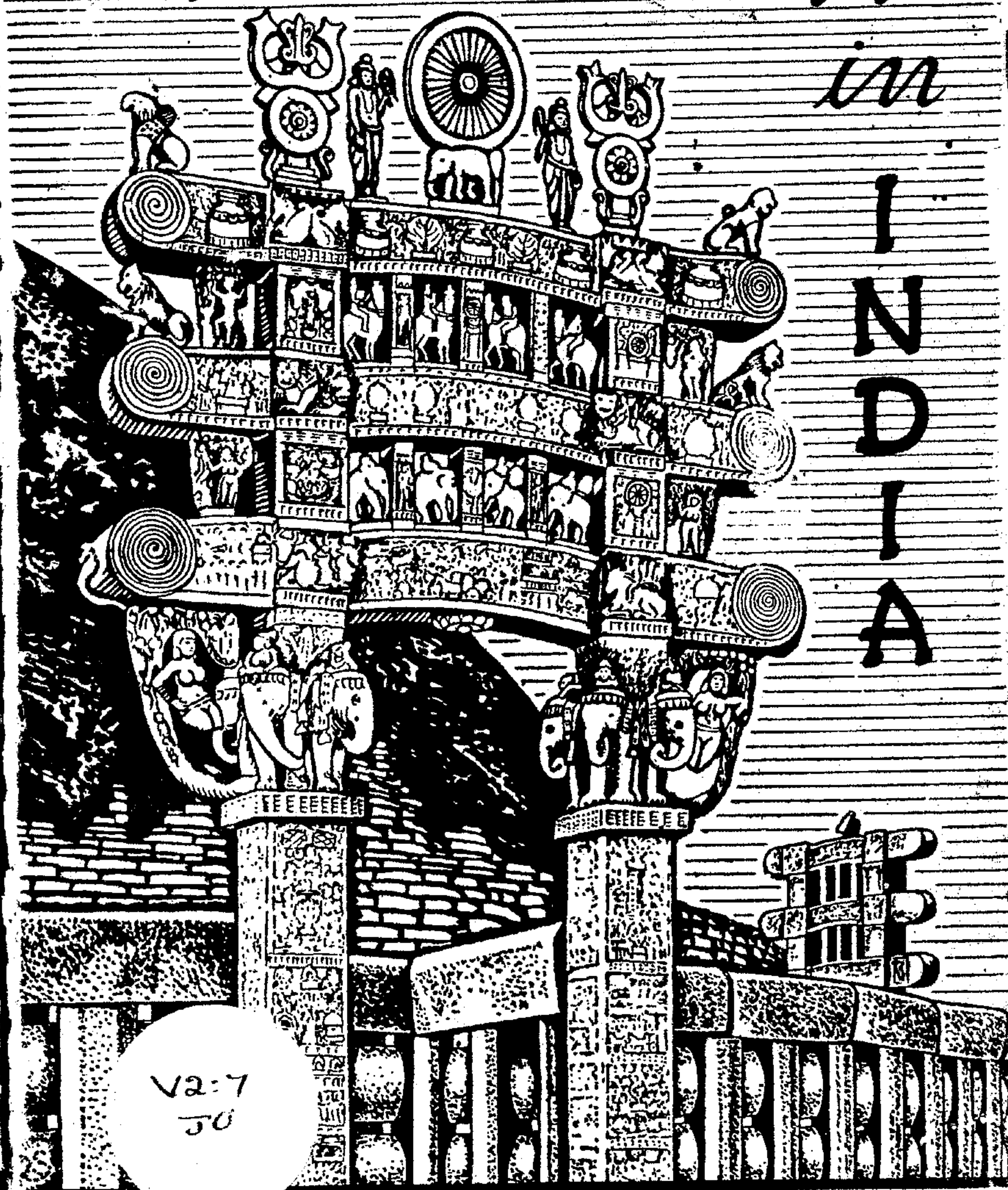


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