry. His phase II belongs to the Iron age and is characterized by the black-and-red ware and iron spear heads, arrow heads, knives, daggers, sickles etc.²

Hence for our purposes these phases are important in that they connect North and South, as does Nevasa. The most significant discovery is the cemetery on the other bank called Tekwada. Here he exposed three urn burials and one pit burial, all of them yielding black-and-red vessels of different shapes, including the painted variety of black-and-red ware. He dates the cemetery to his IB on the basis of pottery. It is essential to recall the similarity, pot by pot, with the pit burials found under the cists V and VI at Brahmagiri. (Figs. 32 and 42)

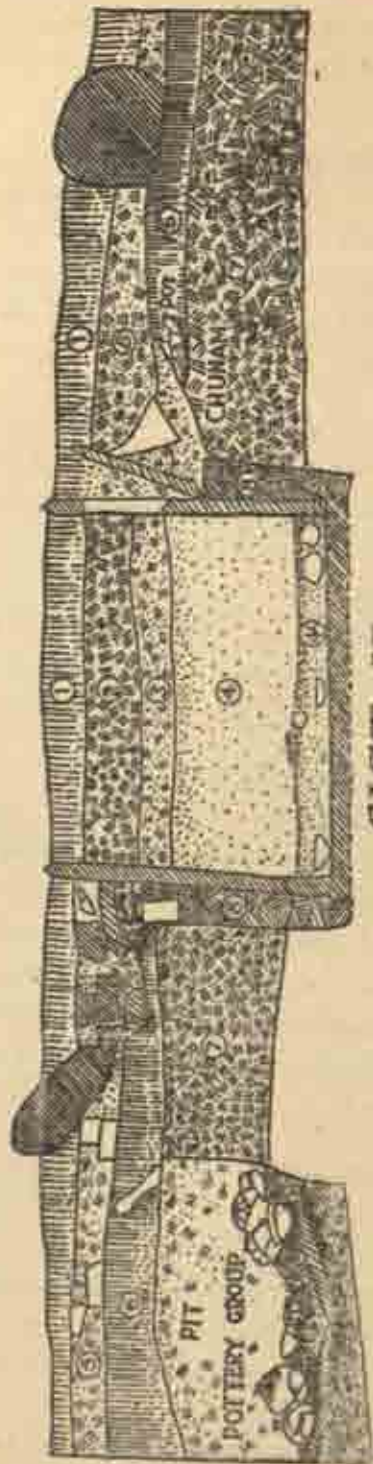
1. *Archaeology in India* 1954-55.

2. *Indian Archaeology* 1956-57, Figs. 8 and Pl. XXII, A and B.

**BRAMMAGIRI - CEMETERY AREA
PITS WITH POTTERY OUTSIDE THE CISTS**



CIST V



CIST VI

Fig. 32. (After Wheeler.)

At all the sites mentioned above, this phase is invariably followed by the black-and-red pottery and N.B.P. phase with iron, as in Malwa. Here we have the additional advantage of a definite link with history, provided by the Satavahana coins and other datable antiquities in the later stages.

Lower Krishna-Godavary basins (Andhra-Karnatak areas)

When we leave the Trap area and march southwards and eastwards into the Gneissic and Metamorphic areas of Central Deccan, we find ourselves in a different setting altogether. We have already seen how this area sheltered large Neolithic communities. By now, we are quite familiar with the Proto-historic chalcolithic communities in Malwa and Northern Deccan. The stratigraphic evidence at Sanganakallu for the intrusion of the Black-on-Red painted pottery into a pure Neolithic culture, has already been discussed. Besides, we can also demonstrate the appearance of the neat blade industry associated with it. At Brahmagiri, very few cores have been found, but a crested flake, providing evidence of its technique of manufacture was found.¹ At Sanganakallu, a few cores have been found, but a fresh examination of the specimens is needed.² At Maski also this technique occurs. Shri B. K. Thapar has in a communication confirmed the use of the technique of crested guiding ridges. The fine chert found in the Kaladgi limestone series gave an opportunity for these Proto-historic people to make long blades and blade flakes, usually described as 'ribbon flakes'. From the former collections from Maski, the author noticed further evidence of this technique from cores. (Nos. M. 3247-52 F, M. 3245-52 F and 3248-52 F). Since this technique of blade production is invariably associated with the Black-on-Red painted pottery tradition,³ there is no doubt that the metals (copper and bronze) infiltrated slowly into a predominately Neolithic culture (Fig. 21). On account of the scarcity of these metals, however, the earlier polished stone axes also continued to be used. This neat overlap of cultures and their transition is amply borne out by the materials from Brahmagiri, Sanganakallu, Pikihal and Maski.

The Early Historic Period and the Megalithic Problem

As already stated, the occurrence of the black-and-red ware in the so-called non-megalithic areas of Western and Central India has high-lighted this problem, which up to now was taken as pertaining only to South India. But a slight treatment of this problem in its historical aspect is not superfluous. Firstly, South India has been a hunting ground for these so-called 'Scythic'

1. WHEELER, 1947, Pl. CXIV, 7 and Fig. 34, 7.

2. SUBBARAO, 1948, Pl. XXV, 3.

3. SUBBARAO, B., "Chalcolithic Blade Industry of Maheshwar and a note on the history of the technique", *Bulletin of the Deccan College Research Institute*, XVII, 1956.

or 'Druidal' remains for well over a century and till 1947, no attempt was made to fix up a relative chronology and relate these burials to the people who built them and their material culture. Hence we cannot complain against the older writers who described them as Prehistoric. Secondly, the history of Southern India, based on literary sources cannot take us to a period earlier than the Mauryan at any rate, and is mostly better documented from about the Christian Era. Hence the cultural history of the preceding periods, and particularly the Megalithic phase depends to a greater extent on archaeology. So this lopsided development has to be compensated by large scale excavations at the habitation sites of these Megalithic folk. Thirdly, a lively controversy was started by Prof. Haimendorf when he identified the Dravidians with the Megalith builders.

The writer does not claim any startling new discoveries leading us to the problem of the Megalithic culture, Dravidians etc., *but an attempt is made in the following pages to remove a few misconceptions, and clear the decks for any intensive attack on this complex problem, in the light of certain new developments in Indian archaeology.* The basic facts about this culture may be stated as follows :

1. In India, particularly in the South, we have, what one may call a burial-complex varying from simple pit and urn burials upto the most elaborate cists and circles with orthostats and clinostats. Dr. Aiyappan¹ had counted nearly thirty types and V. D. Krishnaswamy has proposed a system of classification and terminology.²
2. There are certain basic structural affinities with those of Europe, Mediterranean and the Caucasus region. But in the present state of our knowledge, the Indian group is very late when compared to them.³

The excavations at Brahmagiri gave a tremendous impetus to the study of these problems. While Haimendorf propounded a theory that the megalith builders were Dravidians, because of their coincidence with the present day distribution of Dravidian languages,⁴ D. H. Gordon has

1. KRISHNASWAMY, V. D. "Megalithic types of South India" *Ancient India*, No. 5. New Delhi. 1948.

2. AIYAPPAN, A. "Megalithic Culture of Southern India"—Presidential Address, Anthropology and Archaeology section, Indian Science Congress, Nagpur, 1945.

3. "On the coast of Atlantic, the North sea and the Baltic, megalithic tombs exhibit a continuous distribution in space. But they do not disclose a single culture in the usual sense of a complex of traits—similar pottery, tools, weapons and ornaments regularly recurring together in these tombs and not in other sepulchral associations. Only one class of pottery, the so-called Beakers, is at all often found in these tombs all over the province. He concludes his very provocative summary in *Ancient India* with the remark, "the quest for any megalithic circle culture is much less promising than for a tomb complex".

CHILDE, GORDON, V. "Megaliths", *Ancient India* No. 4, 1947-48, p. 6 & p. 13.

4. HAIMENDORF: "New aspects of the Dravidian Problem", *Tamil Culture*, II, 2, 1953.

discussed the archaeological implications.¹ So we begin with the latter and then discuss the former a little further. Col. Gordon's case may be summarised as follows. The megalithic complex is associated with black-and-red pottery and iron. Prof. Codrington thought, but without stating any particular reasons, that the rock cut tholoi of Malabar (caves) were the earliest. Since Wheeler had dated the megaliths at Brahmagiri to about 200 B.C., Gordon suggested an earlier date for the southern group. As iron appeared to him to be absent in Northern India before 250 B.C., he inferred that iron was earlier in the South. Since Brahmagiri suggested a sudden infiltration of the megalithic folk, Wheeler saw in the collapse of the Mauryan empire, an ideal context for a folk migration into Central Deccan from the South. Accepting the identification of Prof. Haimendorf, Gordon imagined a Chola migration upto the Vindhya and their rebuff at the hands of the Satavahanas. But the recent evidence does not bear out most of these assumptions. The two crucial criteria of Gordon, *viz.* the pottery and iron, will be discussed, leaving the more controversial factors.

About the pottery, there is no doubt that the one unifying factor of this burial complex of South India is the black-and-red ware. However, the recent work in Central India has made this pottery extremely important for further studies. Hence the writer made a special study of the forms, fabrics, decorations and techniques. (See Figs. 42 & 43). It shows that most of the basic forms are common except the tendency for an elongation and development of pointed bases in the South. Besides its wide distribution in space, it has an equally wide distribution in time—nearly a thousand years. Hence a distinction is sought to be made on the basis of megalithic burials. But the definite chronological priority of this ware in Central and Western India, and such positive affinities in fabrics and forms weakens any assumption of independent origins for the megalithic and non-megalithic black-and-red ware. So the solution to this problem lies elsewhere and the possibility of its being earlier in South India is eliminated by the uniformity of the grave goods and pottery with this entire burial complex. At the present state of our knowledge, the following alternative hypotheses should be explored :

1. A people already practising some form of megalithic burial in the South could have adopted this fine burnished ware and iron ; and hence its popularity with their graves. In this connection, the extended burial with pots in Br. 17 at Brahmagiri may be considered.²
2. Or the megalithic culture could have infiltrated by land across the Gneissic areas of Central India into the South, where they have survived for a longer time. The alleged

1. GORDON, D. H., "Early use of metals in India and Pakistan", JRAI, LXXX, 1950.

2. WHEELER : *Ancient India*, 4, Fig. 21, p. 228.

find-spots of megaliths in Northern India—though badly neglected—may be pointed. The close affinities of the pottery from the burials at Bahal and the pottery below the cists at Brahmagiri (already referred to) shows a definite Pre-Iron type of burial, in Central India with the same pottery.

About iron, when Gordon wrote his paper on "*The early use of metals in India and Pakistan*", the finds of iron from Taxila and Hastinapur were not published. The subsequent excavations at Maheshvar also carry the age of iron to a period about 500 B.C. Hence it is not possible to maintain that iron was earlier in the South. About the typology of the iron tools, most of the types are common to both North as well as South. The only distinctive types being the shaft-hole-adze found at Taxila only, and the adze with a ring fastener supposed to be typically megalithic. But this occurs at Junapani and Thakurghat "barrows" near Nagpur. *Thus the evidence tends to show that iron and the Black-and-Red wares came together into South India.* Such association of both has been noticed at Timbarva and Somnath in Gujarat and Nasik and Nevasa in Maharashtra.

The other relevant issue is the so-called sudden appearance of the megalithic culture at Brahmagiri and the dramatization of Wheeler by comparing the Toda settlements and the city of Ootacamund for the difference between the megalithic and pre-megalithic phases. The evidence of Brahmagiri itself with some of the pots from the Chalcolithic burial in Br. 17 with some of the crude rimless type bowls etc., suggests a slow infiltration. These "significant overlaps", as Wheeler himself described them, were confirmed at Sanganakallu. Certain pottery forms common to both were pointed out by the writer.¹

Finally, what about the megaliths in the North? We cannot close our eyes to very responsible but vague accounts which give quite a wide distribution. They are reported from Rajaputana,² Uttarpradesh,³ Bihar⁴ and Kashmir.⁵ Cockburn has given us an account of an excavation of a barrow 60 feet in diameter with black pottery and blades, reminding us again

1. SUBBARAO : *Bellary*, 1948, p. 15.

2. CUNNINGHAM, *Annual Report of the Archaeological Survey of India*, Vol. VI, 1878, pp. 13-15.

3. COCKBURN, JOHN. "On flint implements from the Ken ravines of South Mirzapur", *Journal of the Asiatic Society of Bengal*, Proceedings, 1894, pp. 21-27.

RIVETT CARNAC, J. H., "On stone implements from North western provinces of India", *Journal of the Asiatic Society of Bengal*, LII, 1883, pt. 1, pp. 221-230.

" " *Archaeological Notes on Ancient Sculptures on rocks in Kasmoo, India similar to those found on Monoliths and Rocks in Europe with other papers*. Calcutta, pp. 29-30, 1879.

4. CUMMINS, JOHN. *Revealing India's*. London, 1939, p. 116. also Roy, S. C. *JBORI*, 1, p. 129.

5. M. R. SAMPI : "Palaeontology, Palaeo-botany and Prehistory in India", *Journal of the Palaeontological Society of India*, 1, 1956, p. 38.

of what we now know from Bahal. We have similar accounts from the Nagpur area (Junapani and Thakur Ghat).

Thus the archaeological evidence so far and particularly the pottery, and the occurrence of different and early grave-goods suggest again a southward movement and their longer survival in the Gneissic areas of the South India. The question of its movement straight to South India by sea is not supported by our present knowledge, since none of the megalithic remains can be reasonably dated prior to 500 B.C. But this particular hypothesis needs to be verified.

The strongest objection to Prof. Haimendorf's identification is the linguistic one. Burrow¹ has shown that the greatest influence of the Dravidian languages on Sanskrit is in the Post-Rigvedic and Pre-Buddhist period. If this is true, we revert to the earlier hypothesis of a wider distribution of Dravidian languages and their gradual displacement or southward movement and their survival in the South. One of the major structural lines of Indian historical geography follows the edge of the Deccan plateau, abutting against the Indo-Gangetic plains. With the infiltration of the Aryan cultural elements into the South, one sees the remarkable feature of increasing resistance to alien influences. For example, depending on the distance and the length of the thrust, there is a descending order of Northern influences in Maharashtrians, Andhras, Kannadigas and the Tamilians. Tamil preserves its comparative purity due to what Eickstedt has called "the double mountain barrier". Hence it is premature to make any attempt to identify the Dravidians. At one time Heine Geldern suggested the Neolithic people. Then

1. Burrow : *The Sanskrit Language*, London, 1954, p. 387.

"The existence of the last member of the family in Baluchistan, far away from the main concentration of Dravidian, is consistent with the theory that before the Aryan conquest, Dravidian occupied a much greater area including considerable portions of Northern India. We shall see that the extensive influence of Dravidian on Sanskrit, beginning at an early period, also seems to point to this conclusion" (p. 376).

"Concerning the date when these words were taken into Sanskrit it may be observed, that majority are Post-Vedic. On the other hand, it is important to note that there is a small nucleus already found in the Rgveda :

e.g. :	Ulkhala	Khala	Bala
	Katuka	Danda	Bila
	Kunda	Pinda	Mayura.

"It is evident from this survey, that the main influence of Dravidian on Indo-Aryan was concentrated at a particular historical period, namely, between the Late Vedic period and the formation of the Classical language. This is significant from the point of view of locality where the influence took place. It is not possible that at this period such influence could have been exercised from the South. There were no intensive contacts with South India before the Mauryan period, by which time majority of these words had already been adopted by the Indo-Aryan. If the influence took place in the North in the Central Gangetic plain and the classical Madhyadesa the assumption that the Pre-Aryan population of this area contained a considerable element of Dravidian speakers would best account for the Dravidian words in Sanskrit. . . . The Dravidian language, Kurukh and Malto are preserved even now in Northern India, and may be regarded as islands surviving from a once extensive Dravidian territory. The Dravidian words in the Rgveda attest the presence of Dravidian in North-western India at that period. Brahui in Baluchistan remains the modern representative of North-western Dravidian". p. 387.

we had the identifications of Dr. Heras with the Indus valley people. Guha attributed the megalithic traits to the Palaeo-Mediterraneans.

Again, on the Dravidian-Megalith equation of Prof. Haimendorf one wonders whether the present distribution of the Dravidian languages and our current inadequate knowledge of the distribution of megaliths, justifies inferences from ethnology and philology.¹ We need not be taken in, either by Wheeler's dramatic parallel of the city Ootacamund and the Toda hills for the contrast between the Neolithic and the Megalithic cultures, or by Haimendorf's question: "if the Megalithic builders did not speak Dravidian, what language did they speak". We can certainly plead for a little more patience. On the question of language of the Megalith builders, we do not know anything at present. *They must certainly have spoken the Dravidian languages, but the more controversial point raised by Prof. Haimendorf, is whether they introduced these languages or not.* Earlier, Heine Geldern doubted it. Besides this raises grave problems which can only be solved by the linguists. If, as is believed, the Dravidian languages and culture influenced the Aryan from the beginning, this late chronology conflicts with these suggestions.² As a general principle, it may be stated, that the adoption of certain aspects of a higher culture need not necessarily imply the adoption of the language. The very survival of the Dravidian languages in India is an obvious answer to Prof. Haimendorf's query.

Before closing this section on this, I propose to put forward a few suggestions for detailed consideration by scholars.

1. It is necessary to separate the pottery and megalithic idea or ritual.
2. No more progress can be made in the study of this problem unless we verify and determine the character of the megalithic remains in the North.
3. We have to look for a possibility of Megalithic burial complex in the South without this black-and-red ware.

1. We should remember the caution uttered by Maxmüller. "Confusion has arisen due to mixing up of philology with ethnology. Language and classification of races should be made independently. A race can change its language"..... Should we not consider the culture complex as a single whole, specially the social structure etc. At a time when Deccan was comparatively unknown, we find a broad generalization based on the system of marriages. Baudhāyana says, that the cross-cousin marriage is prevalent among the southerners. (Dakṣiṇīyaṇam matuṣūta pūriṇāyaṇam). As a matter of fact, but for the differences in language, social structure, kinship etc., the whole religious, intellectual and cultural heritage of the whole sub-continent is the same. Even the well-known Early Sangam literature, which is full of references to the megalithic burials, is described by Prof. Nilakanthaswamy as a composite culture of the "Aryan and the Tamilian".

2. SINGH, D. C. "The Dravidian problem", *Man in India* XXXV, 1, 1955.

CULTURE SEQUENCE IN CENTRAL DECCAN

	<p>EARLY HISTORIC (SATAVAHANA) II</p>	<p>RUSSET COATED CRISS-CROSS WARE, SATVAHANA AND ROMAN COINS ROULETTED WARE</p>
	<p>EARLY HISTORIC (MEGALITHIC) I</p>	<p>RED-AND-BLACK WARE IN ASSOCIA- TION WITH IRON AND MEGALITHIC BURIAL COMPLEX</p>
	<p>PROTO HISTORIC CHALCOLITHIC PERIOD</p>	<p>SLOW INFILTRATION OF PAINTED POTTERY AND COPPER AND BRONZE INTO NEOLITHIC COMMUNITIES</p>
	<p>NEOLITHIC</p>	<p>AGE OF POLISHED STONE AXES AND EARLY AGRICULTURAL AND PASTORAL COMMUNITIES.</p>
	<p>LATE STONE AGE</p>	<p>GEOMETRIC AND NON GEOMETRIC MICROLITHIC INDUSTRIES CAMMADE SERIES IV</p>
	<p>MIDDLE STONE AGE</p>	<p>BLADE, SCRAPER AND BURIN INDUSTRIES CAMMADE SERIES III</p>
	<p>EARLY STONE AGE</p>	<p>HAND AXES AND CLEAVERS OF ABBEVILLE-ACHEUL TECHNIQUE CAMMADE SERIES I & II</p>

Fig. 33.

4. Is it possible to look for such a contact (pottery and megalithic ritual) in Central India? In Malenesia, the square axe with cut side (Vierkantbeil) is associated with the megalith.¹ It is possible that the meeting of these two traits black-and-red pottery and this megalithic cult took place in Central India about the middle of the 1st millennium B.C. before their movement into South India? This would probably meet the possible objection from linguistic as well as archaeological evidence. But this problem requires very careful investigation and this hypothesis is put forward to stimulate further studies.

Leaving all these controversial facts aside, it is proposed to make a few observations about the material culture of these megalithic folk. If one were to look at the enormous size of these cemeteries and even the associated habitation sites like Brahmagiri, Maski, Sanganakallu, one is immediately struck by their implication on the size of the communities and their probable duration. For example, within an area of five miles radius around Brahmagiri (including the sites in the bordering district of Bellary) we have no less than 2000 cists. V. D. Krishnaswamy has noticed the general association of large tank bunds with these cemeteries. E. J. Hunt has also commented on this association. The graves generally occur on the high ground overlooking these tanks, and fields. Their extensive use and fabrication of iron tools and weapons, gold beads, copper and bronze vessels and jewellery (reported from Pondicherry) and beads of semi-precious stones, suggest large scale agricultural and industrial communities. Apart from the literary references, the Emperor Asoka refers to Ratthikas, Pethinias, Andhras, Cholas, Pandyas, Kerala-putras and Satyaputras in and outside the southern portions of his empire. Hence there seems to be no doubt that the first urban life in south India started with the settlement and rapid expansion of this true Iron Age Culture, to use a term so well-popularised by Foote. Following Gordon Childe, we may define urban life as being characterized by a surplus of food production, helping to maintain other industrial and craft communities. Where are the thirty walled Andhra towns of Megasthenes, unless they be the large number of early sites in the upper and the lower basins of Godavary and Krishna?

We are well within the Early historic period and this Megalithic phase overlaps in the Central Deccan with the Andhra or the Satavahana period. (Fig. 33)

Tamilnad

Now we pass on to the eastern littoral or Tamilnad, comprising the valleys of Palar, Kaveri and Tamraparni. Unfortunately very little systematic exploration has been carried out in this

1. ALPHONSE REISENFELD: *The Megalithic Culture of Malenesia*, Leiden, 1950. p. 642.

region. The excavations of Wheeler¹ and Casal at Arikamedu,² and those of K. R. Srinivasan and N. R. Banerji³ at Sengamedu, Sanur and Pallavamedu give us the first glimpses. All the excavations stated above, except the last, have revealed two main phases, the earlier one being the Megalithic and the latter one characterized by the Roman contact resulting in the occurrence of Rouletted ware and belonging to the first few centuries of the Christian era. *The Pre-megalithic phase in this part of the country is still obscure.* If we accept the influence of raw material, we can very well account for the absence of the Neolithic cultures south of the river Kavery. The largest single group of diorite polished axes occur in the Shevroy hills in the Salem district, where there are five very large dykes of basalt north of the Shevroy mountains. According to Sir Edwin Pascoe, "the dykes under consideration are extremely rare in Tinnevely, and very few are seen in Madura, Pudukkottai State, South Trichinopoly, Salem and South Arcot."⁴ The earlier systems have been covered by the cretaceous and later systems. Very significantly, few celts have been reported south of Salem and none south of Kavery by Foote.