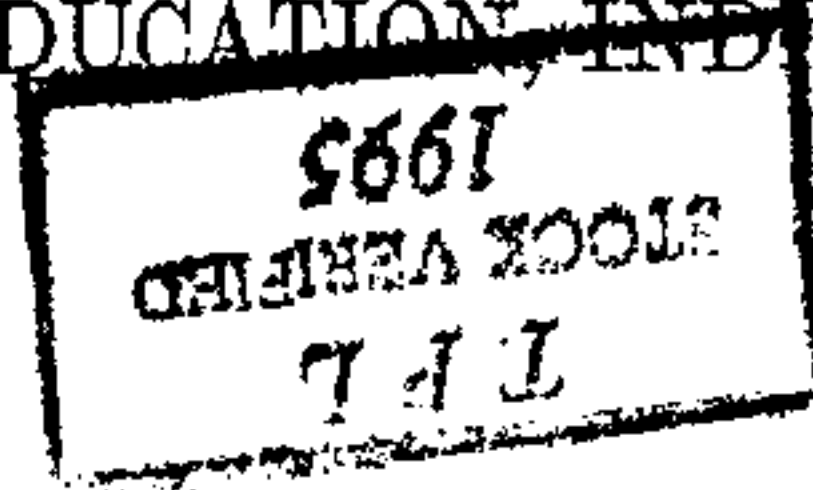
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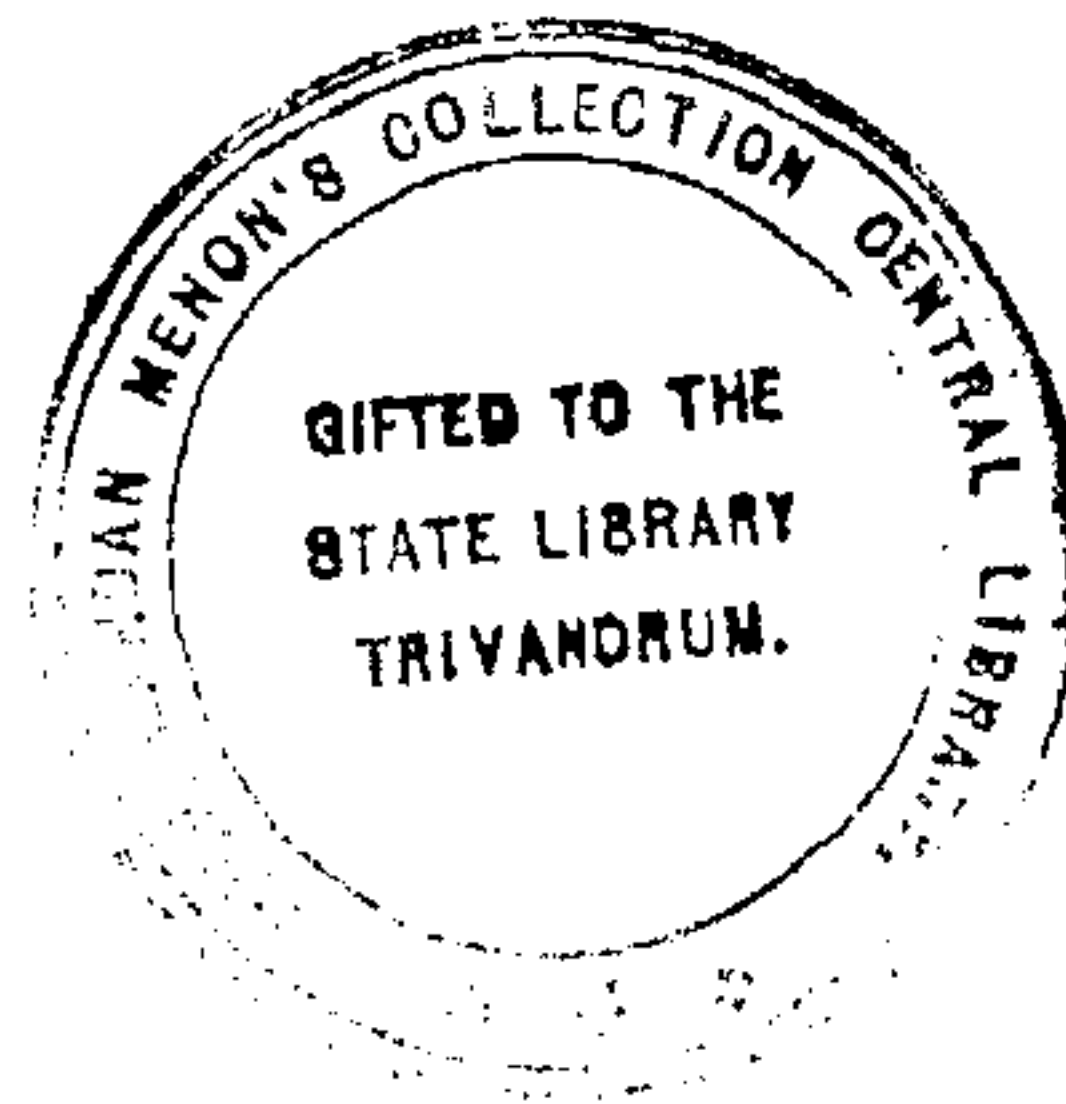