This fact attains some significance if we look at Ceylon. From the published accounts of Weyland,⁵ Noone⁶ and Deraniyagala,⁷ no polished axes have been found and we learn that a Microlithic culture more or less survived into the Early Historic.⁸ The existence in Tamilnad of a microlithic culture of considerable antiquity is well-attested by the chain of Teri sites in the Tinnevely District. Whether this culture, based on a primitive hunting economy, survived till it was displaced by the Megalithic folk requires investigation. But such a possibility is not ruled out by the evidence of Arikamedu and Sengamedu.

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1. WHEELER, R. E. M. "Arikamedu—An Indo-Roman trading station on the East coast of India", *Ancient India* No. 2, July 1946.
 2. CASAL, J. M. *Fouilles de Virampatam—Musée Guimet, Paris.*
CASAL, J. M. and CASAL, TA. *Site Urbain et sites Funéraires des environs de Pondichéry.* Presses Universitaires de France, Paris, 1956.
 3. I am very much obliged to K. R. Srinivasan for this information; also see: *Archaeology in India 1953-54.*
 4. PASCOE, E. 1950, p. 469-83
 5. WAYLAND, "Outlines of the Stone Ages of Ceylon", *Spolia Zeylanica*, XI, p. 185.
 6. NOONE, N. A. and H. V. V. "Stone Implements of Banderwala" *Ceylon Journal of Science*, Vol. III, pt. I, Nov. 1940, pp. 1-23.
 7. DERANIYAGALA, P. E. P. "The Stone Age and Cavemen of Ceylon", *Journal of the Royal Asiatic Society, Ceylon Branch*, Vol. XXXIV, No. 92, 1939.
 8. The Prehistory of Ceylon, particularly the later phases have not yet been studied properly. But Deraniyagala's Balgonda culture, no doubt possesses a number of heavier tools like perforated mace heads and "pecked picks". But the most interesting feature is a number of pitted stones. Such types are rare in India and the writer can recall only the material from the Kolar District, lying unpublished in the store rooms of the Department of Archaeology, Mysore State. There are a few in the Cunningham collection in the British Museum coming from the "Kaimur ranges". But the absence of chipped and ground axes, chisels etc., is quite significant in view of the extensive work carried out by Dr. Deraniyagala.
- DERANIYAGALA, "Some Aspects of the Prehistory of Ceylon—Part III. The Balgonda culture." *Spolia Zeylanica*, 27, 1, 1953, pp. 126-131.

We have already discussed the material culture of the Megalithic folk. But there seem to have been a strong additional stimulus, provided by the rapidly expanding kingdoms of the Gangetic basin, immediately succeeding the first impacts of Hinduism and the Sanskrit language (symbolized in the early Tamil literature by traditions of Agastya and Parasurama). In the wake of the proselytizing Buddhism and Jainism, the Mauryans carried their imperial sceptre to the borders of Mysore. These must have provided a great stimulus and impulse towards literary pursuits into the completely free and independent kingdoms in the south.¹ Another important factor was the discovery of monsoons and the Roman trade. The concentration of the hoards of Roman coins in the south (Fig. 41) and the ware houses at Arikamedu are too well-known to need a repetition. It is no wonder that this great era of prosperity coincides with the historic third Sangam, whose extant works are dated to the early centuries of the Christian era.²

1. ".....the language of the short Brahmi inscriptions of the third century B.C. was Tamil, still in its formative stages, with an admixture of words of clearly Sanskritic origin. In the poems of the Sangam anthologies, the Tamil language has reached maturity and begun to serve as a powerful and elegant medium of literary expression, and has already received and assimilated many words and ideas from Sanskrit sources".

NILAKANTHA SASTRY, K. A. *A History of South India*, Madras, 1955 p. 112.

2. NILAKANTHA SASTRY, K. A. K. *Cholas*. Vol. 1, 1935, p. 36.

Gujarat

Among the areas of relative isolation, Gujarat is very typical and its geographic position has secured for it, its place in Indian archaeology. This area has been subjected to a series of intensive studies by the Departments of Archaeology, of the Baroda University and the Governments of India and Bombay. Gujarat really speaking consists of three natural sub-divisions: Anarta (North Gujarat and portions of Rajaputana), Saurashtra (the peninsula of Kathiawad) and Lata (South Gujarat and Konkan). This difference is very significant, since Anarta more or less corresponds to the semi-arid loessic zone, and Lata is coextensive with the fertile coastal strip and Konkan. This story is not belied by archaeology.

Discussing one of the major lineaments of Indian History, Spate¹ points out that one of the basic structure-lines "runs slantwise from about Muttra on the Jumna above Agra, along the Aravallis to the Gulf of Cambay". This line is very important and it marks the eastern limit of the Indus Valley Civilization, limit of the Achaemenid and Greek influences. Even in the historical periods, except for short periods of large States and empires, it was always a major boundary (See Figs. 34 & 35). On account of the dissected jungly country that separates Gujarat from Malwa, and its position under the shadow of the Rajaputana desert, Gujarat was a major shatter zone, "as shown by numerous States and Statelets (down to a population of 96 and areas of a square mile!)"

The Bombay Gazetteer sums up the whole history of Gujarat:

"The richness of Mainland Gujarat the gift of Sabarmati, Mahi, Narbada and Tapti and the goodness of much of Saurashtra the Goodly Land have from before the beginning of history continued to draw strangers to Gujarat both as conquerers and refugees".

"By sea probably came the half-mythic Yadavas (B.C. 1500-500); contingents of Yavanas (B.C. 300—A.D. 100) including Greeks, Bactrians, Parthians and Skythians; the pursued Parsis and the pursuing Arabs (A.D. 600-800); hordes of Sanganian pirates (A.D. 900-1200); Parsi and Navayat Musalman refugees from Khulagu Khan's devastation of Persia (A.D. 1250-1300); Portugese and rival Turks (A.D. 1500-1600); Arab and Persian gulf pirates (A.D. 1600-1700); African, Arab, Persian and Makran soldiers of fortune (A.D. 1500-1800); Armenian Dutch and French traders (A.D. 1600-1750); and the British (A.D. 1750-1812)".

By land from the north have come the Skythians and the Huns (B.C. 200-A.D. 500), the Gurjaras (A.D. 400-600), the early Jadejas and Kathis (A.D. 750-900), wave on wave

1. SPATE, *op. cit.*, p. 604.

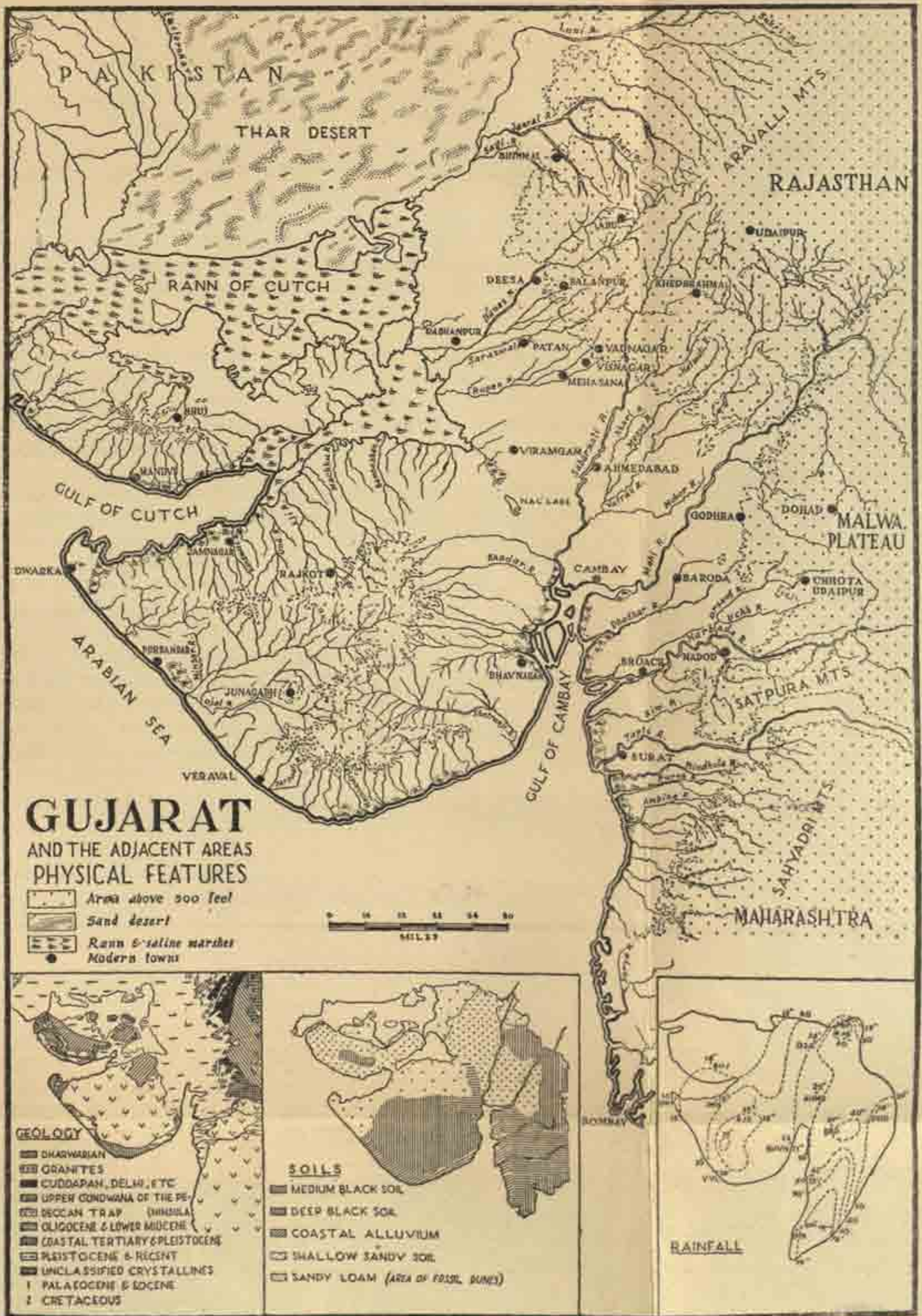


Fig. 34.

of Afghan, Turk, Mughal and other northern Musalmans (A.D. 1000-1500), and the later Jadejas and Kathis (A.D. 1300-1500) : From the north-east the Pre-historic Aryans till almost modern times (A.D. 1100-1200) continued to send settlements of Northern Brahmins ; and since the 13th century have come Turk, Afghan and Moghul Musalmans ; From the east have come the Mauryans (B.C. 300), the half-Skythian Kshatrapas (B.C. 100-300 A.D.), the Guptas (A.D. 380), the Gurjjaras (A.D. 400-600), the Moghuls (A.D. 1530) and the Marathas (A.D. 1750) : And from the South the Satakarnis (A.D. 100), the Chalukyas and Rashtrakutas (A.D. 650-950), occasional Musalman raiders (A.D. 1400-1600), the Protugese (A.D. 1500), the Marathas (A.D. 1660-1760) and the British (A.D. 1780-1820) " 1

What a brilliant commentary on the history of Gujarat ! Before the advent of the Solankis, the first strong political power rooted in Gujarat, it was part of the conflicting empires to its north, south or east. The Maitrakas before them gave a semblance of unity, but they never ruled the whole of Gujarat. It was the long rule of the Solankis, followed by the Sultanate of Delhi, and then of Gujarat, that gave political homogeneity to this relatively isolated area.

A very fine example of how the movement of the Muslims and the establishment of their power in the nuclear regions of Northern India affected the regions like Gujarat is discussed by Dr. Goetz. 2 " The Muslims had merely a limited control over India, content with smashing the power centres and life nerves of the Hindu Society, by massive expeditions from a few strategic bases. Fleeing from the Muslims, the Rajaputs and Brahmins wandered in search of new kingdoms and strongholds and threw themselves on the more backward independent feudatory States and Tribal communities in the Thar desert, the Central Indian hills and the Himalayan ranges. " For example the Chahamanas migrated from Bagardesa, Delhi and Ajmer to Nirmana, Ranthambor, Sirohi and finally Pavagadh-Champaner, Chota Udaipur and Devgad Baria. The Rathors turned up in Marwar and the Bundelas overthrew the Chandelas. The Tomaras migrated to Nurpur in the Beas valley. Thus these major incursions into the main focal regions set in a sort of radial migration resulting in a chain of movements.

The most interesting area is Kathiawad. On account of its proximity to the Indus basin, we find the direct penetration of the Indus Valley cultures of the III Millennium B.C. The earlier

1. A. M. T. JACKSON. *Bombay Gazetteer* Vol. I. Pt. I. pp. 1-2.

2. GOETZ, HERMANN. " The role of Gujarat in Indian Art history ", *Bulletin of the Baroda Museum and Picture Gallery*. III. pt. 1. 1945-46. pp. 1-12.

excavations of M. S. Vats,¹ G. S. Ghurye,² H. D. Sankalia and M. G. Dikshit³ at Rangpur have been followed by large-scale work of S. Ranganatharao.⁴ Now there is no doubt about the Harappan affinities of the site, with the further excavations at Lothal, "where systematic town-planning was brought to light in addition objects, including seals, typical of the classical Harappa".⁵ Thus it represents the southernmost extension of this culture known so far. *At Lothal and the earlier site of Rangpur, Harappan and its derivative Post-Harappan cultures are seen in isolation.* Fortunately we are in a better position to correlate these cultures in a general framework of regional chronology of Kathiawad, as a result of extensive explorations carried out by P. P. Pandya⁶ and the excavations carried out by the writer jointly with Pandya, at Somnath, Amra and Lakhabawal⁷. These excavations at Somnath, continued by Pandya,⁸ have thrown further light on the culture sequence. Hence an attempt will be made now to construct such a sequence for Saurashtra with Somnath providing the main framework. (Fig. 35)

We have also discussed the Langhnaj Microlithic Culture of the Late Stone Age and it can claim certain considerable antiquity, on account of its association with "a buried soil" marked by a wetter climatic conditions. At Langhnaj itself, we have the continuation or survival of microlithic elements. The map, (Fig. 18.) shows again a widespread distribution of microliths in all the main river systems, confined to the slopes of the hills to the east of Gujarat. Similarly Foote found a number of microlithic sites in the Dhari prant of Amerli District, Saurashtra. Since we have not yet found a full-fledged Neolithic culture (and it is very unlikely in view of the factors discussed elsewhere), one has very good reasons to suspect a survival of the Late Stone Age hunting communities in Gujarat. They might have learnt pottery and even primitive agriculture from their neighbours. Fortunately rough limit of this culture is available. They were found in a gravel lens below the Proto-historic occupation.

The next phase is marked by the appearance of Harappan settlements at Lothal and probably Rangpur too. The latter has not been explored properly and hence all the confusion that

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1. VATS, M. S. Annual report of the Archaeological survey of India, 1934-35.
 2. GHURYE, G. S. "Excavations at Rangpur"—*Journal of the University of Bombay*, Vol. VIII, No. 3, July 1939, pp. 3-11.
 3. DIKSHIT, M. G. "Excavations at Rangpur", *Bulletin of the Deccan College Research Institute*, Vol. XI, No. 1, 1951.
 4. *Archaeology in India*, 1953-54.
 5. *Indian Archaeology*, 1956-57, p. 1.
 6. PANDYA, P. P. "Archaeological explorations in Halar and Sorath districts", *Journal of the M. S. University*, III No. 2, Oct. 1954.
 7. *Indian Archaeology*, 1955-56, p. 7.
 8. *Indian Archaeology*, 1956-57, p. 16.

PHYSICAL MAP OF GUJARAT

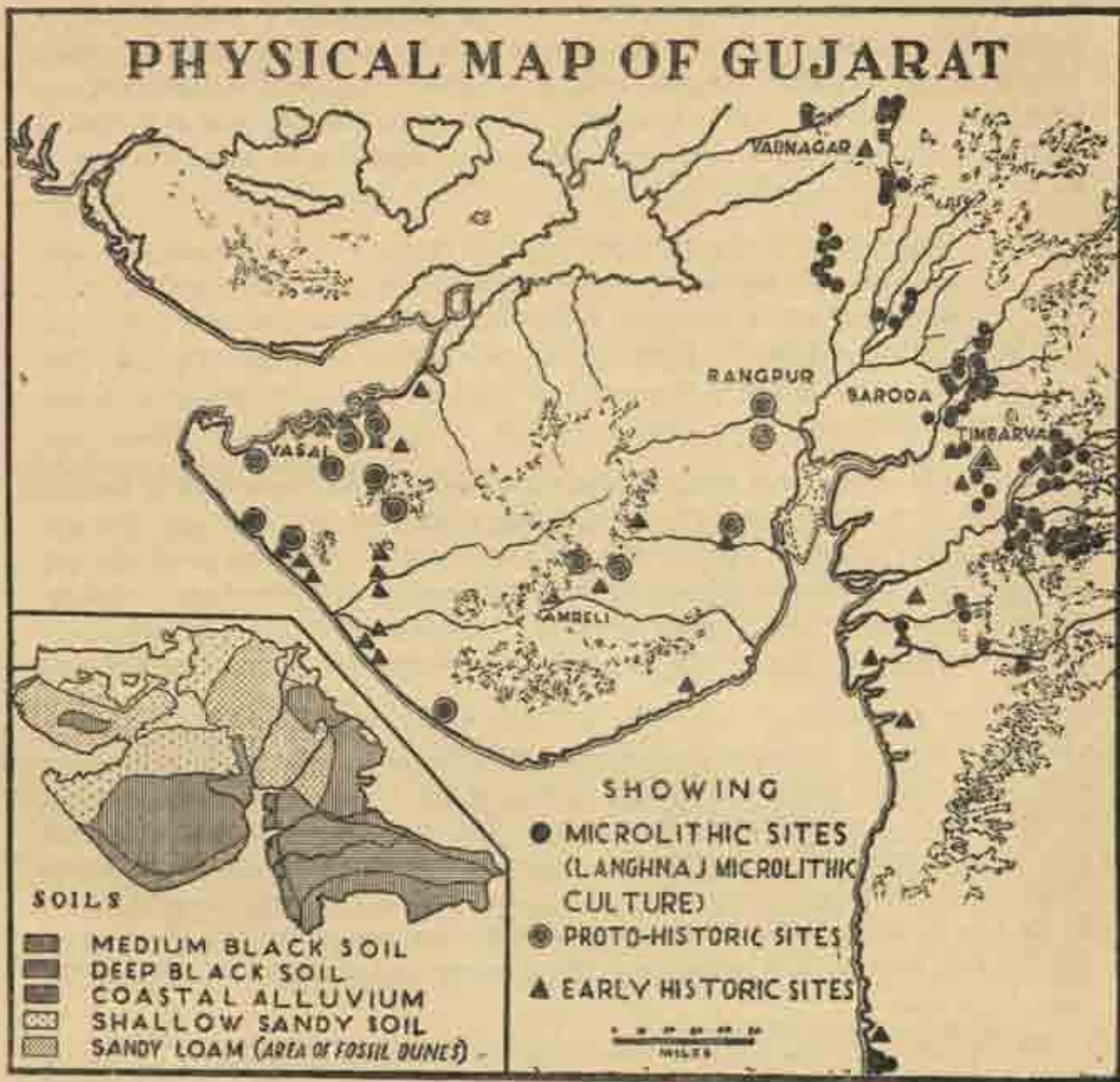


Fig. 35.

has arisen. But it must be said to the credit of M. S. Vats¹ that he touched the structural levels in his trenches A and B. He reported typical Harappan bricks, as also mud brick structures. In view of the brilliant discoveries of S. R. Rao at Lothal, we know more about them now. Owing to the fact that only short accounts have been published so far in *Indian Archaeology* it is not proper for us to go into any details of structures or other antiquities. Yet, it may be pointed out that Lothal is an extensive outpost of the Harappa Civilization on the south-east coast of Kathiawar. But without anticipating the discussion on chronology, it is appropriate to quote the opinion of M. S. Vats :

"Despite these, however, the highly developed shapes, certain dishes with or without stands and realistic paintings all representing the acme of the potter's art, point to a phase which must undoubtedly be later than the *Early* or *Intermediate* periods of Mohenjo-Daro or Harappa. Provisionally, it may be taken to correspond with the *Late period* of the Indus valley sites or perhaps intercalated between that and the date of Cemetery-H at Harappa".²

Thus at least, we have to state that there was an overlap of the lowest levels of Rangpur with Lothal, considering the pottery published by Vats Pl. XIII and XIV. At Lothal, the most significant pottery type, which marks the advent of a new tradition is the black-and-red ware with paintings. Naturally, the new technique was applied to the older and known forms of the local Harappan, but, the bowl with a slightly everted rim and the bowl with an incipient beaded rim have no parallels at all in any of the Harappan forms. Both the types are associated at Amra.³

The next phase shows a wider distribution in space in Saurashtra, and by this time we have a large number of sites covering the entire peninsula of Kathiawad. At Rangpur, the Harappan survives in a modified form and is described by the excavator as IIB. At Somnath, however, the earliest phase is characterized by the occurrence of corrugated or broadly incised ware with a typical blade industry of agate, chalcedony, with crested ridges. On account of the thinness of the deposits, and the general resemblance of these incised decorations with the painted designs on the Late Kathiawad Harappan (Rangpur IIB), this has been provisionally described as Somnath Ia.⁴ Somnath Ib. is characterized "by the appearance of painted pottery in profuse

1. M. S. Vats, *ARASI*, 1934-35, p. 35.

2. The whole range of Indus valley pottery forms and designs is being studied by one of my pupils and colleagues Shri P. P. Pandya.

3. At the symposium held at Delhi in September 1957, all the available forms were not displayed and hence could not be discussed.

4. This sub-division and diversification of Ia and Ib at Somnath was repeated at Rojana in Madhya Saurashtra. Information kindly supplied by Shri P. P. Pandya.

quantities. The shapes and painted patterns comprised two distinct traditions—the one represented by the late Harappan ceramics of Gujarat consisting of the dish-on-stand, sauce-pan handle, etc., and the other by the round bowl with an incurved and bevelled rim distinctively painted with panelled patterns somewhat similar to the motifs on the Chalcolithic painted pottery of Central India.¹ For convenience this can be described further as "Prabhas Ware". Further, a few sherds with paintings in brown, black or violet on a white or creamy slip resemble those from Ahar as well as Navdatoli. At Lakhabawal, on the north coast of Kathiawad, the lowest phase belongs to Somnath Ib, though a very few sherds of the Prabhas ware were found.

A large number of sites yielding this mixture of Harappan and Prabhas ware, were found by Pandya in Sorath and Madhya Saurashtra, but, we are not yet in a position to find out its origin. It is very important for comparative stratigraphy, as it provides a sure link with Central India and Rajasthan and also helps us in fixing the Kathiawad Harappan in its proper context. It also strengthens the possibility of Rangpur marking an isolated pocket of late Harappan elements, due to an isolated survival of Harappan ceramic without the new elements as in the rest of the Kathiawad peninsula.

The next phase marks the advent of a new element into Kathiawad. At Somnath, as well as at Amra, we see the appearance of a new technique of surface treatment, consisting of bright red, highly burnished surface, almost giving a mirror like polish. This belongs to phase II at Somnath and phase I at Amra. The most distinct form is the carinated bowl and other late Harappan forms. Even at Rangpur IIC and III, we have the appearance of the new tradition or technique and naturally it becomes dominant in III.

But it is very necessary to recall an elementary principle of culture dynamics, that if a new trait appears in a culture more mature or developed than the intruding one, we see in the resulting mixture, the dominance of the resident trait *i.e.* Harappan in the case of Rangpur. Similarly at Somnath, some of the decorative patterns on the Prabhas ware occur on the lustrous red ware. At Somnath, a subdivision was made of Phase II. The other decorative motifs were more sophisticated, and include loops with hatched lozenges, hatched columns with volutes, antelope etc. There were rubble structures and pavements associated with this phase.

The third phase at Somnath marks the end of the Proto-historic sequence, and the beginning the Early Historic period with black-and-red ware and Iron. Of its four sub-periods, N.B.P. appears in the 2nd and gives a fairly solid datum, as it can be ascribed to the Mauryan expansion

1. *Indian Archaeology*, 1956-57: p. 16.

into Kathiawad. This sequence neatly ties up with that at Timbarva in Gujarat¹ and Ujjain and Maheshvar and a number of minor antiquities also supports this comparative stratigraphy (500-100 B.C.).

The fourth phase is characterized by the absence of the black-and-red ware, which is replaced by a coarse gritty ware in association with plain red, black and grey un-slipped wares. This ties up with Vadnagar,² where it is found in association with a punch-marked coin, and also at Timbarva. This can be dated to 100 B.C. to 100 A.D.

The fifth phase belongs to the Kshatrapa, Gupta and Maitraka and is characterized by large quantities of Red Polished ware, Gupta and Maitraka coins (nearly 200 found in the first season) and can be provisionally dated to the period from 100 to 600 A.D. This sequence ties up with a number of other excavations—Amreli, Vasai, Amra, Lakhabawal in Saurashtra and Vadnagar, Baroda, Timbarva and Variav in Gujarat.³

Thus within the framework of a comparative stratigraphy based on the excavations at Lothal, Rangpur, Somnath, Rojana, Amra and Lakhabawal, we have a fairly continuous sequence of cultures beginning with the Harappan. Let us discuss the chronology—relative as well as absolute. (Fig. 36).

In terms of a relative sequence the earliest is the pure Harappan at Lothal and probably Rangpur IIa. While the Harappan continues in a modified or decayed condition into Rangpur IIb and IIc, we see a new admixture of these late Harappan traits with an equally widespread Prabhas ware, thus equating Rangpur IIb with Somnath IB and Lakhabawal I. Phase II_a at Somnath is equivalent to phase IIc and III of Rangpur. In passing, it may be observed, that where there are no structural remains, the thickness of the deposit in itself becomes very risky as a criterion of dating.

About the absolute chronology, we have already pointed out the danger of accepting any single arbitrary date—be it based on Sargonid link or Bahrein link. (See section on chronology). We will be ignoring culture dynamics by using one single date for the Harappan from the foot hills of the Himalayas to the south coast of Kathiawad. Hence much depends on the true epi-centre of this civilization and then we have to provide for its spread in time and space. The possibility of Kathiawad being such a centre is remote.

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1. MEHTA, R. N. *Excavations at Timbarva*, 1958. M. S. University Archaeology series. 2. Baroda. 1955.
 2. SUBBARAO AND MEHTA, *op. cit.*
 3. SUBBARAO B., *Baroda through the Ages*, M. S. University Archaeology series No. 1. Baroda. 1953. Appendix I, p. 56.

On the other hand, we can use our relative stratigraphy for this purpose. The appearance of iron and the associated dominance of black-and-red ware over such an extensive region covering Central India and the Deccan peninsula, and now its extension into coastal Gujarat, as well as Kathiawad, is of great significance. Even if we assume the beginning of iron about 500 B.C., a reasonable time scale would be to allot about a thousand years to the whole range of Proto-historic cultures beginning with a Harappan. This would allow for the large number of interlinks or contacts between the Pre-N.B.P. Chalcolithic cultures of Central India and the Deccan, with Grey wares on the one hand, and the late Harappan sequence of Kathiawad. Recalling the dates suggested by Fairservis for the end of the Harappa in their peripheral zones, we can at best treat the Harappan cultures of Lothal as a younger contemporary of the Cities of Harappa and Mohenjo Daro, if they do not represent a southward displacement of the culture, after the advent of the Aryans.

The most remarkable feature of Gujarat is its bifurcation into two distinct ceramic zones based on the absence or presence of a strong black-on-red painted tradition. In North Gujarat, Vadnagar shows a survival of a rich painted pottery right into the early centuries of the Christian era. This is very significant in view of the similar evidence from Bhinnamal and Rangmahal in Bikaner. On the other hand, the excavations conducted at Baroda, Timbarva, Variav, do not yield any painted pottery in the same Kshatrpa levels associated with Red Polished ware and Kshatrpa coins, which are common to both South and North Gujarat.

This evidence was carried further into Kathiawad by the excavations already referred to at Amra, Lakhabawal and Somnath. While there is a rich painted black-on-red ware with the Red Polished ware on the N. coast of Kathiawad, there is not a trace of it in Somnath in Period IV. Thus North Gujarat shows a sequence which is very similar to that of the northern half of the Kathiawad peninsula.

In southern Kathiawad, with its wider coastal alluvium and the Black soil in the central part of the peninsula, we find more extensive settlements suggesting a migration from across the peninsula to the richer environments capable of sustaining larger populations. Naturally, this area of Saurashtra plays a vital role and shows contacts with South Gujarat across the Gulf of Cambay. Thus the reported discovery of Post-Harappan sites on the banks of the Narbada (Mehgam and Telod)¹ is very significant, as also the link of Period III at Somnath with Period I of Timbarva in South Gujarat, both associated with N.B.P. and iron.

1. *Indian Archaeology*, 1956-57, p. 1.

CULTURE SEQUENCE IN GUJARAT

SAURASHTRA AND N.GUJARAT	SOUTH GUJARAT	PERIOD	SOUTH GUJARAT	SAURASHTRA AND N.GUJARAT
??		EARLY MEDIEVAL	MEDIEVAL PAINTED WARE (BLACK-ON-WHITE-ON-RED) GADHIA AND WALABHI COINS	??
		EARLY HISTORIC II 100-600 A.D.	PLAIN BURNISHED AND RED SLIPPED WARES RED POLISHED WARE KSHATRAPA COINS AND ROMAN ANTIQUITIES TIMBARVA II SOMNATH IV	BLACK-ON-RED PAINTED WARES, RED POLISHED WARE, KSHATRAPA AND LOCAL COINS-ROMAN ANTIQUITIES. VADNAGAR II AMDA II LAKHABAWAL II
 BLACK-AND-RED WARE IRON N.B.P. SOMNATH III	 NBP	EARLY HISTORIC PERIOD I 400 B.C. to 100 A.D.	BLACK-AND-RED WARES, N.B.P. IRON. TIMBARVA I	POSSIBLE CONTINUATION OF THE PAINTED TRADITION IN POTTERY IN SOUTH KATHIAWAD SOMNATH III
		POST K. HARAPPAN LATE K. HARAPPAN KATHIAWAD HARAPPAN	A FEW OF THE HARAPPAN SETTLEMENTS OCCUR IN THE DELTAIC REGIONS OF TAPI AND NARMADA IN THE INTERIOR THERE SEEMS TO BE A SURVIVAL OF LATE STONE AGE HUNTING COMMUNITIES	RANGPUR II C & III SOMNATH II AMRA I RANGPUR IIB SOMNATH IA & IB LAKHABAWAL I LOTHAL RANGPUR IIA HARAPPAN EXTENSION INTO GUJARAT
		LATE STONE AGE	GEOMETRIC MICROLITHIC INDUSTRY	
		EARLY STONE AGE	ABBEVILLE-ACHEULEAN HAND AXE AND CLEAVER INDUSTRY.	

Fig. 37.

In the semi-arid areas, we find, on the other hand, the survival of a primitive stone age economy, which definitely preceded the Harappan at Rangpur. In a gravel and sand lens exposed below the natural soil in the trench at Rangpur were found a few microliths. But this culture got isolated at the eastern and southern fringes of the desert of Rajaputana. These microlith using communities lived happily on the wind blown dunes on the banks of rivers or groups of dunes surrounding natural ponds. They were using hand made pottery (always found in very small fragments). The excavations at Vadnagar the ancient "Anartapura" have shown that the settlement started on one of these groups of dunes surrounding a pond about the beginning of the Christian era or slightly earlier. It grew into an extensive township in the early centuries of the Christian era, under the aegis of the Kshatrapas.¹

Curiously this story repeats itself with a slight variation in the coastal belt of South Gujarat. Here, we have a narrow strip of land between the saline wastes on the west and the hills in the east, with a number of Early Historic sites mostly of the Kshatrapa period. A few late Harappan sites have also been reported from the coastal strip. In a very interesting inscription, we find reference to a series of Brahmin settlements along the fords across the rivers of South Gujarat mentioned by Ushavadatta in his Nasik inscription. The possibility of the penetration of Central Indian influences through the Narbada and Tapi valleys is indicated by the ancient settlements of Broach on the Narbada and Kamrej on the Tapi. Near the hallowed town *Kayavarohana* of Lakulisa, the founder of the Lakulisa sect of Saivism, an excavation was conducted by Shri R. N. Mehta of the Baroda University at Timbarva.² Here the earliest phase is characterized by the N.B.P. and the black-and-red ware, and it underlay the deposits of the Kshatrapa period.

But the whole area shows a very rapid development with the acceleration of the sea trade in the Kshatrapa period. For the first time, we can link up the whole area of Gujarat and Kathiawad by the widespread occurrence and use of a distinctive Red Polished ware, showing a technical affinity to Roman Red wares. Curiously this influence is also attested by the circumstantial association of Graeco-Roman antiquities like a fine cameo from Karvan,³ the bronze handle with the figure of Eros from Baroda etc.⁴

In conclusion it is very interesting to note that in Gujarat, as in the other littoral provinces separated from the mainland by difficult communications, the maritime influences have kept the

1. SUBBARAO, B. and MEHTA, R. N. "Excavations at Vadnagar", *Journal of the M. S. University*, Vol. IV, No. 1, 1955.

2. MEHTA, R. N. "Excavations at Timbarva", M. S. University Archaeology series 2, Baroda, 1955.

3. MEHTA, R. N. "A cameo from Karvan", *Journal of the M. S. University*, Vol. III.

4. DEBAL, MAGANBIHAL. "Some Roman antiquities from Baroda Museum", *Bulletin of the Baroda Museum and Picture Gallery*, VII. 1951.

window open and enabled a local or provincial development. Even the earlier Harappan element seems to have penetrated by sea from Cutch and Sind. This province again comes into lime-light with the Kshatrapas and Sassanian contacts.

To sum up the position, the archaeological sequence in Kathiawad does not belie its history and its function in the historical geography of India. Hence this long story of survival and deterioration fits into the geographic picture of Gujarat, as an area of relative isolation from the rest of the sub-continent, and a simultaneous window to the influences from across the seas. Further work will be necessary to confirm this hypothesis and, more than anything, an independent absolute date for the Lothal is a great desideratum. Thus it will be seen that the so-called "Dark Age" ceases to be dark already!

Assam

Unfortunately we know very little of Assam. Sunitkumar Chatterji¹ pointed out that the Brahmaputra was not included in the traditional holy rivers of India. Kamarupa does not occur in Sanskrit literature before the Christian era. Actually the earliest epigraphic mention seems to be that of Samudragupta in 330 A.D. in his Allahabad pillar inscription. It is very difficult to corroborate the claims made for the antiquity of higher cultures in Assam on the basis of the so-called mention in the *Mahabharata* of Pragjyotisha which according to Chatterji himself, is a later Sanskritization from an Austric word.

The archaeological evidence points to a long survival of Stone Age or Neolithic communities. Coggin Brown² has pointed out the occurrence of a Burmese type of celt (the shouldered celt) in Assam. Recently exhaustive studies of Dr. A. H. Dani have shown even influences from Yunnan, China. Hence we can expect a late penetration of higher cultures, probably in the Historic period.

Orissa

Similarly, the ancient history of Orissa is yet to be unfolded by systematic field studies. Physically, Orissa is divided into two distinct zones: the narrow coastal alluvium differing in width from fifteen to forty miles covering the districts of Ganjam, Puri, Cuttack and Balasore; the hilly upland which is part of the Vindhyan Complex with hills of crystalline and metamorphic series.³ Significantly these divisions are recognized by distinct names. The upland country is called 'Udra' or *Odhra*. It is still the main centre of the tribal and backward areas of Orissa.

1. CHATTERJI, SUNITKUMAR. *Place of Assam in the history and Civilization of India*. Gashati, 1955.

2. BROWN, COGGIN J. *Catalogue of Pre-Historic antiquities in the Indian Museum*. Calcutta, 1917. p. 130.

3. GANGOLY, MANMORHAN. *Orissa and her remains—Ancient and Medieval*, Calcutta, 1912. p. 239.

The coastal plain is divided by the Mahanadi into two parts : the northern called the 'Utkala' (significantly suggestive of Aryan influences) and the southern called 'Kalinga'.¹ The northern boundary of Utkala and the southern boundary of Kalinga have always depended on fortunes of political struggles.

In spite of our abundant knowledge of the temples and other monuments of the Early historic and Medieval periods, the main sequence of cultures has not been studied in detail. The first glimpse is provided by the excavation of B. B. Lal at Sisupalgarh.² Since we have a consistent literary and epigraphic evidence of Kalinga as a highly cultured area even by the time of Asoka's conquest in 246 B.C., we can assume an earlier infiltration of Gangetic valley influences through Magadha and Kosala. Significantly Panini mentions Kalinga for the first time.

According to Lal the earliest deposits at Sisupalgarh roughly belong the Mauryan period and thereabouts. In view of the more recent evidence about the date of the black-and-red wares and the date of the N.B.P., it is not unreasonable to assign slightly earlier dates to these levels. In the Department of Anthropology of the Calcutta University, there are two shouldered celts alleged to have come from Sisupalgarh.³ In the Museum at Bhuvaneshvar, there are nice shouldered and chipped celts from Athgarh (west of Cuttack) and Angur (Dhenkanal district) and Ranpur (Puri District).⁴ As already referred to, Tamluk in the Midnapore district has yielded evidence of an earlier 'Stone axe culture' being succeeded by the Gangetic valley influences indicated by the N.B.P. etc. Hence it is not unreasonable to infer a similar sequence in coastal Orissa.⁵

The excavations, conducted by Smt. Debal Mitra at Jaugada, Ganjam District, confirm this story. At this site with an Asokan inscription, a neolithic culture was found vaguely represented at the site by a few stone celts of oblong section *and one of them occurs immediately above the natural soil*. The next phase links with Sisupalgarh with black-and-red ware and iron.⁶

The wide alluvial plains seem to have been colonized by adventurous Aryan groups from the Gangetic valley and Central India. There are two possible routes : one across south Kosala and through the Mahanadi valley and the second along the coast from the delta of Bengal. The

1. MEHTAB, HAREKRISHNA. *The History of Orissa*. Radhakumud Mookerji Endowment Lectures, 1947. Lucknow, 1949. p. 2.

2. LAL, B. B. "Sisupalgarh 1948", *Ancient India*, No. 5. New Delhi.

3. I am very much obliged to Shri Dharani Sen for this information.

4. I am grateful to Shri P. Acharya, Superintendent of Archaeology, Orissa, for this information.

5. In the month of May, the author jointly with Prof. G. S. Das conducted an excavation in the neighbourhood of Sisupalgarh. In one of the section cleanings, a fine core of chert was found. It should be followed up.

6. *Indian Archaeology*, 1956-57.

last seems to be the more probable, in view of the existence of two Asokan inscriptions along the coast at the junction of Andhra and Kalinga. This is also borne out by the finding of Rouletted ware at Tamralipti and Sisupalgarh.

Kerala

Kerala is almost a *terra incognita*, for the same reason that no systematic excavation has ever been carried out of any habitation site, except a few megaliths.

Finally, as already indicated, the isolation of most of the larger river basins of the country was broken during the early historic period by the development of a vast net work of communications, and the consequent expansion and colonization of large scale agricultural communities under politically stable and economically prosperous conditions.

VIII

AREAS OF ISOLATION—TRIBAL INDIA

Lastly, we come to those areas, which have become the blind-alleys of civilization in India. The knowledge of the development in the favourable areas, and the material life in the unfavourable environments, helps us to understand the stage when they were isolated. The essence of civilization is the progressive emancipation of man from the influence of his natural environment by its understanding, exploitation and finally its mastery. Thus there is always at any time, an essential equilibrium between the various factors like the physical environment, and human communities in relation to their material culture and technological achievement. When any one of these factors changes, the ecological balance is upset. Then the "adaptive vitality" of man provides an answer, which ultimately results in the progress or stagnation of the relevant human communities, depending on their degree of adjustment to the new conditions. It is idle to speculate, what would have happened if the Neolithic revolution did not take place in the Middle East. Yet, it is more interesting to recall that certain factors, which we need not enumerate here, operated in its favour.

But in areas, where these conditions were not favourable, certain communities had remained predominately in a food gathering and hunting economy, supplemented by primitive agriculture and stock-raising. This is not conducive to progress. This phenomenon can be very well-studied in Africa, where Prehistoric studies have made great progress. We see a continuous development of human cultures through the major part of the Pleistocene and Holocene ending in Mesolithic stage (Capsian) about 5000 B.C. At that stage, the Neolithic revolution took place. It is only in the vast alluvial plains of the Nile, that large scale agricultural communities could flourish and carry forward the torch of civilization. The rest of Africa survived in a primitive economy. In this process the desiccation of North Africa and the expansion of the deserts on either side of the equatorial forests sealed the fate of the continent.¹

This very situation on a smaller scale and with less disastrous effects, can be seen in India. As Prof. Haimendorf explains, " it is a phenomenon peculiar to India, that throughout the ages, great civilizations have arisen without obliterating or absorbing all that has gone before : the

1. " Growth and development were unequal and erratic across this vast continent of many climates and types of vegetation—or lack of vegetation."

DAVIDSON BASIL. "India and Africa", *Times of India*, June 12, 1958.

older and the more static cultures gave way not by disintegrating, but by seeking refuge in remote areas, uncongenial to civilization based on advanced agricultural economy. There can be no doubt that the so-called aboriginals, inhabiting such refuge areas, represent comparatively old and primitive types.⁷⁷

We have already defined these *culs de sac*, where people have managed to survive in a perfect ecological equilibrium in small communities with simple life suited to their technological attainments.

A study of the material life, specially in relation to their tools and weapons is very instructive, and at the same time throws light on the possible survival of early types of tools. This requires a more detailed investigation, to counteract some recent misleading inferences based on superficial comparisons of conditions in Africa and India, ignoring the more vital geographical and historical factors. Hence an attempt is made below to describe the material outfit of Tribal India.

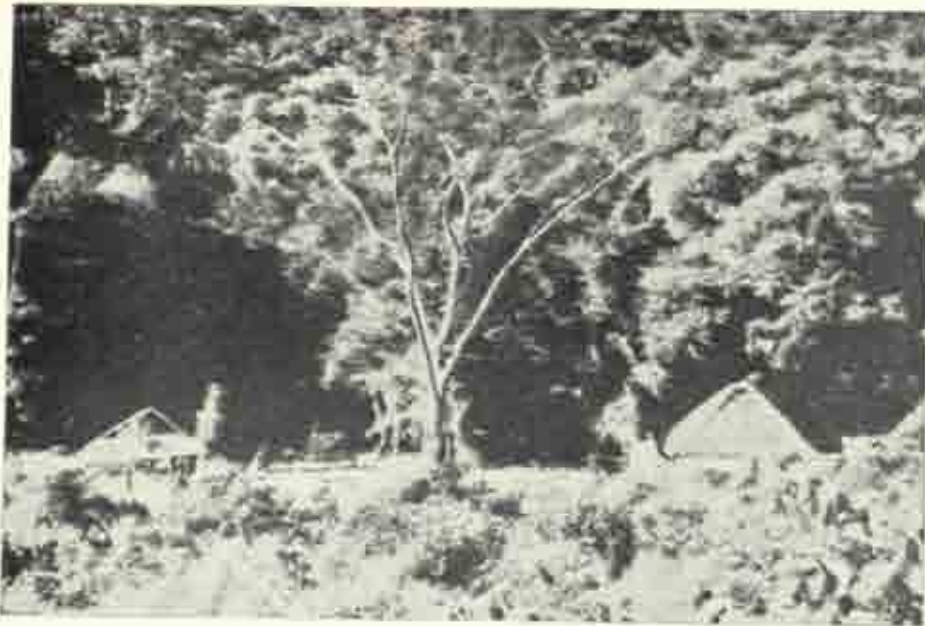
According to Prof. Haimendorf, the Chenchus are more or less, non-agricultural, food-gathering communities and their sole tools are pointed digging sticks, sometimes reinforced by a trapezoid piece of iron.⁸ The Kadar, according to Prof. Ehrenfels, leads more or less a similar life and is in no way better equipped. They erect bamboo dykes in the tanks and the fish are killed with a bamboo or a jungle knife.⁹ The Reddis represent an economy based on primitive agriculture and stock-raising, supplemented by wild plants and tubers. They freely use the iron implements. But in Eastern and Central India, we have more highly advanced tribes with a higher material culture and social institutions and rituals. But they represent a much more interesting case of a real refugee survival and adaptation to a different environment. While the simpler life of the peninsular tribes brings about a more perfect adjustment of their needs and resources, the tribes of Central India have a more advanced, but somewhat semi-parasitical economy. They partly depend on the institution of professional castes (to encourage specialisation) and division of labour and on trade with the technically advanced people. Elwin gives a fine reflection on the whole economic life of Middle Indian tribes.