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PREFACE

THE present handbook attempts to cover in a short compass the various aspects of Indian archaeology and is intended for the use of general readers in India and abroad. The specialist will find in it little that is new, while the layman may feel that some of the chapters assume a greater acquaintance with the subject than is justified. This is perhaps unavoidable in any work which seeks to avoid the extremes of mere generality and too much specialization. It is, however, hoped that the reader will make allowances for this intrinsic difficulty and treat the handbook as an introduction to the subject for the average educated person.

The chapters in the book have been contributed by the officers of the Department of Archaeology attached to the Ministry of Education. The scope of the book has not, however, been restricted to the activities of that Department. Recognition has been given to whatever work has been done by the Provincial or State Governments and by private bodies, including Universities and learned societies, both Indian and foreign.

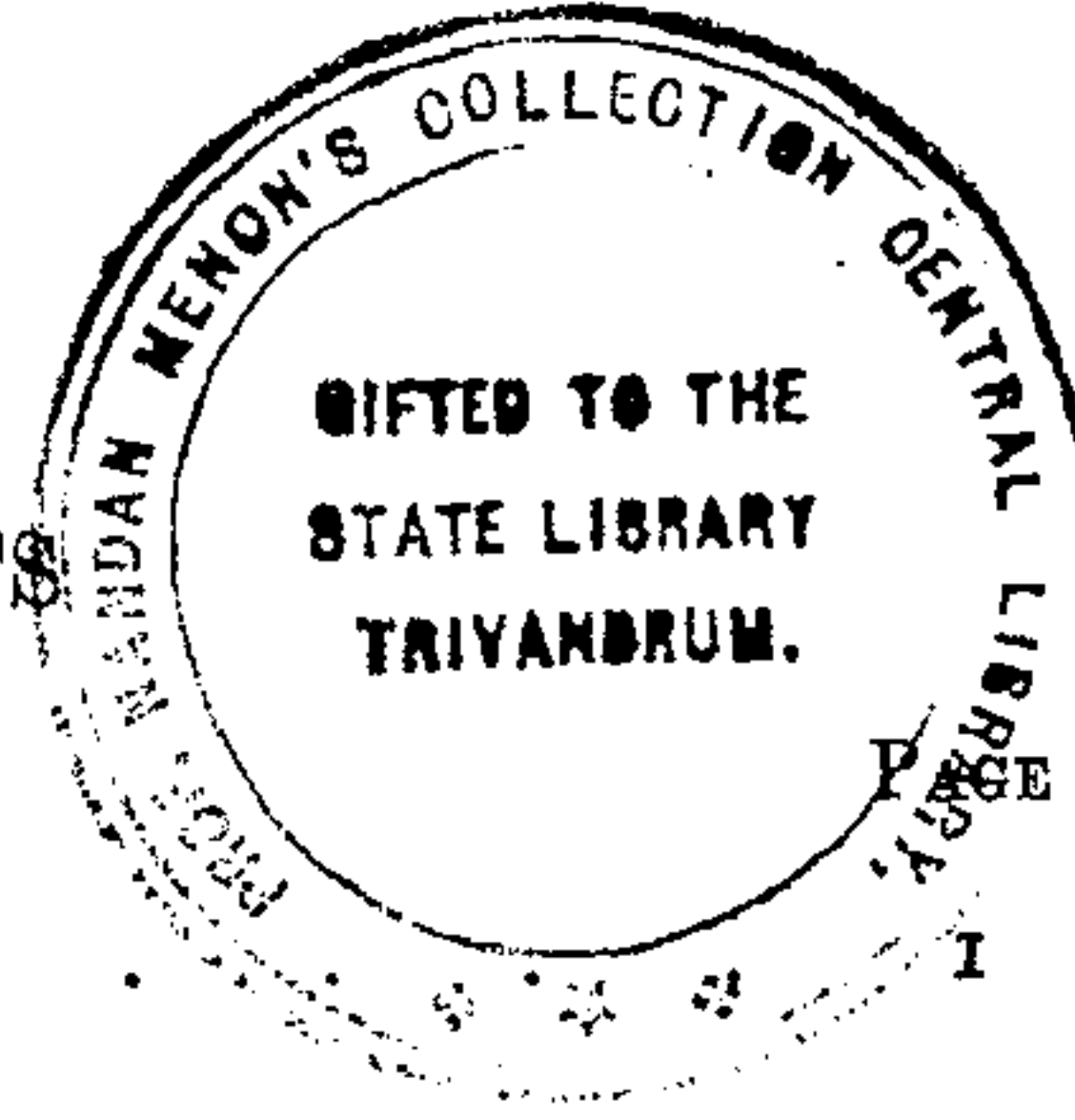
It will be observed that the writers have referred freely to the archaeology of the regions now comprised in Pakistan. This is inevitable from the nature of the case. Present-day political boundaries do not necessarily conform to ancient cultural zones. Short bibliographies have been given at the end of chapters wherever necessary.

I take this opportunity of thanking all the officers who have helped in the production of this handbook.

NEW DELHI,
October 5, 1949 }

HUMAYUN KABIR

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CHAPTER I