"The actual rules of the tribe and caste operate to restrict greatly the materials that may be used; only special classes—and they are few of them—may work iron; pottery is taboo to all aboriginals and is now a monopoly of the Hindu caste; weaving also, except with bark yarn, is generally avoided. Baskets and mats are made by many tribes, or by

1. HAIMENDORF, C. F. "Culture Struts in Deccan", *Mon.* 1948, Art. No. 99.

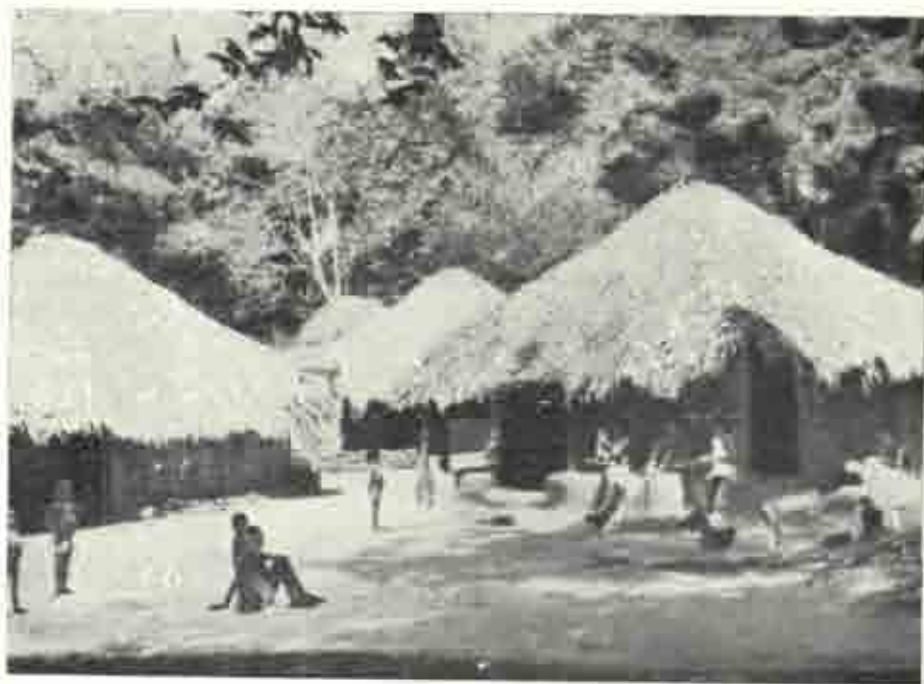
2. HAIMENDORF, 1948.

3. EHRENFELS, U. R. *Kadars of Cochin*, Madras, 1952, pp. 27 and 35.



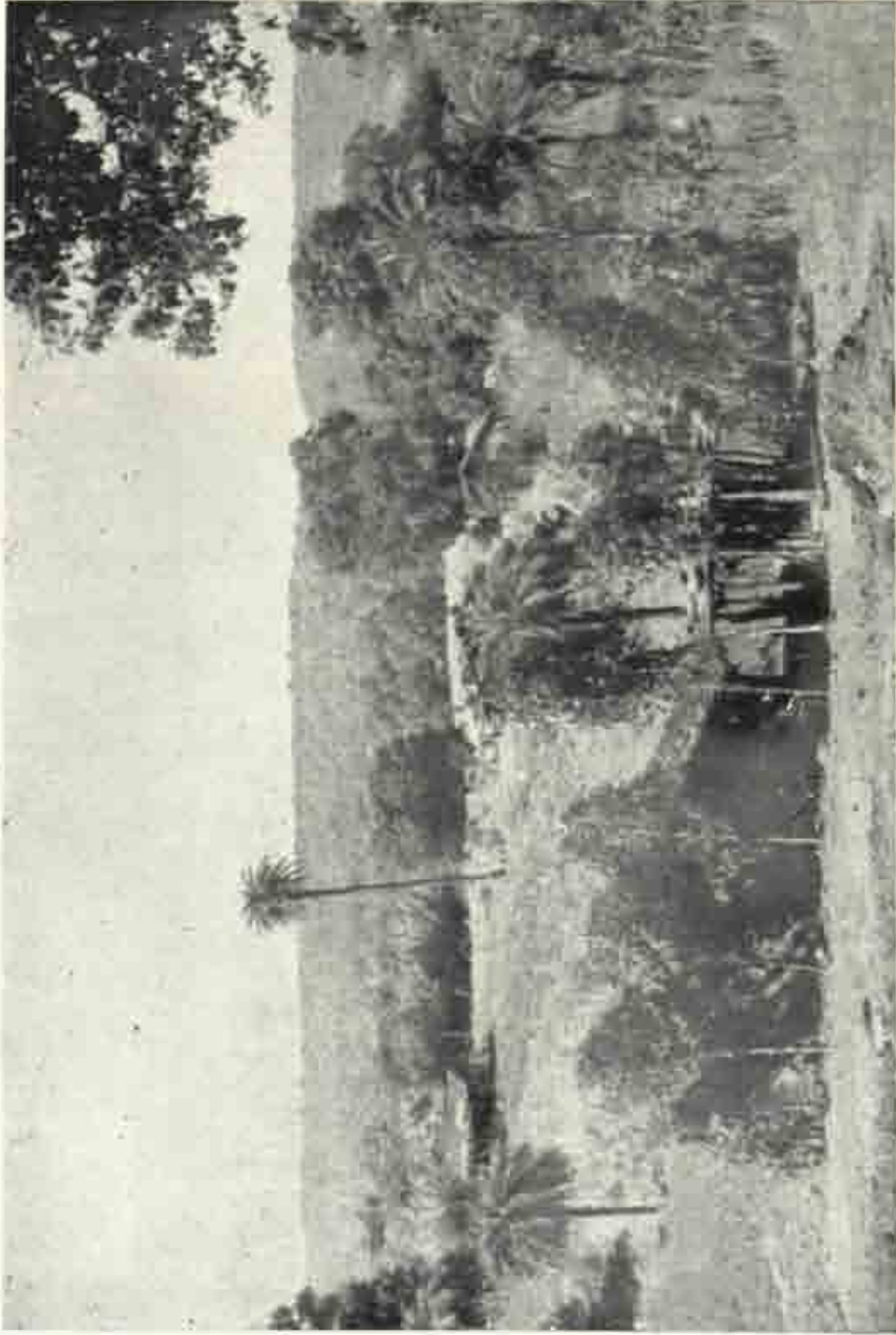
VIII. (1) The village of Kuttuvada near Papikonda (*Reddls of the Bison hill*).
(2) A Kolam house in Boramgutta (*Rajgonds of Allahabad*). *By Courtesy—Prof. Haimendorf*

PLATE IX

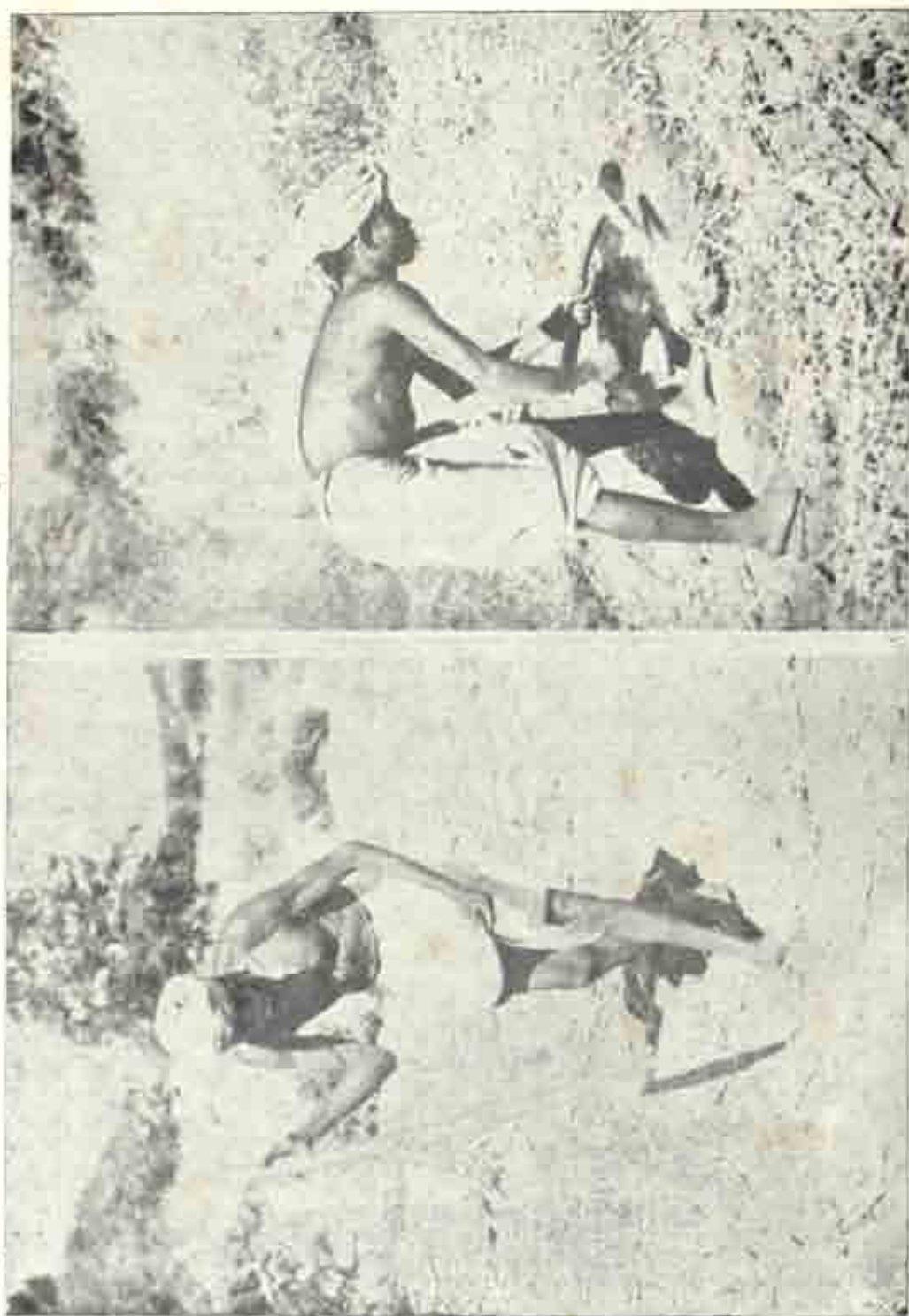


IX. (1) A Reddi village in the Godavary gorge—Telladibbala (*Reddis of the Bison hill*)
(2) Houses in the Rampachodavaram. *By Courtesy—Prof. Haimendorf.*

PLATE X



X. A typical Bhil village in the interior of Panchmahals, Gujarat. By Courtesy—Y. V. Surendranath.



XI. (1) A Kolam dibbling millet with a digging stick.
(2) A Kolam hoeing his field *Rajmonds of Adilabad.* By C. Hartley—Prof. Haimendorf.

sections of them, but it has remained for the castes specially devoted to it to develop it into an art. Work in brass is strictly forbidden and the Ghasia is one of the most despised of the Hindu castes. This leaves nothing but mud and wood with which the tribal artist can work".¹

He has also explained the curious result of this viz. the employment of the members of the lower caste Hindus to do some of their essential ritualistic objects. The Bison Marias employ the Hindu carpenters of the plains to carve their wooden funerary posts. Similarly, the wandering smiths, called Loharias, who move with all their family and workshop equipment in one or two carts, set-up their smithies outside the villages and towns. Valentine Ball has left a detailed account of the primitive furnaces used by the Agurahas for smelting the iron ores.² These factors operate to break the isolation of these tribes to some extent.

Mrs. Iravati Karve has discussed the interrelation between the so-called primitive tribes and the other people and has shown the contrast between the position in India with that of America, New Zealand and Africa, where the "Whites and the primitives developed apart in space and time". In India the primitives and others lived together for over two or three thousand years. The primitives have almost all the social institutions and elaborations of the non-primitive, while the Hindus actively share all the beliefs of the primitives."³

Besides, we should not forget that the so-called tribal areas are also the chief sources of raw materials like minerals and timber. This has probably enabled a harmonious development

1. ELWIN, VERRILL. *The Tribal Art of Middle India*, Oxford, 1951. p. 2.

2. Agurahas are one of the 12 tribes among the Munda group of Chota Nagpur plateau and Central India. They are professional iron smelters.

"The furnaces of the Agurahas are generally erected under some old tamarind tree on the outskirts of a village, or under sheds in a hamlet where only Agurahas dwell, and which is situated in convenient proximity to the ore or to the jungle where charcoal is prepared. The furnaces are built of mud and are about three feet high, tapering from below upwards from a diameter of rather more than two feet at base to eighteen inches at top, with an internal diameter of about six inches, the hearth being somewhat wider. A bed of charcoal having been placed in the hearth, the furnace is filled with charcoal and then fired. The blast is produced by the usual kettle drum like bellows, which are worked by the feet. From time to time, ore and fuel are sprinkled on the top of the fire, the proportions used not being measured, but probably the operators are guided by experience as to quantities of each which produce the best results. From time to time, the slag is tapped off by a hole pierced a few inches from the top of the hearth. Ten minutes before the conclusion of the process, the bellows are worked with extra vigor and the supply of ore and fuel from above stopped. The clay lining of the hearth is then broken down, and the ball of *giri*, consisting of semi-molten iron, slag and charcoal, is taken out and immediately hammered, by which a considerable proportion of the included slag, which is still in a state of fusion, is squeezed out. In some cases, the Agurahas continue the further process, until after various re-heatings in open furnaces and hammering, they produce clean iron."

BALL, VALENTINE, "On the Auranga and Hutar coalfields and iron ores of Palamv and Torre". *Memoirs of the Geological Survey of India* XV, Art. I, pp. 121-122.

3. KARVE, IRAVATI, "Kinship Organization in India", Deccan College Monograph series No. 11, Poona, 1953, p. 21.

of the higher cultures of the plains and the lower cultures of the hills and forests, maintaining each other's economy and institutions without much interference. Since none of the Indian tribes use or manufacture chipped stone implements and weapons, it is a very moot point to consider when this change took place. But if one were to see the very rapid spread of metals after their introduction, the chances of a long survival of stone tools are remote. But this problem needs to be investigated as an essential adjunct to our Prehistoric studies. To give a single example, which can be easily verified, it is the Chakradharpur area of the Chota Nagpur basin in the valleys of Sanjaya and Vijaya. In the summer of 1953, it was noticed that none of the Uraon and other tribal village sites yielded any stone implements and at the abandoned sites in the vicinity of the rivers an entirely new type of pottery different from that in current use occurred. At these sites we made a large collection of stone implements. Probably small scale soundings in selected tribal areas will solve this problem.

Finally, to use a popular expression, when did these tribes 'miss their bus' in their march to progress? To explain their origins and movements is beyond my competence. But if their economic life is an index, one can easily see that they stopped short of large scale agriculture (except in a few tribes in south India) and the consequent economic and social developments. As a matter of fact, the very significant cultural stratification among the tribes, so well pointed out by Prof. Haimendorf, may itself throw light on the stage at which the particular tribes were displaced into the hill country. Many tribes in Central India have retained these traditions of movements and displacement. Similarly, the history and tradition of Gonds speaks eloquently of this process of expansion of the higher cultures at the expense of the lower. The most significant factor contributing to the distinctive Indian pattern as contrasted with that of Africa or Australia, is the even distribution of nuclear zones with fertile soil and favourable climate all over the sub-continent. This has enabled a much larger community of people to tread the path of progress leaving their more obstinate brethren in the hills and forest belts.

IX

CONCLUSION

The picture represented above reminds me of a crossword puzzle on the point of completion with so many interlockers and probable alternative solutions. But it has the one merit of narrowing down the issues and locating the weak spots in our evidence. In the development of any study, we normally pass through three stages. In the early stages of bringing some order into a chaos, we start with a bold working hypothesis. The second stage begins with the application of this key solution. In the initial phase, this results in a very apparent simplification and easy generalization. In Indian archaeology we are at this stage, and I must confess, that my account is at best an attempt at correlating the sequence of cultures of the whole sub-continent, in time and space, within the framework of a very tentative chronology. We will be inaugurating the third and the final stage, when we follow this tentative scheme with a more critical examination, based on much more evidence and intensive field-work. More complications are bound to arise, and we can face them, given patience, skill and resources.

Evolution of Indian culture

The pattern of development of material culture in India described above, is fundamentally based on the geographic features of the country, depending on factors like attraction, aridity, relative isolation and isolation. We are all familiar with the physiographic divisions of the Indian sub-continent *viz.*, the Mountain belt, Indo-Gangetic plains and Peninsular India which is capped-by the Indo-Gangetic crescent. The archaeological picture that emerges closely follows the pattern laid down by Indian Geography. The whole Indus basin bounded by the Aravallis in the east first comes under the impact of the great civilization of Western Asia, but the local environment and the strong influence of a large river basin give it a distinctive character of its own. Almost at the declining stages of this urban civilization, an infiltration of vigorous new elements lead to a great expansion into the next major area *i.e.*, the Gangetic basin. While these great valleys were being cleared and probably drained of their marshes, the upland region of Peninsular India too gets a new impact. We find the Malwa plateau emerging as a great corridor for the vigorous colonization of the Deccan plateau by metal using communities. With their extended contacts with Kathiawad and rapid spread into the South, more or less the present ethnic pattern emerges. Even according to the literary tradition, the Aryanization of Peninsular India was not based on mass movements of people, but infiltration of small Brahmin and other religious communities and fugitives, followed by expanding political forces. But by about

the 4th century B.C., the whole country begins to display a degree of homogeneity coupled with a pleasant diversity. The even distribution of perennial nuclear regions, knit together by a trans-continental communication system had facilitated this process.

This account, based on geography and archaeology, is not belied by literature. I do not share the prejudices of some of our Western colleagues about the use of literary data in archaeology. These are questions of manner, and not of matter; of interpretation, and not of facts. The major drawback of our literary sources is their imperfect chronology and constant interpolation.¹ But some of the evidence may be used with caution. How else can one explain the beautiful and expanding vista of geographic horizons of literary works arranged in a chronological order on linguistic and other evidence by Maxmuller, Macdonnell, etc. Radhakumud Mookerji² has well condensed the geographic data from Rigvedic, Later Vedic and Post-Vedic literature. The focus of the Rigvedic age was the upper Indus Basin, particularly the eastern fringes of it, called Brahnavarta or the Indo-Gangetic Divide (Valleys of Sarasvati and Drishadvati). In the Later Vedic the west recedes into the background and regions of the Central Gangetic valley like Kosala, Videha, Anga, Magadha come into prominence. The tribes on the fringes of the Vindhya like Andhra, Pulinda, Mutiba, Sabara, Nishada come for mention. In the Post-Vedic Sutra and Dharmasastra literature (dated by Macdonnell between 800 and 300 B.C.), kingdoms south of Vindhya like Kalinga begin to be mentioned by authors like Panini. In the early Buddhist literature some of the kingdoms in Northern and Central Deccan appear. By the 4th century B.C., our evidence becomes abundant and varied: Megasthenes, Arthasastra, and the indisputable contemporary sermons on stone of the Emperor Asoka.

1. The best example is the much-quoted Mahabharata itself. Dr. Suniti Kumar Chatterji, the distinguished scholar, says of the above text: "... the Mahabharata, which started as a series of ballads recounting the jaya or triumphs of the Pandavas gradually became elaborated into a great epic in Sanskrit by about 500 B.C. and went on expanding by the addition of all sorts of new materials for the greater part of a millennium, until it attained by 400 A.D., as is generally surmised, to something like its present huge dimensions as a vast poem of 1,00,000 verses or 2,00,000 lines."

CHATTERJI, S. K., *The Place of Assam in the History of Civilization of India*, Gauhati, 1955, p. 14.

2. MOOKERJI, RADHAKUMUD, *Hindu Civilization*, p. 68.

It is very interesting to compare the famous river hymn of the Book X of Rigveda with the later verse from the daily prayers and the Puranas.

Compare

इमे मे गङ्गे यमुने सरस्वति शुतुद्रि स्तोमं श्रुता पश्या ।
अभिपन्था मरुद्वे पितस्तयाजीकिमे शुशुवा सुषोमया ॥

RV. x. 75.5

with

गङ्गे च यमुने चैव पौदावरे सरस्वति ।
नर्मदे सिन्धु कावेरि जलेभिर्न सन्निधि कुव ॥

MOOKERJI, R. K. *Fundamental Unity of India*, Bharatiya Vidya Bhavan, 1954, pp. 35 and 37.

In view of what we have stated above there is no need to re-emphasize the value of the communication system of the country. It was the development of the trans-continental highways or trunk roads, that forged the bonds of unity between the various regions and strengthened the centripetal forces by enabling free movement of peoples, goods and ideas. We have seen already enough archaeological evidence of these movements. But, our history based on literary sources is a distinct contribution of the Aryans, who created or inspired the whole mass of Indian literature. As they slowly moved (influencing and being influenced by the Pre-Aryan elements), Indian history based on literary sources is the story of their geographic knowledge and ignorance of the country. But by about the Buddhist Period, they knew about the whole of India, north of Vindhya and a few regions to the south of it. Very soon, probably due to strong political and economic pressure, communications were firmly established. The best evidence is provided by the early Buddhist literature. On the one hand we read of Jivaka, the physician of Bimbisara, who studied at Taxila, while we have the classical passage giving us the story of Bavarin and his pupils staying on the Godavary at Paithan (Pratisthana).¹ There is a description of all the towns on the route from Paithan to Vaisali. By the time we come to the Mauryan period, Asokan inscriptions are our best guide, due to their location on the highways. And the story of the third Buddhist Council is well-known.

Prehistory

Prehistory is the most undeveloped of all the branches of Indian archaeology. Except in two or three areas, our evidence predominantly rests on typology, and unless we can establish stratigraphic basis for this succession, we will not carry forward the bounds of our knowledge. But from the large amount of surface collection a sufficiently plausible scheme of things is emerging, but it remains to be verified and demonstrated.

About the *Early Stone Age*, we have a good idea of the nature and extent of the cultures, but their inter-relation and chronology await further work. While the peri-glacial zones show a predominant pebble "chopper-chopping" cultures, the Peninsular portions of our sub-continent show predominantly an industry characterized by the hand-axes and cleavers. A wide-

¹ अल्करस पतिस्थाने पुरिमां महिस्तति तदा ।
उज्जेनिन्वापि गोनदं वेदिमां वनसाहङ्गम् ॥ ३६
कोसाम्बीन् चापि साकेतं सावस्थिन् च पुरुतमम् ।
सेतव्यं कपिलवस्तुं कुसिनारम् च मन्दिरम् ॥ ३७
पावत्यं भोगिनगरं वैशालिं मगधाम्पुरम् ।
पासनकम् चैतिव्यं च रमणीयं मनोरमम् ॥ ३८

सुतनिपात ५. १. ३६-३८

spread uniformity emerges at the end of this age with the appearance of the "Prepared platform" or the Levallois technique. Several attempts have been made to establish climatic cycles. Unless our techniques improve with a greater use of natural and physical sciences, we will not go forward.

The next phase is characterized by an equally widespread industry of scrapers, blade, burin and borer in fine grained materials like chert, jasper, agate etc., and it also seems to be derived from a Levallois tradition, as in Africa. Its stratigraphy is perfectly clear in the Narbada valley, the Bombay area and the Pravara and Godavary valleys. Here again, there is no place for complacency; the need is for more and more stratigraphic studies. This has been designated as *Middle Stone Age*.

The third phase of Indian Prehistory, called here, the *Late Stone Age*, is also becoming clearer. The identification and elimination of the Blade industry at Maheshvar and the origin of this technique, by the writer, has removed a major snag in our attempts at understanding the large quantities of what are indiscriminately called 'microliths' (Fig. 38). Hence the field is clear and we see distinctly two horizons of Microlithic industry—Geometric and non-Geometric. In certain areas, Tinnevely and Birbhanpur, we have evidence of a considerable antiquity for this microlithic industry without the association of pottery. In both the areas geological and pedological evidence has been adduced to demonstrate their antiquity. Similar non-geometric industries occur in the Chakradharpur area and a few other areas.

Similarly there is an equally widespread distribution of Geometric microlithic industries all over the continent. We have not yet got positive evidence, that these succeeded the non-geometric, but typology suggests it and nothing more will be said at this stage. Again pottery is never associated with the non-geometric industries. As in tropical Africa, these microlithic industries which are generally supposed to fit into an environment with light vegetation, have been perfectly adapted to a life of hunting and fishing in jungle areas. Curiously, nothing resembling an arrow-head or even bi-facially retouched point, has ever been produced in the country, except in the remote Tinnevely (probably as a result of contact with Ceylon). Yet the asymmetric point with a strong central ridge and a thick back, may be a substitute, as suggested by Zeuner. In a tropical country with forests, a wood, probably with a burnt tip can be equally effective. It is this very adaptation of these primitive hunting communities to a thickly vegetated forests and hills that led to a cultural diversity in the Neolithic period. In certain areas with very little agricultural potential, these cultures survived. Probably they were also driven out into these unfavourable environments by the agricultural communities themselves. Hence we see in areas like Gujarat, Malwa and Maharashtra, these hunting communities survived till they were displaced

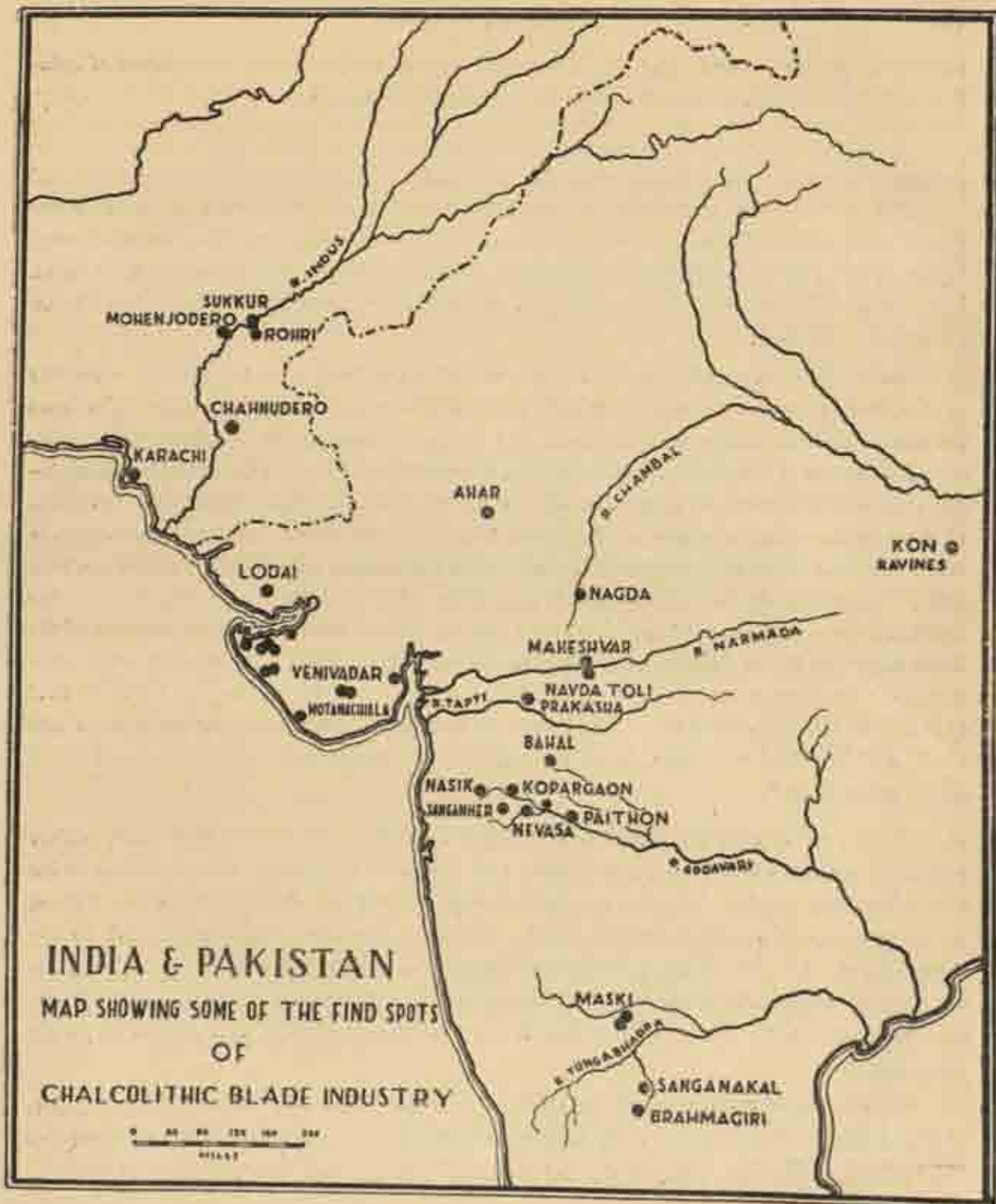


Fig. 38.

by their brethren who came with heavy metal tools or stone tools. Finally in the areas of isolation, this hunting-fishing economy might have lasted still longer!

The *Neolithic period*, the last stage of Indian prehistory really brings into lime-light the environmental diversities within the country. These primitive agriculturists domesticated cattle and cultivated the fields around their hills in tropical and semi-tropical scrub jungles. As they depended on basalt or diorite for their stone tools, they preferred the Gneissic-metamorphic areas of the country and the foot hills of the Vindhya. While Neolithic agricultural communities began in the Indo-Iranian borderlands in the early 4th millennium B.C., they survived in Central Deccan till about a 1000 B.C.

Sometime in the later half of the 2nd millennium B.C. (depending on the Chinese evidence) or even later, a wave of Austro-Asiatic or Proto-Australoid elements penetrated into India from the east. We have a large distribution of their typical shouldered celt or adzes with oblong sections. But let it be stated here, that there exists a general opinion, that the sawn axes of South-east Asia, and the oblong or square axes of that region and Eastern India represent an adoption in stone by the primitive people of metal tools of their more fortunate brethren. A similar attempt has been made to connect certain stone celts and copper bar celts from the Gangetic basin. These indicate the co-existence of both these cultures—Copper age folk in the plains and Stone age folk in the uplands. A study of culture contacts between the *Plain Indians* and the *White settlers of North America* by Hodges¹ has shown how the traders, the trappers, who penetrated into the interior for barter of fur and hides, tried to copy the Indian tool forms in steel to make them more acceptable. "The process of translating stone and antler proto-types into metal, and these back into stone, is not in itself very remarkable, and in principle could be repeated *ad nauseum*".

Thus it seems with the advent of the copper technology, the semi-tropical river valleys with their swamps and marshes, were cleared and drained. This meant a displacement of the earlier Neolithic people. Hence in the forested hills of Vindhya and Chota Nagpur plateau, we see congeries of so-called Neolithic tools (peninsular elliptical-section type as well as the square-axe type). Thus, some of the later Neolithic folk, like the earlier batch of hunting communities, were consigned to the hills with the advent of large scale agricultural communities in the main river basins. These unfortunate folk were the precursors of most of our tribal people.

Proto-history

When we leave Prehistory and our survivors of a prehistoric age, we come to the "matrix of our civilization", the stage of the large scale agricultural communities with a knowledge of

1. HODGES, H. W. M. "Braves, Beakers and Battle-axes", *Antiquity*, XXI, 1957, p. 142.

copper and bronze. Here again, we see the familiar pattern of a slow advance of civilization. Naturally, the Indus basin, as Spate calls it, is an extension of the environment of South West Asia. Similarly Braidwood calls it a periphery of the nuclear Near East. The rest of the country to the east of the Aravallis must have been in a Late Stone Age or Neolithic cultural level. Pre-Harappan and the Harappan cycles did not spread eastwards. Sometime at the end of this great urban civilization, two great landmarks appear in our cultural horizon. *While the Aryans came from the west and destroyed or displaced the great urban civilization of the Indus basin, a widespread technological progress of the Gangetic basin is suddenly registered, either simultaneously or even a little earlier.* We are completely ignorant about their origin. While Piggot, Heine Geldern and Gordon tried to derive this Gangetic valley from Western elements, Lal has made an attempt to support an independent origin. Yet the solution of the problem of their origins require an intensive attack on the Gangetic valley.

This era is the most formative period characterized by the movements along the main communication system. This accentuated still further the environmental diversities and laid the foundations for the later Indian civilization. While the Harappans seem to have fled southwards and eastwards, the Grey Ware folk moved eastwards into the Gangetic basin. These movements set in more migrations. Thus this formative Post-Harappan era may be described as the "Era of movements" (Fig. 39).

The most important cultural groups of the Post-Harappan cycle are :

1. Grey Ware
2. Chalcolithic cultures of Malwa and the Deccan
3. Ahar Painted Black-and-red ware culture
4. Harappan and its derivatives of Kathiawad
5. Copper-hoard culture (Gangetic Valley Copper Age)
6. Post-Harappan cultures of Sind and
7. Londo and other Border cultures.

We do not have any stratigraphic evidence for the 6th and 7th groups, as they merely represent surface collections and grave pottery. Similarly the exact status of the 5th *viz.* Copper-hoard culture is somewhat vague and depends on the circumstantial evidence of pottery affinities of Hastinapur I with that of hoard sites.

Thus we are left with four major elements of Proto-historic India, which vitally affected the patterns of her culture. The most significant feature is their distinct regional character (Fig. 39). As the Grey Ware culture and the Chalcolithic groups are stratigraphically Pre-

N.B.P., their contemporaneity has to be taken for granted. Yet certain resemblances between the decorations on the Ahar painted black-and-red ware and the Grey Ware deserve further studies. The latest excavations at Navda Toli, conducted by the Deccan College and the Baroda University, threw further light on the nature of the Chalcolithic cultures of Central India and Deccan. The earliest level is characterized by the occurrence of black-and-red painted ware and cream or white slipped ware. While the former connects it with Ahar the latter connects with Somnath IB, and Rangpur IIB indirectly. Similarly the typical lustrous red ware occurs in Phase IV at Navda Toli, thus again confirming that all these cultures were in contact with each other.¹ The concave bowls and basins in an unslipped fine fabric of Phase II connect it with the Deccan. At the same time the Central Indian cultures show some vague affinities in design and forms with Iran, particularly Sialk. *Hence none of these four main cultures can be derived from each other and all of them co-existed for a long time mutually influencing each other.* Finally there are two remarkable links : Firstly the blade industry, employing the technique of crested guiding ridges appears, as far as we know, from the Harappan and survives right through to the end of the Chalcolithic cultures about 500 B.C., till it became extinct with the appearance of iron. Secondly, the copper celts found in the lowest levels of Navdatoli show two-fold influences like its pottery. They show the Harappan as well as the still enigmatic Gangetic valley types.

Before we close this discussion, we have similar close affinities between the Chalcolithic cultures of Malwa, Maharashtra and Andhra-Karnatak. Here again the sure binding link is the blade industry, which has been traced as far south as Maski, Brahmagiri and Sanganakallu. But we see one remarkable fact. The foci of the Southern Neolithic cultures was the lower basin of Krishna (Andhra-Karnatak). While the Chalcolithic cultures started a south-east movement, we see a reciprocal movement from the South. At Nevasa, the typical chalcolithic elements of Malwa combine with it, polished celt (probably indicating dearth of copper and trade with the South) and the coarse grey ware vessels, the most prominent being the Brahmagiri urn type. Similarly at Bahal on the Girna, the lowest phase Ia again shows the grey fabrics, while the black-on-red wares appear in Ib, showing again the close inter-locking of these various cultures. Hence when this Chalcolithic element with its black-on-red wares, blades and metals, penetrated further south, they could not alter the economic character of the dominant neolithic industry. Thus this inter-action of these Neolithic and Chalcolithic elements are very interesting and need further attention. Whether this Chalcolithic culture managed to spread into Tamilnad, as also the true distribution of the Neolithic in that area need further study.

1. SANKALIA, SUBBARAO and DEO. *Excavations at Maheshwar and Navda Toli.* Baroda and Poona, 1958.

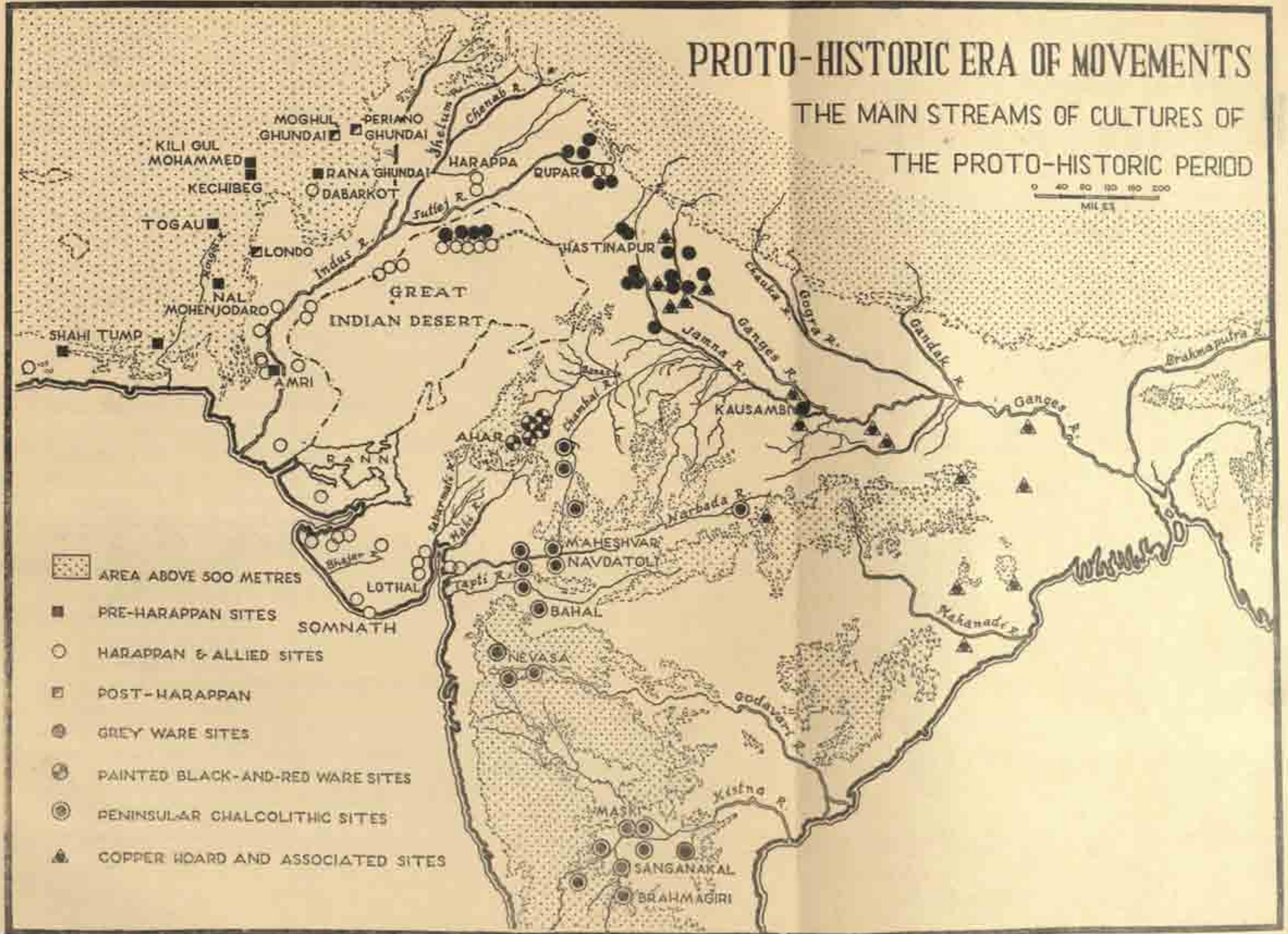


Fig. 39.

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Thus this Post-Harappan cycle and the movements of cultures led to the establishment of large scale agricultural communities in the valleys of the Ganges, Chambal, Narbada, Tapi, Girna, Godavary and Krishna and their tributaries. It set the pattern for the development of higher cultures in India. Thus when iron appeared in the middle of the first millennium B.C., the knowledge of a cheap and easily obtainable metal of a very durable character created the necessary background for the cultural homogeneity of the major river basins, which emerges in the next period.

The problem of the "Dark Period"

The problem of the gap between the Proto-historic and the Early historic periods has been described dramatically as the "Dark Period" in Indian Archaeology. The work of the last few years is closing up this gap equally dramatically. We have already discussed those problems of overlaps between the various cultures—particularly the Harappan and the Post-Harappan. (Fig. 36). The problem of the various Post-Harappan cultures of Western and Central India were discussed at a symposium held at Delhi in September 1957. For convenience, about thirteen distinctive forms and fabrics were selected for a detailed study of comparative stratigraphy and typology and the results are given below :¹

1. *Concave sided carinated bowls*
Rangpur III, Ahar Ib, Prakasha Ib, Jorwe and Nevasa.
2. *Concave sided bluntly carinated bowl*
Somnath IIa & IIb, Rangpur IIc.
3. *Carinated dishes on or without stand*
Rangpur IIa, IIb, Prakasha Ia, Somnath Ib.
4. *Dishes with clubbed rims*
Rangpur IIc & III, Prakasha Ia, Navdatoli Ia and Ib, Somnath IIa, and Ahar Ia.
5. *Corrugated stems*
Rangpur III, Nagda I, Somnath IIa, Ahar Ia, Navdatoli Ib, and Bahal Ia.
6. *Tube spouted vessels*
Jorwe, Nevasa I, Bahal Ib, Prakasha Ib and Nagda I.
7. *Painted channel-spouted vessels*

¹ A sub-committee consisting of Dr. H. D. Sankalia, Shri B. B. Lal, Dr. B. Subbarao, Shri B. K. Thapar, Shri N. R. Banerji, Shri S. R. Rao, and Shri M. N. Deshpande was appointed to carefully examine the actual materials. The following equivalents were agreed and these are reproduced. Even the drawings were published but, this came too late after the manuscript was finalized. See *Minutes of a Symposium held at Delhi on 16th September 1958*, p. 11 and Appendix I. I am very much obliged to my colleagues of the Committee and the Director General of Archaeology.

In presenting this material here, the abbreviations used for the sites have been dropped for convenience and the name "Somnath" substituted for "Prabhas" to avoid confusion. The first season's work at this site has been referred to as Somnath in this volume, as well as in *Indian Archaeology 1956-57, A review*, New Delhi.

- Navdatoli Ia and Ib, and Nagda I.
8. *Short-handled bowls* (previously being described as sauce-pan handles)
Somnath Ib, and Rangpur IIa, and IIb.
 9. *Long-handled bowls*
Somnath IIa and Rangpur IIc.
 10. *Long-necked jars with bulbous body, often painted with horizontal rim-bands*
Rangpur IIc & III, Somnath IIc, Bahal Ib, Prakasha Ia, Ahar Ia, Nasik I, Jorwe, Navdatoli Ia and Ib.
 11. *Basins or dishes with beaded rims*
Rangpur IIc and III, Somnath Ib, Nevasa I, Navdatoli Ia and Ib, Ahar Ia and Nagda I.
 12. *Coarse grey lids with oblong or semi-circular section and knob lids*
Bahal Ia and Ib, Nevasa I, Navdatoli Ia and Ib, Ahar Ia, Jorwe and Nagda I.
 13. *Burnished black-and grey or black-and-red ware with designs both inside and outside*
Prakasha Ia & Ib, Bahal Ib, Ahar Ia and Navdatoli Ia.

Generally speaking, there is some resemblance between Nagda I, Navdatoli and Ahar, particularly the first two.

This impressive evidence of overlaps and interlocking of sites by associated finds over vast areas of Western and Central India cannot be ignored. Thus we can very easily imagine for ourselves the picture of various Post-Harappan cultures surviving together with the phases of true-Harappa (in terms of culture traits) or those cultures derived from Harappan. Thus if we accept the new C-14 dates (see p. 109) which became available when the book was running through the press, we see that by the beginning of the first millennium B.C., the whole of the country upto the borders of Mysore (the main nuclear areas) was inhabited by Copper Age or Chalcolithic people with slight regional or local variations in culture, but in close contact with each other. (See Fig. 36).

Similarly for the Upper Indus basin and the Gangetic valley, the picture is becoming clearer with the palpable evidence of overlaps between the Harappan or its late derivatives and the Grey Ware. The newly discovered site of Ukhlina near Meerut and the Kausambi evidence of the association of Grey ware with certain "Harappan" (?) traits in ceramics and architecture, support this hypothesis. Dr. Y. D. Sharma has noticed slight differences between Kotla Nihang, Rupar and Bara (all within the Harappan). Kathiawad is an eye opener and it would be fantastic to believe that Harappan culture remained unmodified from its inception to its death. One is not wrong in expecting a slightly modified or decadent Harappan culture, which might have been contemporary with the Grey Ware people and the Aryans.

Another crucial evidence is provided by the black-and-red ware which has an epi-centre (in a cultural context) in the Rajasthan (Ahar area) and the influence of this technique is seen in all the contemporary cultures. Following the nature of these contacts—fusion with the dominance of the resident traits—we see an affinity with the forms of the local ceramics. This is natural and those who argue in favour of the occurrence of a mere technique, should explain the origin of this technique, if they do not agree with the author that its epi-centre is Eastern Rajasthan. The evidence from Bikaner, Rugar, Kausambi, Patna and Sonapur can be explained as follows. The black-and-red ware which appears with the Post-Harappan cultures bridges the gap between the Grey ware and the N.B.P., which very significantly carries the influence in forms and technique of the Grey ware as well as the black-and-red wares of the Gangetic basin. Thus here we see the illumination of the so called "Dark period". We should be aware of the dangers of inflating our chronology and exaggerating the gaps; and at the same, we should not go the other extreme of simplifying the system either. We are well on our way, and if one were allowed to use the expression, we are at the end of the beginning of the reconstruction of the entire culture sequence in the nuclear areas.