THE STORY OF INDIAN ARCHAEOLOGY

1784 to 1861

IT was in the year 1862 that the Archaeological Survey of India was established. We must, however, go back another seventy years to obtain a clear picture of the growing interest in archaeological studies and the circumstances which led to the creation of this Department. In 1783 Sir William Jones came to Calcutta as a Puisne Judge of the Supreme Court and began to learn Sanskrit. The idea of the foundation of an institution for promoting the study of oriental literature and culture was first conceived by him. In January 1784, within four months of his arrival, a meeting was held at Calcutta in which a resolution was passed for the foundation of a society with the object of enquiring 'into the history and antiquities, arts, sciences and literature of Asia'.

The establishment of this institution under the name of the Asiatic Society and of a museum under its auspices was received with great enthusiasm by scholars interested in oriental studies. After this, things began to move quickly. Within the next few years, descriptions of many ancient ruins of India were published for the first time in the *Asiatic Researches* and the Society's journal. An attempt was also made to study not only the literature but also Indian archaeology in its various branches, particularly epigraphy and numismatics. This study received a further impetus when in 1837 Mr. James Prinsep, the then Secretary of the Society, discovered the key to the Brāhmī alphabet. This script in which were written the earliest inscriptions of India had so far baffled all scholars. Within a few years of this event was deciphered the second script prevalent in the North-West, commonly known as Kharoshthī.

There was, however, no systematic exploration of the antiquarian remains in the country during all these years. In 1848 Alexander Cunningham published a paper in the *Journal of the Calcutta Society* in which he urged that the Government of India should help in the preservation of ancient monuments of India by the appointment of a suitable officer at Government expense, who should have a thorough knowledge of the religions and arts of India and should also be an epigraphist as well as a numismatist. Cunningham had come to India in 1831 in the service of the Government of India as a Lieutenant of the Royal Engineers and had already made his mark as an archaeologist and numismatist. As early as 1836 Prinsep writing in the *Journal of the Bengal Asiatic Society* (V, p. 652)

said, 'Henceforward my readers should understand, and they will soon perceive the fact, that my coin essays are joint productions, and that I have an auxiliary at my elbow, far better acquainted with the contents of, I may say, all the collections of coins in India, than I have leisure to become'.

1862 to 1901

Cunningham's appeal met with no response from Government for some years, but in 1860, after India had passed under the Crown, Lord Canning, the first Viceroy of India, decided at the instance of a number of learned Societies and scholars to establish an Archaeological Department of Northern India in order to preserve the innumerable ancient monuments there. Cunningham was appointed the first Archaeological Surveyor of India on a purely temporary basis. According to the minutes of the Governor-General in Council, his duties were 'to make an accurate description of such remains as most deserve notice, with the history of them so far as it is traceable and a record of the traditions that are retained regarding them'. It was clearly indicated in the minutes that no expenditure on the repairs and preservation of these monuments was contemplated. During the four years of his appointment (1862 to 1865), Cunningham's activities were confined only within the North-Western Provinces (present U. P.) and Bihar.

In 1866, however, this post was retrenched by Lord Lawrence, but this led to a great agitation in the country. Scholars like James Fergusson and others advocated the re-establishment of the Archaeological Department under the Government of India. In 1870, under the Viceroyalty of Lord Mayo, the Government of India sanctioned the post of a Director General of Archaeological Survey of India and offered it to Cunningham. He was also given three assistants, Messrs. J. D. Beglar and A. C. L. Carlleyle and H. B. W. Garrick. Their activities were confined only to northern India and mainly to the collection of historical and geographical data and preparation of plans of important monuments.

It may be mentioned here that a short time before this had appeared the translation of Hiuen Tsang's travels. Cunningham spent a greater part of his time in identifying the places visited by the Chinese pilgrim, but the volume of work done by him was amazing. During his tenure of service he published twenty one volumes of the Reports of the Archaeological Survey of India. However much out of date they may be, they still contain a great amount of interesting information and data. Of his other numerous publications, mention must be made of the first volume of the *Corpus Inscriptionum*

Indicarum containing the inscriptions of Aśoka (1877); the *Ancient Geography of India*, I, Buddhist period (1871), the *Stūpa of Bharhut* (1879) and the *Book of Indian Eras* (1884).

In 1874 the activities of the Survey were extended to western and southern India and Dr. James Burgess was appointed the Archaeological Surveyor and reporter to Government for these parts.

The conservation of ancient monuments, however, did not form any part of the duties of either General Cunningham or Dr. Burgess. This service was supposed to be performed by the provincial Governments through their Public Works Department. The result was that scant attention was paid to the structural monuments of India. Many of the striking ones had been left uncared for a long time and were fast disintegrating. This unsatisfactory arrangement continued till 1878, when Lord Lytton, the then Viceroy of India, wrote: 'The preservation of the national antiquities and works of art ought not to be exclusively left to the charge of Local Governments, which may not always be alive to the importance of such a duty. Lieut.-Governors who combine aesthetic culture with administrative energy are not likely to be very common, and I cannot conceive any claims upon the administrative initiative and financial resources of the Supreme Government more essentially imperious than this'. The same year saw another great archaeological event in the passing of the Indian Treasure Trove Act (Act VI of 1878).