The shifting foci of Indian Culture

Looking at these broad movements of the Proto-historic period, it is interesting to recall that this east-ward shifting of the foci of Indian cultures coincides with a cultural and technological evolution. The first focus is the Indus basin, a physiographic extension of the Afrasian-Dry zone. Here Western Asian traits blended with the Indian to produce a typically Indian Civilization.

During this period the rest of the country was more primitive and the Gangetic basin was in the throes of a great technological evolution. When the new people, the Aryans appeared on the scene, coinciding more or less with the setting desiccation of Sind, the second focus shifts to the Indo-Gangetic divide, the traditional gateway to the heart of India. Probably, the stories of struggles and adventures reflected in the Early Vedic literature mark the consolidation and establishment of this Vedic Brahmavarta. With the further increase in the population and the fusion of the society, we see the eastward movement of the Aryans into the rich valley of the Ganges, marking the large-scale colonization of this great area.

It is very significant that at the end of this second period, we see the advent of iron. Both at Rugar and Hastinapur, traces of iron slag were found in the upper levels of the Grey Ware culture. We have already seen the infiltration of Sialk Cemetery influences into India. Since iron was known there, there is no reason why iron should not make its appearance in India also. Hastinapur, Rugar, Ujjain, and Maheshvar, where large scale excavations were carried out, show

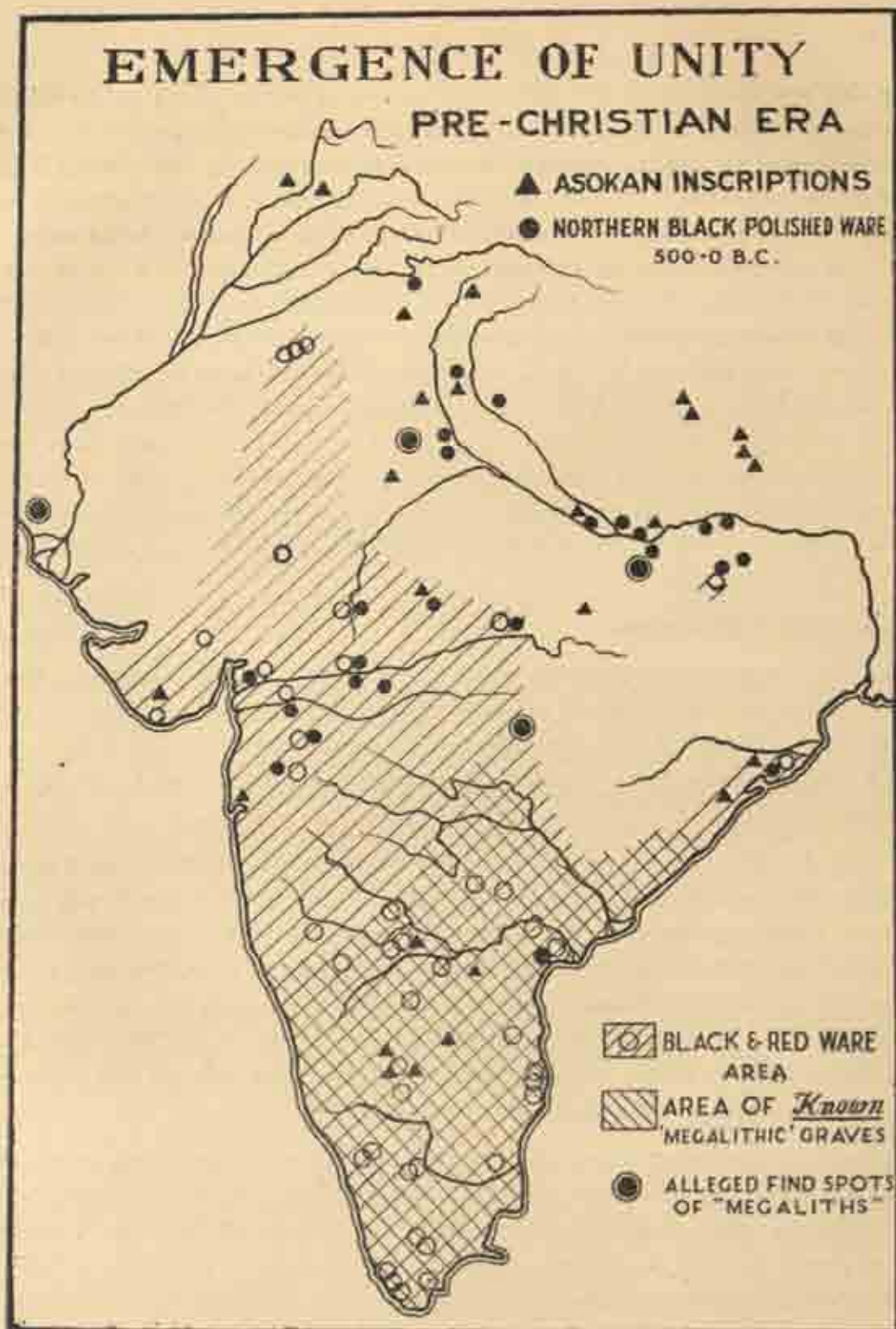


Fig. 40.

the advent of iron about 500 B.C. or earlier, and there is not a great typological difference between the northern and southern iron tools. In Central India and probably along the flanks of the Vindhya (south of the Ganges) the iron occurs with the black-and-red ware. Actually N.B.P. appears in the intermediary levels of these black-and-red ware phases at Ujjain, Maheshvar and Somnath. Thus this great technological change shifts the focus to Magadha the richest area for minerals. Hence, it is the Iron Age focus, the third one in the evolution of Indian culture, that enabled the political expansion of Magadha over the rest of India, laying the foundations for the political and cultural homogeneity of the sub-continent.

With the appearance of iron, a new era begins. By about the 4th century B.C., the whole Peninsula displays a remarkable homogeneity of material culture, inspite of the diversity of their burial systems. The finest evidence for this is the uniformity in pottery forms and fabrics in a large part of the country from this time (Fig. 40). The very rapid spread and colonization of the chief river valleys by these metal-using communities led to the displacement, contraction and concentration of the primitive people who led a life of hunting and primitive agriculture into the forests and hills of Central, Eastern and Southern India.

Maritime contacts

The next important factor is India's long coast line with its convenient anchorages. This has played no mean role in the interchange of cultures, as it has kept a window open to the great civilization of Western Asia and the Mediterranean region. The earliest evidence of such contact has been recently demonstrated by the excavations at Bahrein. We already know the links between the Indus basin and Mesopotamia. In the excavations conducted by P. V. Glob, seals with designs almost identical with those of the Indus valley were found at this great cemetery site identified with *Dilmun* of the Mesopotamian records. With the evidence of Harappan and Late Harappan sites in Kathiawad and on the Gulf of Cambay, it may not be unreasonable to postulate a maritime contact. The nature and intensity of this contact remains vague and obscure and calls for an intensive investigation. In spite of the vague references in literature, Indian and foreign, at the present stage of our knowledge, we have no material evidence of maritime trade and other contacts till we come to the early centuries of the Christian era. A great era of maritime activity was inaugurated by the discovery of the monsoons by Hippalus a little before the beginning of the Christian era.¹ This tremendously accentuated the quantity of trade possible by small scale

¹ For a slightly different view :

"As the Greeks were not the first to sail in the Arabian Sea, the knowledge of the monsoon winds—at least the obvious aspects of certainty, regularity and periodicity of the winds and their timely use in navigation—would have been probably diffused to them by the seafaring activities of the indigenous sailors inhabiting the littoral regions of the Arabian Sea....."

Haribaran, K. V. "Problem of the Discovery of Monsoon Winds" *Journal of the Bombay University* XXV, Pt. 4, Jan. 1957, pp. 9-16.

CONSOLIDATION OF UNITY

EARLY CHRISTIAN ERA

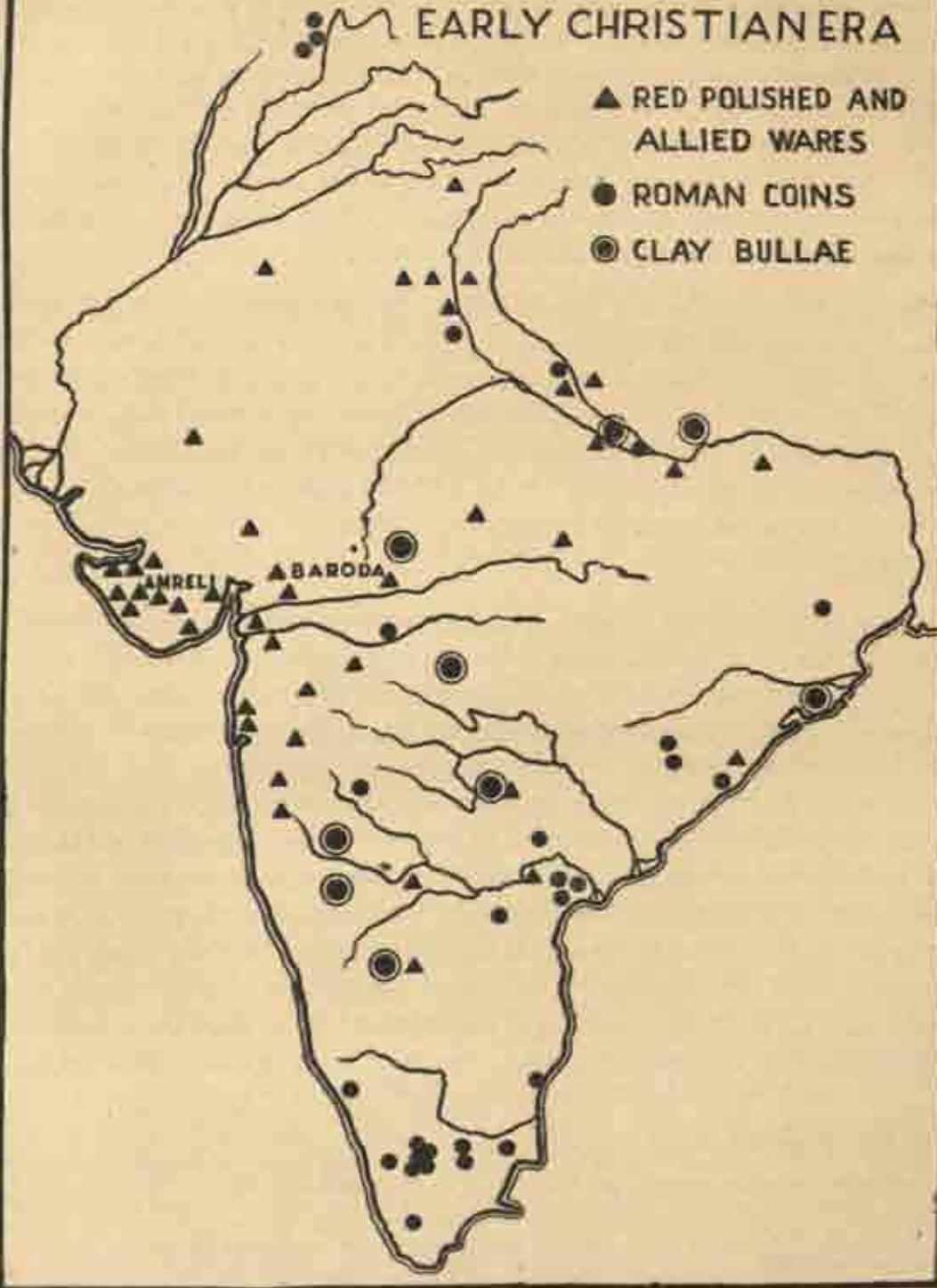


Fig. 41.

coastal movements within the territorial waters. The Parthian Empire and its interruption of Chinese trade, as a result of hostilities with Rome, also seems to have been responsible for the quantity of commercial and cultural contacts between the Roman Empire and India, remarkably shown by Sir Mortimer Wheeler.¹ (Fig. 41)

Retrospect and prospects

Naturally this process of development of material culture in space and time was controlled by the geographic factors. Hence, I may repeat, it is difficult to draw lines of contemporaneity across the vertical lines of development of material culture, since its horizontal expansion has been influenced and to some extent retarded by the geographic factors within and without the country. This difference in the cultural *milieu* of the first large scale agricultural communities in different parts of the country seems to be the most important reason for the regional diversity. Due to the other vital historical forces, "these separate limbs of the body politic" have lent varying shades to the great mosaic of Indian culture.

Some of the main lacunae have been pointed out. In these days of planning, a well-coordinated plan of exploration and excavation will certainly complete the outlines of vertical sequence. Then we can indulge in large-scale work depending on resources personnel and facilities. Some of the important problems may be stated :—

- (1) Stratigraphic evidence for our Prehistoric culture sequence and search for cave sites.
- (2) Establishing the links between the Harappan and the Grey ware and the succeeding cultures (upper Indus).
- (3) Extension of the Hastinapur evidence for linking up the copper hoard and the earlier Neolithic cultures of Bundelkhand Baghelkhand. The possibility of a widespread Pre-Grey ware copper Age Civilization in the Gangetic Valley needs to be investigated.
- (4) The problem of Black-and-Red wares and the Megaliths in Northern India. Particularly, it is very important to establish the relative chronological position of Grey ware and the Black-and-Red wares.
- (5) Exploration of focal areas like Krishna-Godavari delta and Kavery basin, Kerala, Assam, Lower Bengal. When we clear up our house and know what we have, we can confidently tackle the problem of external parallels outside India. Let us once again proceed from the known to the unknown.

Finally, a word of caution and an appeal may not be superfluous. In the picture depicted above, one could vaguely see the shadows of men and women, who were the prime agencies in

¹ L. WHEELER, R. E. M., *Rome Beyond the Imperial Frontiers*, London, 1954.

making and transporting the few indestructible elements of their material life, with which the archaeologist and the historian reconstruct the past. It is very tempting to identify the authors from their shadows. But with the material at the disposal of the archaeologist in India today, he cannot designate them. Guesses at truth may be made, but the certainties call forth greater patience. The situation is certainly ripe for an attempt at reconciling the literary (particularly geographical) and archaeological data, since the approximate chronological horizons, in between which we have to sandwich our literary and traditional material, are becoming clearer in the wider perspective of Eurasia. The first sure but faltering steps have been attempted⁷ (Appendix I). But I would end with an appeal for a little more patience, till the names of some of our legendary kings enshrined in our literature, appear from under the earth, as A-anni-padda, son of Mes-anni-padda of the first Dynasty of Ur enlivened the whole Mesopotamian tradition and archaeology with the discovery of his temple. In 1946, alluding to the classic work of Sir Cyril Fox⁸, Sir Mortimer very significantly asked "Where is the Personality of India?"⁹ Here is its first glimpse and given a chance, Archaeology can reconstruct it.

7. LAL, B. B., *op. cit.* *Ancient India* 10 and 11, also see Appendix I.

8. FOX, CYRIL, *Personality of Britain*, London, 1932.

9. WHEELER, R. E. M. "Archaeological Planning for India", *Ancient India* No. 2, 1946.

APPENDIX I

ARCHAEOLOGY AND TRADITION

An approach to the problem of methods*

" To contend for immense antiquity for the earliest ages is discredited by the historical sense ; and to push back the antiquity of those ages to vast figures is to weaken *pro tanto* the trustworthiness of the tradition about them when everything depended on memory alone. "

—PAGIETI.

" Unfortunately, the Hindus do not pay much attention to the historical order of things ; they are careless in relating the chronological succession of their kings and when they are pressed for information, and are at a loss not knowing what to say, they invariably take to tale-telling ", laments the great Muslim historian Alberuni, who visited India in the 11th century.¹ This singular charge, representative of a legion, is true, if it means that Indians never developed history as a science and an art. But subjected to a critical study, material is not lacking for a reconstruction of our history —not merely the political history of kings and battles, but true cultural history of the people. Here we are more concerned with the Proto-historic period, when our sources of information are limited to the class of literature called the Puranas or the store houses of tradition and other semi-religious and secular literature, which may be tapped. The limitation of our traditional sources are discussed in this paper. The most urgent task is a synoptic study of all the Puranic texts and a proper correlation of Puranic, Vedic and Post-vedic literature.

Tradition has been defined by Daniel as the historical accounts mixed with fictitious accounts based on hear-say. Our puranic accounts can be compared to the accounts of Berosus about Mesopotamia, or to some extent of the Bible. Just as a judicious interpretation of these Western Asian accounts, in the light of archaeological and historical researches have yielded important results, hope can still be entertained about rescuing our history from tradition. European

* This problem has been handled by the historians who have made several sincere attempts at using our traditional literature for reconstructing the history of India before the Saurashtra *i.e.* before 600 B.C. Unfortunately, the tendency has either been to ride rough shod over the material and condemn it or the other extreme of taking these as literally true histories. Hence the writer hesitated to treat it in the text and the following attempt is made as an experiment and to lay down certain suggestions for further work. One of the major handicaps in our Puranic studies has been the lack of a critical apparatus among those who can really scan these original texts and the dearth of this latter capacity among most of the historians who have tried to apply modern historical methods.

For a detailed bibliography on this subject see :

PUSALKAR, A. D. *Studies in Epics and Puranas of India*, Bombay, 1955.

1. STERN, A. (Ed.), *Kulhan's Raja Tarangini*—Introduction.

folk-lore has enabled Grahame Clark to interpret European Prehistory; and a cautious and patient approach to this problem is called for. But let us assess the limitations of our literary sources, so that no false hopes can be aroused.

Firstly one of the major features of Indian civilization is the dominant role of religion and philosophy in the various spheres of life. Hence even *Itihasa* or history, which has been declared as one of the five essentials of a Purana, has been distorted. All the traditional works have been interpolated with extra material suitable to the various sects. Sukthankar, of the Mahabharata fame, has given us an interesting account of such sectarian interests in the texts. When P.C. Ray's Bengali vulgate edition of Mahabharata was published, a gentleman from the South complained that "many portions supporting the *Advaita* and *Visistadvaita* doctrines, but unfavourable to the *Sakti* worshippers of the north have been omitted. . . . and many verses quoted by the great philosophers of the South in support of their doctrine are not to be found in Mr. Pratapachandra Ray's edition".¹ This gives a classical example of the way in which each sect or religion in India has created its own version of the epics and puranas.

Another defect arises out of regional and linguistic factors. The scribes of the regions added their own passages to glorify the particular regions. A very interesting example was detected while going through the Telugu edition of the *Bhagavata Purana*. Both the *Harivamsa* and *Brahmanada* describe that Bali's five sons, and that *Anga*, *Vanga*, *Kalinga*, *Pundra* and *Suhma* were the eponymous ancestors of the five eastern kingdoms.² The Andhra scribe cleverly manipulated the verse to make it six sons instead of five, and added Andhra as one of the States founded by the Titikshu family.³ Such instances can be multiplied and some of the castes have their own versions, or added them as *upapuranas* to the main ones. For example, the Nagar brahmins of Gujarat have a *Nagarakhanda* as an *upapurana* of *Skanda* to deal with Vadnagar and their community.

Similarly some of the later States invented fictitious genealogies to glorify their families and tacked on later dynasties to the earlier ones *i.e.*, Saryata of the Haihayas with Saryata son of Manu; and the most glaring instance is that of tacking Chola, Chera, Pandya and Kulya with Andira of the Turvasa line. Are we not familiar with some of the States of Rajasthan, who claim even to-day their descent from Rama, Lakshmana etc., and other traditional heroes? Suniti Kumar Chatterji⁴ has given a very nice analogy between the Homeric wars of Greece and

1. SUKTHANKAR, V. S. "Some Problems of Textual dynamics", *Epic studies*, Vol. 1.

2. PAROTIER, *Ancient Indian Historical Tradition*, Oxford, p. 109. (B.R. 13; 152-53 and H.V. 32, 1840-41)

3. 23rd Adhyaya of *Srimadbhagavatam*, 9th Skanda, verses 5-6.

4. CHATTERJI, *op. cit.*

the Mahabharata war. Just as it was considered a great matter of pride to be associated with those heroic legends, many claims were added at a later period. For example, Schafer's list of participants in the Great Battle includes most of the later South Indian States.

A similar effort was made by the foreigners who chose to stay and rule in India. Most of the Puranas, describing Sakas, Yavanas etc., state that they were not anointed (*naiva mardha-bhishiktaste*) according to Hindu rites. Then, they adopted to Hindu religion and rituals. The tradition of the Rajaputs and the *Agnikula legend* is a very interesting example. This phenomenon, which the sociologists call "the movement" among the social groups, is an ever-recurrent practice adopted by the lower strata of the society to attain higher status by adopting the rituals and customs of the higher strata.

Before turning to the contents, let us dispose of the textual problem. While elaborate precautions like—*Pada patha* (text of independent phonetically unmodified forms of words), *Krama patha* (every word of the pada patha occurs twice, being pronounced after the preceding word, and before the following) and indexes, were devised to preserve the textual purity of the Vedic texts, no care was taken to preserve the puranic texts.

Similarly, chronology of the texts is the worst bane of Indian traditional literature. Very few of our literary texts could even be approximately dated without arousing a controversy. Hence, as it happens very often, most of our accounts—historical and geographical—are anachronisms. We have already described the horizontal expansion of peoples and cultures. Hence, if we compare the Vedic and puranic accounts, we find the earlier members of a family stationed in the *Brahmavarta* being associated with the later homes of their successors. Uncritical acceptance by Pargiter, and some of the subsequent writers, gives us the fantastic picture of the early Aryan settlements spread over the whole of Northern India right from the 3rd or the 4th generation from Manu, the ancestral founder of all the Hindu Royal families. Similarly the Mahabharata lists most of the States of the Early centuries of the Christian Era, as taking part in the Great War; and Sahadeva is supposed to know every nook and corner of India and even Antioch and Rome! *Thus if we are allowed to use the term, these are not only anachronistic in time, but also in space.*

The problem of general chronology is still worse. The whole scheme of ancient Indian chronology hinges on the *Mahabharata war* and the death of Krishna, which according to the *Bhagavata* took place 37 years after the great battle. With the death of Krishna and the passing of such a great personage, a darkness is supposed to descend, and an era of evil begins; and this new age is Kali yuga. This basic historic fact was mixed up later with astronomy and with the

determination of a cycle of 3600 years marked by a certain planetary combination, observed by Varahamihira in the 5th century A.D. A backward calculation seems to have been made, fixing the beginning of the Kali yuga at 3102 B.C. It is very interesting to recall that the first inscription mentioning a date in the Kali Era is Pulakesin's Inscription of 634 A.D.¹ A heroic attempt was made by Sengupta² to make some scientific calculations of the astronomical data from the Puranas and other works. The very inconsistency and arbitrariness of his results nullifies their value. As Raychowdhary puts it ; "Astronomical Kaliyuga—reckoning is a pure astronomical fiction created for facilitating the Hindu astronomical calculations and was designed to be correct only for 499 A.D."³

At one time, it was the fashion to talk of this 3139 B.C., as the "New sheet anchor of Indian chronology", as Dr. D. S. Trivedi put it, being the year of the Mahabharata battle. Since all the historical and genealogical accounts of the Puranas, called the "*Kaliyuga raja vrittanta*" (history of the kings of the Kali Age), began with Parikshit, the year 3102 B.C. was taken as the starting point.