This pronouncement of Lord Lytton led to the creation in 1881 of the post of a 'Curator of Ancient Monuments'. His duty was to prepare a classified list of Ancient Monuments of each Province and to advise Government as to which of them were fit 'to be kept in permanent good repair, or were decayed beyond that point but not in complete ruin, or were unimportant or irretrievably ruined.' He was also to advise the Public Works Department in the work of repairs for which a grant-in-aid was provided by the Government of India. This post, however, lasted for only four years. Major H. H. Cole, R. E., the incumbent of the post, produced a number of valuable though incomplete reports formulating a programme of conservation work to be followed in the future and also those on several important groups of monuments. Besides, he produced under the title *Preservation of National Monuments in India* (Calcutta 1881-85) ten folio volumes containing illustrations of some of the most famous monuments in his charge. With the abolition of this post, the task of conservation of monuments again devolved on the Provincial Governments.

With the retirement of General Cunningham in 1885, the surveys of northern and southern India were amalgamated and placed under the charge of Dr. Burgess as the Director General whose duty was to look after conservation, survey and research. The whole of British India was divided into five Circles, viz., Madras, Bombay, the Punjab (with Sind and Rajputana), the N. W. (now United) Provinces (with Central India and the Central Provinces) and Bengal (with Assam). The Director General was expected to superintend the work of the whole of India with the assistance of three Surveyors and two Assistant Surveyors. To this cadre was added the services of an Epigraphist for editing and translating inscriptions in Sanskrit, Pāli and South Indian languages. This post was held by Dr. E. Hultzsch. Unlike Cunningham, who issued Annual Reports on the exploration tours undertaken by him, Burgess concentrated his activities mainly on the study of particular monuments in which he felt interested. Within a period of less than thirty years (1874 to 1902), he produced thirty-two volumes in the New Imperial Series. Of these thirteen volumes were contributed by himself and the remaining by his associates.

With the retirement of Burgess in 1889 the Survey again fell into bad days. The post of Director General was kept in abeyance, and Burma, Bengal, the Punjab and the Indian States were left without any Surveyors.

This sad state of affairs continued till the end of the last century. In 1895, however, the Government of India came to the conclusion that it was not possible to disband the Survey altogether nor was it advisable to maintain it at the then reduced scale. According to this decision, a new scheme was introduced in 1899 dividing the country into five Circles, viz., (1) Madras and Coorg, (2) Bombay, Berar and Sind, (3) the Punjab, Baluchistan and Ajmer, (4) the U. P. and the C. P. and (5) Bengal and Assam. Each Circle was to remain in charge of a Surveyor, paid by the Central Government but under the administrative control of the Provincial Governments. His official activities were to be limited exclusively to advising Provincial Governments in the matter of conservation. The post of the Epigraphist was also made permanent. As Dr. Hultzsch was essentially a specialist in South Indian Epigraphy, other scholars were encouraged to publish articles in the *Epigraphia Indica*.

With the appointment of Lord Curzon as the Viceroy of India a new day was dawning for Indian archaeology. Within a few weeks of his landing, on the 1st February, 1899, he delivered a speech at a meeting of the Asiatic Society of Bengal and announced his intention, during his term of office, to encourage archaeological

study and research. A year later speaking before the same Society, he elaborated his scheme and said: 'In the course of my recent tour, during which I visited some of the most famous sites and beautiful or historic buildings in India, I more than once remarked in reply to Municipal addresses that I regarded the conservation of ancient monuments as one of the primary obligations of Government. We have a duty to our forerunners, as well as to our contemporaries and to our descendants,—nay, our duty to the two latter classes in itself demands the recognition of an obligation to the former, since we are the custodians for our own age of that which has been bequeathed to us by an earlier, and since posterity will rightly blame us if, owing to our neglect, they fail to reap the same advantages that we have been privileged to enjoy. Moreover, how can we expect at the hands of futurity any consideration for the productions of our own time—if indeed any are worthy of such—unless we have ourselves shown a like respect to the handiwork of our predecessors?