Fortunately, the real "sheet anchor of Indian chronology", as Smith described earlier, the invasion of Alexander in 327 B.C., stood firm. Now a welcome change is coming. It is the acceptance by most of our historians, of a scheme of short chronology suggested by Pargiter, and modified by a number of writers. It is the general consensus of opinion now, that this Mahabharata battle took somewhere about 1200-1000 B.C. As will be explained, archaeological evidence generally supports it indirectly.

But Pusalkar⁴ has revived this Kali Era in a very ingenious way. Now he connects it with Manu, the ancestral founder of all the Hindu Royal families and the hero of the Indian "flood legend". Counting the traditional 95 generations between the Mahabharata battle and Manu, he arrives at 3110 B.C. for Manu. Then he jumps at this coincidence with Woolley's calculations of the flood at Ur as at about 3000 B.C. and connects both these stories. It would neither be possible, nor proper, to go into the details of this speculation, but we close it with the two main objections :

- (1) It is doubtful whether and where the Aryans were about 3000 B.C. Their advent into Western Asia has been generally dated to about 2000 B.C. or later. Hence it is still more doubtful for that period, as far as India is concerned.

1. Epigraphia Indica. VI. pp. 11-12.

2. SENGUPTA, PRABODHCHANDRA. *Ancient Indian Chronology*, University of Calcutta, 1947.

3. RAYCHOWDHARY, H. *Political history of Ancient India*, Calcutta University 6th edition. p. 27. 1954.

According to Surya Siddhanta (Ardhharatrika system) as described by Brahmagupta (Khandakadyaka), 17th February, 3102 B.C.

4. MAJUMDAR and PUSALKAR (Ed.). *The Vedic Age*. Bombay, 1953.

- (2) The coincidence of the Kali Era and flood dates of Woolley is too much to be credible. One fiction, based on later astronomical works, cannot be used to support another fiction *viz.*, the flood legend. The floods are ubiquitous, and it is very risky to infer a universal flood from one or two sites in the Euphrates and Tigris basin. Even for Mesopotamia, Woolley's floods have become suspect!

Now turning to the problem of genealogies, we find a tendency to inflate the chronology and accept the longer lists ignoring the basic weaknesses of the texts themselves. We have already pointed out the anachronisms in time, as well as space, of our Puranic accounts. Hence this has resulted in a jumbling of dynastic lists on some doubtful synchronisms. Pargiter, the pioneer of Puranic studies in India, first collated all the available texts and compiled the genealogies on the basis of five major synchronisms. But his computation suffers from the fact that he ignored the geographic background of Aryan expansion in India and distributed his dynasties all over Northern India. Secondly, he depended on the Ikshvaku lists which are supposed to be complete and on the basis of his synchronisms, he spaced out the names at his disposal in an arbitrary way. Thus he established the existence of 95 generations of rulers before the Mahabharata war, beginning with the traditional Manu. Thirdly, there is a conflict between the Vedic and Puranic writers on some of the names of rulers. Thus whenever there was some doubt, ancestral names and family names were repeated, making the relation still more difficult to find out. The possibility of collateral lines being treated in a genealogical order has to be taken into consideration. Bhargava¹ and Pargiter² discussed at length the difference between the Ramayana text on the one hand, and the Puranic texts on the other. While the former contains only 35 names before Rama, the later make it 63. But Pargiter dismisses Ramayana and says that "it is very improbable that the Ramayana alone should be right."³ In spite of the fact that it omits to mention a number of well-known names, it is worth while re-examining, in view of the equally well-known fact, that the king lists of the Puranas are blindly copied from the earlier text. Secondly, a short chronology is our manifest need, and we need not be carried away by the prejudices of Pargiter against the so-called Brahmanical sources. It is again a textual problem.

Pargiter's great work was followed by a number of attempts at tackling this problem of Puranic genealogies. But the very sincere efforts of Dr. Pusalkar must be mentioned specially.⁴ As far as the king lists are concerned, he made very few changes from Pargiter's. But his new

1. BHARGAVA, PURSHOTTAMLAL. *India in the Vedic Age*, Lucknow, 1956. pp. 56-57.

2. PARGITER, F. E. *Ancient Indian Historical Tradition* Oxford, 1922.

3. *Ibid.* pp. 90-95.

4. PUSALKAR, A. D. "Traditional History from the Earliest Time to the Accession of Parikshit" in Pusalkar and Majumdar (Ed.), *The Vedic Age*. Bombay, 1953.

attempt, as far as chronology is concerned, is his *Manu-flood-Kali synchronism*. He went a step further and divided this period from 3110-1400 B.C. into four periods and even suggested that they corresponded to the four yugas of Indian tradition. In spite of this attempt, it must be said to the credit of Pusalkar, that he was aware that these traditional accounts ignored the geographic background. In a counsel of despair, he remarked: "it is impossible to rely on the traditional account as recorded in the epics and Puranas, at least in respect of those particulars which are so flatly contradicted by the evidence of the earlier texts—an evidence which is all the more valuable as it is based upon incidental notices not likely to be fabricated in order to serve any pre-conceived notion. Whatever we might think, therefore, of the kings and dynasties mentioned in the traditional accounts, *we can hardly accept without demur, the location of their principalities as described in the Epics and Puranas*".¹

This admitted inconsistency between the Vedic and the Puranic evidence is exactly tackled by Bhargava, with very important results for future work.² Only defect, if any, of this pioneer effort is a somewhat uncritical acceptance of the Manu-flood-kali synchronism. His genealogical list closely follows the lists of Pargiter and Pusalkar. But the greatest merit of Bhargava's work lies in the use of the Vedic and the Later Vedic literature to locate the ancestral homes of the later descendants of the main royal families that spread and established kingdoms all over Northern India. *Secondly he has mustered the entire literary evidence to show a nice time-space co-ordinate for the Aryan expansion for the first time.* In this attempt he made slight modifications of the genealogical lists and rounded it off by making it 100 generations before Parikshit. Since his data has more interesting possibilities than probably what Bhargava ever thought, we use his serial number of generations as a sort of *sequence dating* to make his time-space co-ordinate intelligible. He divides this period into :

1. Era of Sapta Sindhu
2. Era of Conquest
3. Era of Expansion
4. Era of Settlement.

In the first period, 27 generations of the main families stayed in the land of Sapta Sindhu. Yayati, Marutta and Mandhata made their conquests upto Jamuna and made their sacrifices on its banks.

In the second period, we see the first eastward migration of Bharata Daushanti (23) into the region upto the Ganga³ from the Sarasvati. King Jahnu of the Bharatas established

1. *Ibid.* p. 313.

2. BHARGAVA, *op. cit.*

3. *Aitareya Brahmana*. 39.9.

Kanyakubja and Kasi (Benaras). But both these advanced outposts were obliterated. Vishvamitra, contemporary of Sudas (38) became a Rishi. By the time of Sudas (38) Jamuna region was in the hands of a non-Aryan Bheda. Probably as a result of the victory of Sudas in the famous battle of Ten kings (*Dasa Rajna*), Yadava king named Vidarbha (37) migrated from Saptasindhu to Vidarbha and found a new kingdom. One of his sons Chidi founded Chedi.¹ Haihayas were in Saptasindhu upto Supratika (46) who was probably defeated by Sagara. Of the Haihaya sub-branches—Saryata established a kingdom at Anarta, and Avanti was established with Mahishmati as the capital. The last of the Haihayas, Punika was defeated by Chanda Pradyota who shifted the capital to Ujjain. Satvatas, Kuru, Panchalas settled in the Doab and the Saurasena country.

The third period is an era of expansion on a large scale. The Aikshvakus under Bhagiratha (50) moved into Kosala and founded Ayodhya. Nimi Mathava or Videha Mathava (50), in the company of his priest Gautama Rahugana crossed Sadanira (Gandak) and established the kingdom of Videha. One of his descendants Visala founded Vaisali. Parikshit I (83) separated Kuru kingdom from Panchala. Magadha and Anga were established very late (84). The final period, described as the Era of settlements represents the Mahabharata period.

As already commented, this story gives in brief, but absolutely unrelated to any definite chronology, and to use an archaeological analogy, a relative sequence of Aryan expansion in space and incidentally in time. Its value lies at that and no more.

The other fundamental error of the Puranic works is about their geographic horizon. Hence the geographic horizon at the Mahabharata war, as given in the Mahabharata as well as the Puranas are defective. Hence Bhargava's sequence of Aryan expansion is also defective and it does not refer to the age of the Great Battle, but to a much later period. Law has made a fine analysis, taking the geographic account of *Markandeya Purana* as the basis.² He has also shown how the geographic accounts of the peoples and countries were stereotyped, as it appeared in the *Vayu* and *Matsya*, the earliest Puranas. Later these were copied with all sorts of defects and we find sometimes the same people mentioned in the different cardinal regions of India. Motichandra³ and Schafer⁴ have also attempted analysis of the geographic names. With the mention

1. Rigveda. VII, 18, 9.

2. LAW, B. C. "Countries and peoples of India—Epic and puranic sources". *Annals of the Bhandarkar Oriental Institute*. XVII. 1935-36. pp. 217-42 and 319-39.

3. MOTICHANDRA. *Geographic and Economic studies in the Mahabharata-Upayama parva*. Published by the U. P. Historical Society, Lucknow, 1945.

4. SCHAFER, ROBERT. *Ethnography of Ancient India*, Wiesbaden (Germany), 1955.

See also :

CROWDSHAW, SASHIHUSHAH, *Ethnic Settlements in Ancient India*. Calcutta, 1955.

of Antioch and Rome, as suggested by Edgerton, and the intimate knowledge of places of Central Asia, their date cannot be earlier than the Kushan, and Motichandra admits that it should be around the Christian era or later. Finally, Paninian and Early Buddhist ignorance of Peninsular India south of Godavary; the smriti definitions of Aryavarta, as being north of Vindhya, certainly shatter the theories of Pusalkar and Bhargava. Hence an ideal solution is to put the lower limit of Aryan expansion (Era of Settlement) at about the beginning of the Christian era when most of the puranic material was incorporated in *Vayu* and *Matsya Puranas*.

Pargiter also attempted a very interesting correlation of tradition with linguistic and ethnological data. But one of his basic premises was his strong conviction that the Aryans came into India or at least were greatly attached to the Central Himalayan region and hence according to him, Ayodhya was very ancient. He justified the narration of the rivers of the Saptasindhu in the famous *madistul* from east to west. This theory was revived and put forward very vigorously by Schafer. This again raises issues, which we will comment at the end.

A very close analysis of the accounts of the Puranas by Pargiter showed him three unrelated traditions about the origin of the three main elements Ailas, Manvas and Sudyumnas. "In it (the myth regarding the origins), there is no connection between Manu's nine sons and Pururava Aila and Sudyumna except through Ila with her fabulous changes of form. It seems probable that three different myths have been blended together in an attempt to unify the origins of three different dominant races, said to have been derived from Manu, Pururavas and Sudyumna, and apparently constituting three separate stocks".¹ He suggested the very interesting possibility that the Ailas represent the Aryan, the Manavas represent the Dravidian and that the Sudyumnas represent the Austro-Asiatic (Munda and Mon-khmer).

Since he believed in a westward expansion of the Aryans from Pratishtana (Allahabad), he felt, that the Ailas, being the Aryans, would represent the speakers of the Inner group of the Indo-Aryan languages. Since the Aryans expanded in all directions, they gave rise to the 'Outer Band' of the Indo-Aryan languages. In support of this he quoted Grierson who declared that the ancient *Madhya Deso* (Mid-Land) was the home of the Inner Group of Indo-Aryan languages.

Thus we have summarized the merits and defects of the best contributions so far to the studies of our Tradition. Now we will make an attempt to see how far our recent knowledge of Indian archaeology stands in relation to the hypotheses stated above. In making these suggestions for consideration of the scholars interested in the problem, and of sanskritists in particular,

1. PARGITER, *op. cit.* 287-88 also p. 293.

certain lines of research are indicated with a view to verify the possibilities and throw more light on this problem. Before we go further a few general comments would be useful.

- (1) The genealogies, specially in view of the small number of synchronisms are subject to doubt. Similarly the confusion of names; for example Pusalkar questions the identification of Sudas, son of Pijavana with Sudas of the *Dasarajna*. Raychowdhary identifies Parikshit of the Epic with Vedic Parikshit. The latter formula again, by the by, can cut the time lag.
- (2) On the question of chronology, the main conflict is with archaeological dating of the Aryans. Giving the most liberal margin, we cannot take them earlier than 2000 B.C., unless, as is claimed by certain writers, our Indus Valley civilization proves to be Aryan. The widespread distribution of this civilization from the foot-hills of the Himalayas to the Arabian sea certainly conflicts with the traditions of the land-locked Aryans, of the Rigvedic period, who did not know the sea. But the generality of opinion seems to favour the theory that Harappan is Pre-Aryan and non-Aryan.

Finally the recent attempt of Lal to identify the Grey Ware folk with the Aryans has set in motion various attempts to identify the authors of the various strands of cultures. We have already discussed the dangers of any premature identifications, as in the case of Prof. Haimendorf. But the investigation of ancient city sites associated in tradition like Hastinapur, Mahishmati, Somnath opens a more safer line of study. Lal has made a very sound case for identifying the Grey Ware folk with the Aryans, and as far as our present knowledge is concerned, his hypothesis is more valid than the rest.

Similarly the large areas of Central Gangetic basin and the Vindhyan and Chota-Nagpur plateaux show a wide distribution of Copper hoards and Neolithic culture with shouldered celts and square axes with contacts and affinities to the Far eastern Copper bronze age civilizations. In view of the fact that we have extensive deposits of copper in the region also, we are on a fairly safe ground in inferring that there was a great epi-centre for a Copper-bronze Age civilization in the Gangetic basin. As we have pointed out already, the clearance of the luxuriant tropical forests of the Gangetic basin and the draining of the marshes, pre-supposes a higher technology. Since we have a vague hint from Hastinapur and other explorations of Lal, we are justified in identifying them as another major element of Indian culture. In this connection, it is very significant to recall that the five eastern kingdoms *Anga, Vanga, Kalinga, Sishma* and *Pundra* belong to the *Saudyumnas* of our tradition. This is the region with a predominance or a strong substratum of Proto-Australoid and Mongolid elements (Gondid of Von Eickstedt). Hence we are

justified in supporting the suggestion of Pargiter that Sudyumnas represent the Austric (Munda-Mon-Khmer) group.

About the Dravidian, more caution is needed. Prof. Von Eickstedt, in a personal communication, suggested that we are more justified in treating this as a linguistic term, than as an ethnic one. At one time, Dravidian had a much greater distribution, since it influenced the Sanskrit language at a very early age. Burrow has pointed that this contact could not be in the south, where we have the Dravidian speakers today. If we take that in a broad sense, there are only two possible claimants :

- (1) the Widespread Peninsular Neolithic cultures characterized by the celt with elliptical section with a wide-distribution in the Gangetic basin ; or
- (2) the Central Indian Chalcolithic cultures, which, though not genetically, are related to the Harappan as well as certain new elements coming from Iran in the second half of the II Millennium B.C. Pargiter's identification of Manavas with Dravidians attains some significance.

In this light, a novel interpretation can be placed on the famous Battle of Ten Kings of the Vedic Age. It is very significant that Sudas, the hero, comes from the heart of the Brahmavarta. The princes aligned against him were *Amis*, *Dhruyus*, *Turvasas*, *Yadus* and the *Purus* in coalition with certain Aryan and non-Aryan tribes—*Alinas* (modern Kafiristan), *Pakthas*, *Bhalanases*, *Sivas*. The success of Sudas marks the supremacy of the eastern wing of the Aryans settled in the Sarasvati, Drishadvati and the Ganga-Yamuna doab. We have already described the movement of *Yadavas*, *Haihayas* and the *Anavas* south-eastwards into Central India, leaving the Gangetic basin to the *Bharatas* etc. In the light of the recent evidence of Archaeology and the strong mutual influences which each of the three main Proto-historic cultures exercised on each other, the large scale colonization of Central India and the Deccan might represent the movement of a branch of Aryans who absorbed and mixed sufficiently with the Pre-Aryan people of the Indus basin. *Manavas*, might in that case, represent Aryans, Dravidians or both mixed up.

There is another major linguistic problem, which deserves the attention of the archaeologist and the historians, who have up to now divorced themselves from the linguists. It is well-known that we have two broad divisions within the Indo-Aryan and very significantly, they have a geographic contiguity. One of the suggestions made by Grierson was that there were two waves of Aryan movement. In this connection, we have discussed the Indo-Iranian contacts of the Post-Harappan period : and the two important elements : *Shahi-Tump*, *Jhukkar* with affinities to

Hissar III and the Londo. Piggot, while reviewing the article of Lal threw a very significant hint that either one or both might be Aryan. In that case another very interesting possible interpretation will be as follows :

The Grey ware with its affinities to that from Shah Tepe (Iran) might suggest the first wave of the Aryans who settled for a longer time in the Sarasvati valley. It is reported by Lal that there are slight differences between the Grey ware of Gangetic basin and the Bikaner region in forms and patterns. This fact, if true, will be very significant. In that case the 2nd wave will be represented by the Londo, Jiwanri etc., with affinities to Sialk cemetery B. The battle of the Ten Kings after all represents this struggle for power, resulting in a south-eastward deflection of the other Aryan wave. Grierson described the relation between the Inner and Outer bands in this way : Round the Midland or Madhya desa, "on three sides—west, south and east—lay a country inhabited in vedic times, by other Indo-Aryan tribes. This tract included the modern Punjab, Sind, Gujarat, Rajaputana and the country to the Oudh and Bihar. Over this band were scattered different tribes, each with its own dialect ; but it is *important to note that a comparison of the modern vernaculars shows that these outer dialects were all more closely related to each other than any of them was to the languages of the midland*".¹ In making this suggestion, I know the limitations of our knowledge and the state of our studies. It is very easy to slip from a legitimate inference into the realms of speculation. I submit that my speculation is as valid as any and plead for further examination of this hypothesis.

Now we close this discussion with one general observation. If we are prepared to agree that the Pre-Aryan languages, particularly the Dravidian and Austric influenced Sanskrit, and also that there was a cultural synthesis of all the elements, is it wrong to assume that the traditions which are handed over and preserved by the Aryans also contain certain non-Aryan and Pre-Aryan elements ? Then there is much less scope for breaking our bones on these various issues.

Rigveda is full of references to the Aryans and the non-Aryan *dasyus* and we have references even to the non-Aryan princes taking part in the *Dasarajna*. We have already seen in chapter IX (p. 156) the overlaps of the Proto-historic cultures and their inter-relations and movements. Thus the very home of the *Rigvedic* people was the scene where these Pre-Aryan and Aryan peoples lived and influenced each other.

1. *Imperial Gazetteer* Vol. I. Ch. 8. New edition, 1907. Section on languages by G. A. Grierson.

After all the Sumerian flood-legend, which got transformed into various versions like Babylonian, Hebrew etc., might have one more in the Sanskrit version. Could it not be that the Manavas represent the Pre-Aryan or Dravidian, as suggested by Pargiter ? This miscegenation could only result from a long co-existence and contacts between the various cultural elements. Archaeology certainly points to that ; and what has been described in this book as the Proto-historic tri-junction, is the area to look for it.

APPENDIX II

THE PROBLEM OF THE BLACK-AND-RED WARES

The Problem

In this appendix, it is proposed to discuss certain general problems arising out of our recent studies in India regarding this crucial ceramic type, hitherto described loosely as the 'Megalithic pottery.' The most characteristic feature of this ware is its method of firing in the kiln. Since it is placed in an inverted position, the interior and a portion of the exterior at the top turn black due to firing under reduction. A pottery with a similar technique, but chronologically very early in Pre-Dynastic Egypt and other parts of Western Asia, is described as the 'Black-topped ware'. For well over a century, this black-and-red ware, as it is popularly known in Indian archaeological literature, was being exposed or excavated from the hundreds of megalithic burials all over South India and hence it was designated megalithic ware. But within the last five years, and specially after the large scale excavations at Maheshvar-Navda Toli (1952-53), followed by Nagda, Ujjain, Somnath, Nevasa, Bahal, its occurrence with the iron in the Pre-N.B.P. levels, and its occurrence outside the so-called megalithic areas (where megaliths are not known to occur), have given rise to a lively controversy.

A second complication was the discovery of a painted variety of this ware in the Chalcolithic levels at Navda Toli again started a new line. Besides by its first recognition at Rangpur, now we know that its epi-centre is in the Chambal basin in Eastern Rajasthan. At Ahar, we have nearly 20 feet deposits of this ware. It was noticed at Nagda and Lothal in the earliest levels under the mud-brick platforms. This discovery gave fresh food for thought and its relation (1) to the local wares of the site, where it occurs in small quantities and (2) to the succeeding Iron Age pottery of the Early Historic period came into lime light. Hence it gave rise to the following questions :

1. Whether it is just a resemblance in technique without any other cultural and chronological implications,
2. or, whether the whole ceramic group belongs to a single complex,
3. and if so, the relation of these Chalcolithic to the Historic wares.

Before trying to answer these questions, it should be noted, that there are serious gaps in our knowledge about the true character and origin of this pottery. At the last Symposium, held under the auspices of the Department of Archaeology, Government of India, some attention was paid

to the Chalcolithic or Proto-historic black-and-red wares. But pending the publication of the entire range of forms and patterns, it will be premature to attempt any dogmatic reply to the problems posed above. *In this appendix, the writer expresses his personal views in the matter.*

Proto-historic wares

For the sake of convenience, we shall discuss this ware first, because of its implications on chronology. A ware with inverted firing resulting in black-and-red, black-and-tan and black-and-grey (probably due to the firing techniques and temperature ranges) has been found associated with the Harappan and the Grey Ware at Rupar, in the Bikaner region with the Grey ware, with the earliest levels of the Harappan at Lothal, and with Post-Harappan cultures at Rangpur, Amra and Lakhbawal, and with the Central Indian chalcolithic sites in Malwa (Navda Toli and Ujjain). The most significant discovery was at Ahar, where in phases Ia and IB it occurs without any other ware and in Ic with the black-on-red painted ware. Recently, Dr. Puri explored a number of sites of this culture in the Chambal and its tributaries in Rajasthan. This is very important in that it provides the evidence, for the first time, since this controversy started, of another independent cultural group within the Late Harappan and Post-Harappan cultures of India.

At the last symposium, the differences between the various groups in these Proto-historic wares was sought to be made on the basis of the position of the designs, the relation supposed to exist of the black-and-red wares with the local wares of the relevant site. It was resolved that "there is no absolute identify either in shapes or designs except in two cases where there is a vague resemblance in the form". In view of the fact that it was not possible to compare in detail, all the forms available in the whole range of sites, there need not be any finality about this conclusion. The writer puts forward his views to keep up our efforts at understanding the problem still further.

The minor divergences in shapes and fabrics, when we are dealing with such a vast region and the differences in the nature and size of the excavations need not be a great obstacle for establishing contacts between the various sites of the period. Naturally, when a new technique emerges, it is sought to be copied and resemblances to the local forms is much less significant than the divergences. They mark the contacts and association with other sites. For example, the bowl with an everted lip and one with slight incipient beaded rim, which occur at Lothal and Amra, do not fit into any ceramic form associated with Harappa. Finally the existence of an independent ceramic tradition at the heart of this region and with geographic contiguity to the other cultures, weakens any assumptions of an independent origin of this technique at each of these sites.

So the writer pleads for a more comprehensive study of a large volume of material.¹

Early Historic wares

In view of the above discussion, it is necessary to treat this ware separately. Here we have the additional advantage, that this pottery belongs to a similar culture complex. Only the Bahal has been given here, but its position is special, in view of the link it provides between Central India and Brahmagiri.² For the sake of this comparative study, all available forms from Maheshvar, Timbarva, Bahal, Rangpur, Nasik, Sisupalgarh, Brahmagiri, Sanganakallu, Hampasagar, Guntakal and Porkalam were classified into various shapes. The chart (Fig. 42) gives a synoptic morphology of these forms and brings out the relations between the various groups of pottery. Their distribution is indicated on the map in the left hand corner. Now it is proposed to discuss the following issues :

1. Fabrics
2. Forms and decorations
3. Distribution and chronology.

We have already described its distinctive method of firing. Taking the entire area, there is a wide range of coarse and fine wares at any site. But there is a tendency towards the appearance of thinner wares as one moves southwards. As regards the surface treatment, all these wares have burnished slips. The archaeological chemist of India thought that the sherds from Arikamedu were subject to salt glazing as there was "the characteristic crackled surface or 'crazing' under the microscope".³ This effect results from the difference in the coefficient of expansion between the body and the slip, and in itself, does not provide evidence of salt-glazing. Actually, if this criterion were accepted, the pottery from Timbarva (Gujarat) and Maheshvar shows definite evidence of crackling. Dr. Wheeler, in trying to compare this pottery with the N.B.P., also asserted that the Brahmagiri wares were made on a 'slow wheel'. But this term is

1. For example, the so-called differences between the Chalcolithic cultures of Nagda, Navda Toli and Nevasa, Nasik and Jorwe are appearing to be more insignificant than the common affinities. Similarly the distribution of select crucial types in the black-on-red painted wares has brought out the affinities in time and space of these wares of the Post-Harappa period.

2. I am very much obliged to Shri S. N. Chowdhary, the present Tutor in the Department for helping me in tracing and classifying the pottery. The forms at Hampasagar (Bellary) and Guntakal were taken from the unpublished thesis of the author. Shri M. N. Deshpande graciously permitted me to reproduce the forms from Bahal. Since these have a great bearing on the relation between the Central Indian and South Indian wares. For the latest material see *Indian Archaeology* 1956-57.

3. WHEELER, R. E. M. "Arikamedu" *Ancient India* No. 2, 1946. See the chemist's note on p. 93.

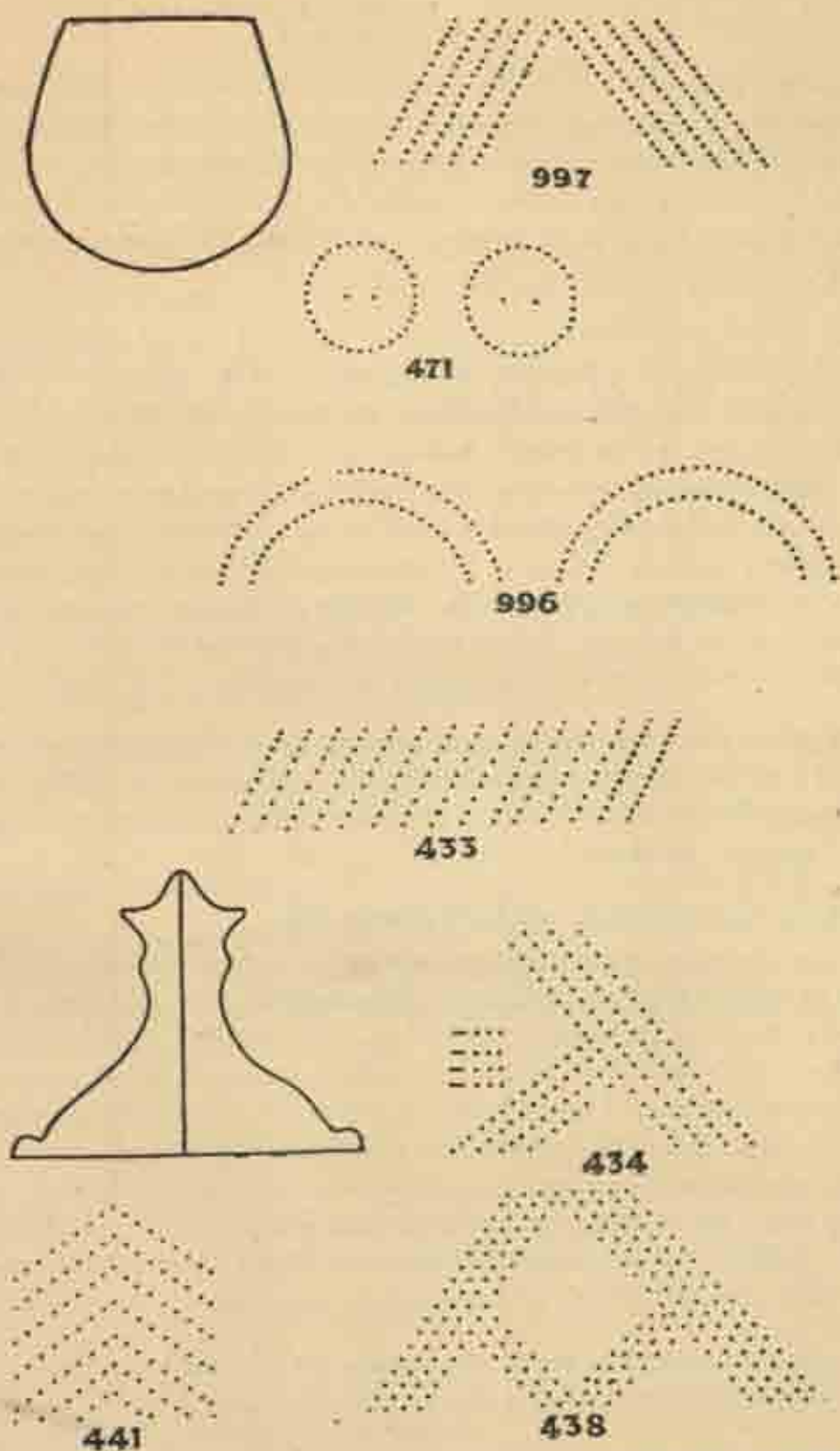


Fig. 43. Painted decorations on the Black-and-red ware from Perumbair and Madura. The numbers refer to those in the Madras Museum catalogues.

and also with it. Since the N.B.P., in its peripheral areas has to be dated slightly later than in its focus, we can easily date the beginnings of this black-and-red ware with iron to the 5th and 6th century B.C. The best evidence, to date, comes from Ujjain and Maheshvar. According to the tradition the last of the Haihayas, Punika, was defeated by Chanda Pradyota and Ujjain was made the capital of Avanti. Hence we are on safe grounds in dating the beginning of iron to the 6th century B.C.

In this wide range of distribution in space and time, is it possible to draw a dividing line between the pottery? Such a possibility was discussed by N. R. Banerji.¹ His reasons were: (1) difference in the outer colour, (2) use of fast and slow wheels, (3) use of salt glazing, and (4) differences in form and chronology. Most of these points have been disposed off already. The border where the line can be drawn is arbitrary, if we bear in mind the distance between Maski (belonging to the Southern Megalithic area) and Nevasa (belonging to the Northern group). If the distinction is sought to be made on the system of burials, our knowledge is too meagre at this stage about megaliths in Northern India. We have already put forward a suggestion that iron and black-and-red ware might have been adopted by the megalithic people or the *vice-versa*. Bahal burials (Tekwada) seem to indicate a sort of connection.

The definite chronological priority of this ware in Central India also weakens any assumption that two completely independent ceramic groups, but with such positive affinities, could remain isolated in space. Besides, we have as yet no palpable evidence for very early dates for the megalithic burial complex (see ch. VI).

Relation between the Proto-historic and Early Historic wares

This relation requires a more detailed investigation, as to how exactly the Proto-historic pottery lost its tradition of painting and yet retained remarkable affinities in forms. One should have a look at the forms published by Dr. Puri in *Indian Archaeology* 1956-57. Similarly the relation between the forms of both the phases at Navdatoli vaguely suggests certain continuity. The burial pottery at Tekwada (Bahal) belonging to 'Ib' acts as a link and probably we should look for more links. One of the possibilities is a technological revolution and with the advent of iron these communities in the Eastern Rajaputana seem to have acquired mobility and strength. But the only snag in the evidence is our ignorance of the intervening gap between Periods Ic and II at Ahar. Probably more exploration and excavation of one or two different sites may help us, to see whether any new cultural element emerges at this time.

1. Minutes of Symposium held on the 19th to 21st September 1954 and circulated by the Director General of Archaeology in India, New Delhi.

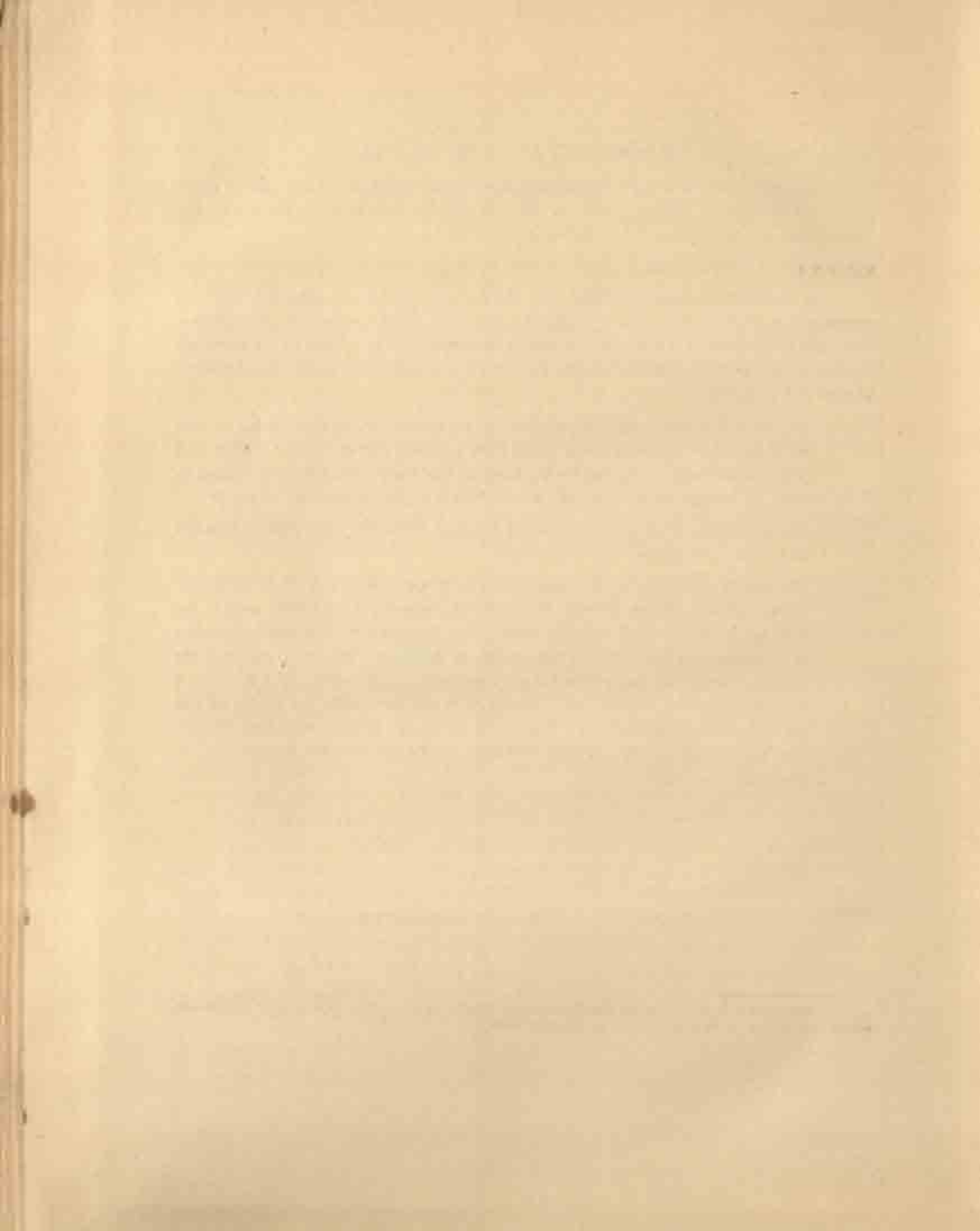
Finally one point which requires investigation is the vast spread of this area and the emergence of this pottery at Sonepur, Orissa etc. Does it suggest a movement into Magadha along the foot-hills of the Vindhya ?

Conclusion :

The foregoing discussion, as well as some of the issues raised in the main text, call forth greater and intensive studies. But at the present, it may be stated, our knowledge supports a hypothesis of this ceramic fabric belonging to a single complex and its relation to the associated cultures remains to be ascertained by further excavations in certain crucial areas. The desiderata may be stated as follows :

1. The distribution of the black-and-red wares in the North and their stratigraphic relation to the Chalcolithic cultures of the Indus basin including Bikaner and the Punjab, and Kathiawad, Central India and Northern and Central Deccan. Besides their relation to the Grey wares is to be ascertained by excavations in the Bikaner area. (Fig 39)
2. The distribution of megaliths north of the Vindhya and a fresh excavation of Junapani and Thakurghat stone circles near Nagpur.
3. The general question of the typology of iron tools in the North and the South. Most of the types are common, the only distinctive and exclusive (at the present stage of our knowledge) being the shaft-hole⁶ axe at Taxila and the adze with a ring fastener, supposed to be a megalithic type. But the later occurs at Junapani. The former occurs in the Mauryan period and hence does not pre-suppose any independent origin, but only a general spread from Western Asia. Hence more elaborate studies are needed so that the co-ordination becomes easy. Since the movement of other associated material objects like painted pottery and blade technique can be demonstrated, this becomes all the more important.

⁶ According to Dr. H. D. Sankalia, a shaft-hole axe was found at Nevata in their Phase II which is contemporary with the N. B. P. I am grateful to him for this information.



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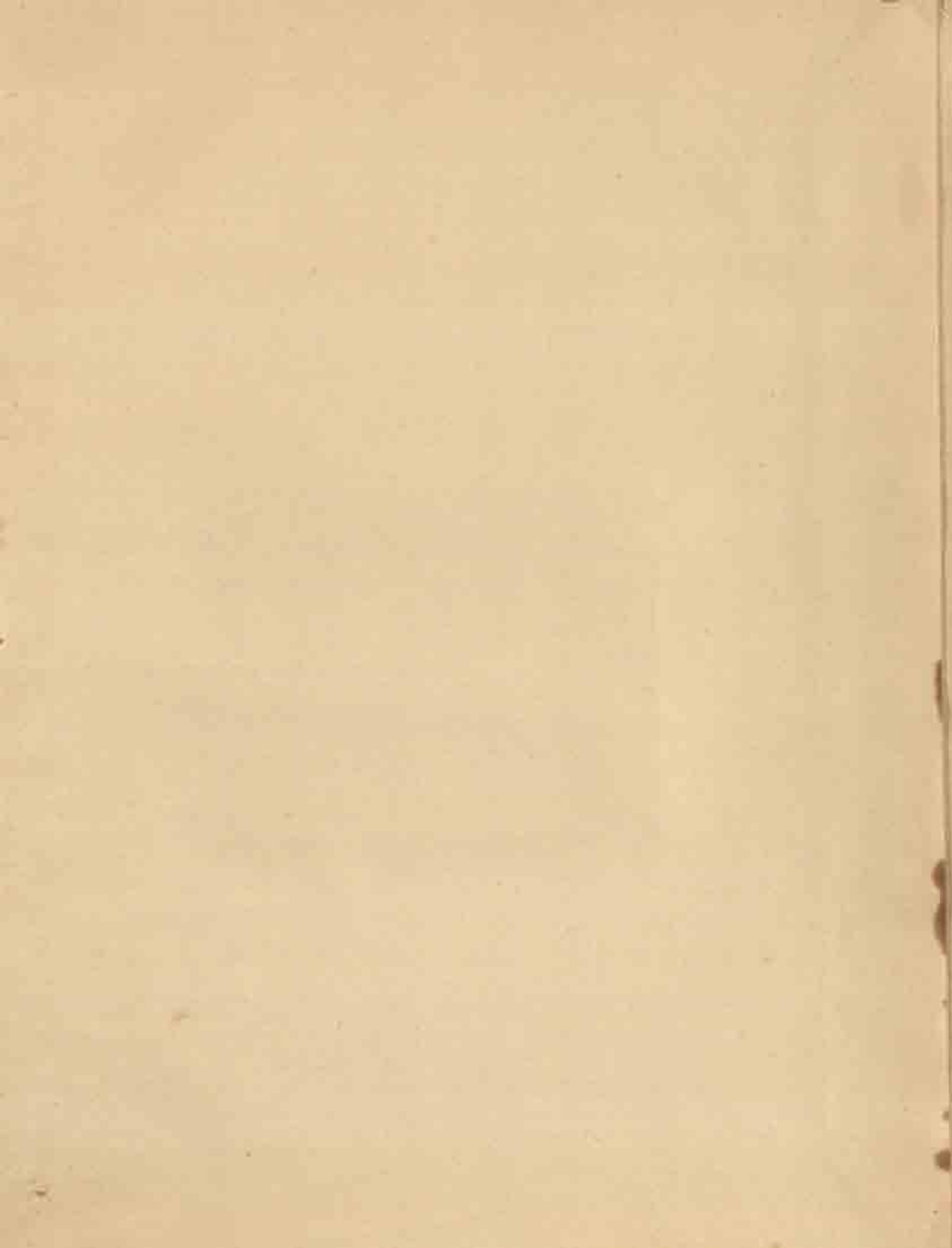
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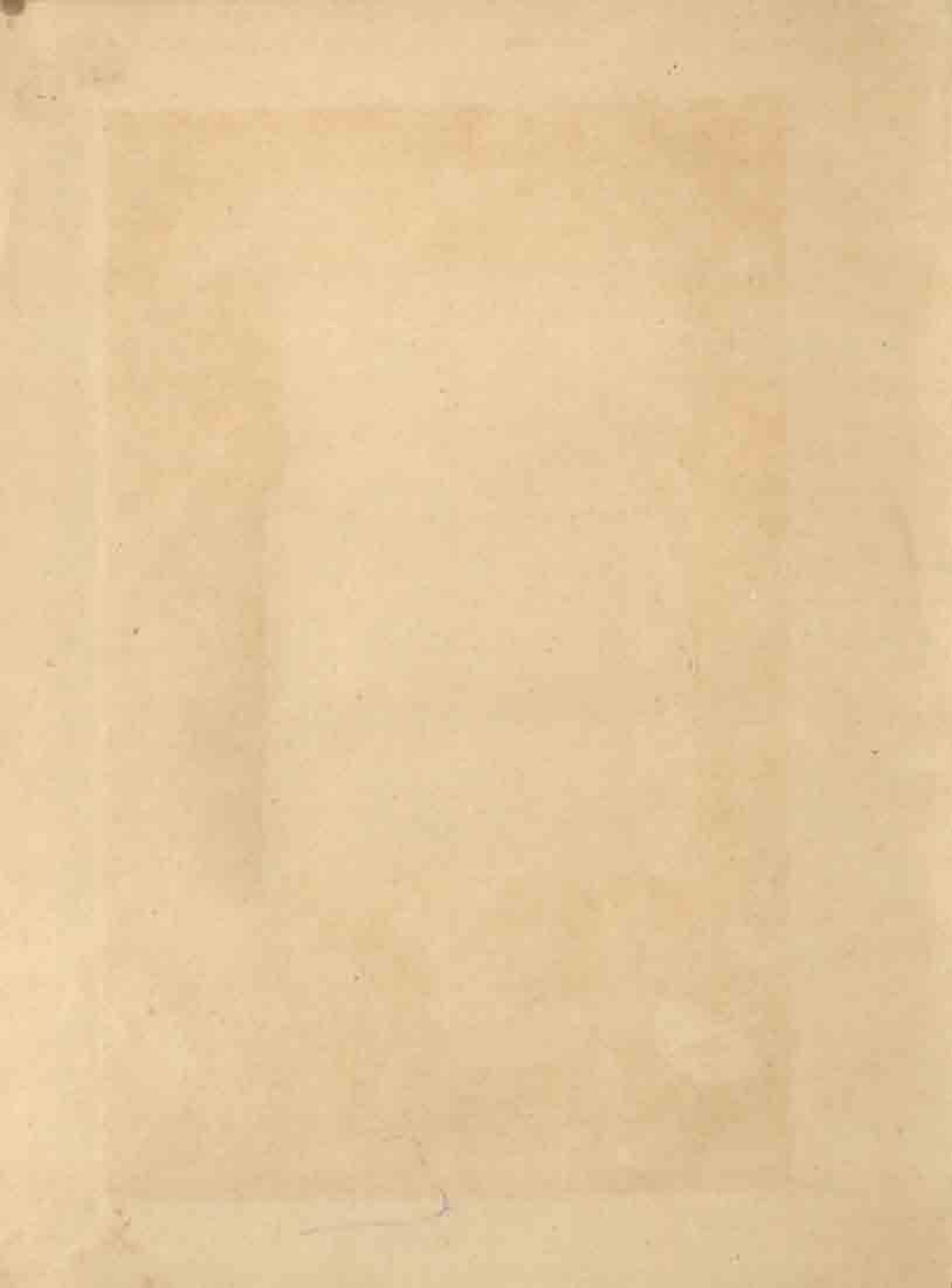
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