'This obligation, which I assert and accept on behalf of Government,' Lord Curzon went on to say, 'is one of an even more binding character in India than in many European countries. There, abundant private wealth is available for the acquisition or the conservation of that which is frequently private property. Corporations, Societies, Endowments, Trusts provide a vast machinery that relieves the Government of a large portion of its obligation. The historic buildings, the magnificent temples, the inestimable works of art are invested with a publicity that to some extent saves them from the risk of desecration or the encroachments of decay. Here, all is different. India is covered with the visible records of vanished dynasties of forgotten monarchs, or persecuted and sometimes dishonoured creeds. These monuments are for the most part, though there are notable exceptions, in British territory, and on soil belonging to Government. Many of them are in out-of-the-way places, and are liable to the combined ravages of a tropical climate, an exuberant flora, and very often a local and ignorant population who see only in an ancient building the means of inexpensively raising a modern one for their own convenience. All these circumstances explain the peculiar responsibility that rests upon Government in India'.

Lord Curzon concluded his speech by expressing the hope that there would be no further interruptions in archaeological work as there had been till that time and the continuous progress would be maintained through 'a definite policy of more active work, of closer supervision, and of larger outlay'. Consequently, in his proposals

to the Secretary of State, he made it clear that the Government of India could not divest themselves of all responsibility for the preservation of the great ancient monuments of India. 'They felt that it would be the Supreme Government and not the Provincial Governments, who would always be held in judgment of the civilized world primarily responsible for maintaining intact this great inheritance, and they thought it unsafe to trust that the subordinate Government would always be alive to the importance of the duty or would always be willing or able, under the pressing exigencies of provincial finance, to devote funds to it. They felt the necessity of someone at the head of the operations, who could not only assist local effort from an imperial standpoint with that advice and guidance which had been lacking since the days of Dr. Burgess, but could also maintain a continuous record of archaeological needs of the various Provinces, and of the work undertaken to meet those needs.'

The Secretary of State accepted these proposals and sanctioned, towards the end of 1901, the revival of the post of the Director General of Archaeology in India. He also laid down that a lakh of rupees should be spent every year on archaeological work of special importance and magnitude. Mr. (later Sir) John Marshall was appointed to this post for a term of five years and came to India early in 1902. Already in 1901 another important reform had been introduced through the intervention of Lord Curzon. Until this time there was no machinery to undertake conservation of monuments in the Indian States. By an order of the Government of India in the Foreign Department, dated the 4th June, 1901, the Indian States were put under one or other of the Surveyors, but with clear instructions not to do anything which might offend the rulers. They were directed to convey to the respective Darbars all suggestions made by them through the Political authorities for taking any action that the Darbars deemed proper. A few of the States took full advantage of this offer of help by the Department. Some of the very important national monuments in the States received proper attention with or without the help of the grant-in-aid from the Government of India. The position, however, remained practically unchanged in many of the States and hardly any attention was paid to the ancient monuments lying under their territorial jurisdiction.

1902 to Present Day

It will be seen that Marshall's position as Director General was at the beginning no better than that of Major Cole, the Curator of Ancient Monuments, who held office from 1880 to 1883. His main duties were to exercise a general supervision over all archaeological

work, be it excavation, conservation, giving protection to monuments or research. He was, with the help of the Surveyors, to ascertain the special requirements of each Province and also to advise Government as to how the grant-in-aid should be distributed. He was to co-ordinate and bring up-to-date the survey work carried out in different parts of the country and to submit annually to the Government of India a consolidated report on the progress made during an official year. The Surveyors in their turn had to submit an annual report to the Provincial Governments on the work accomplished by them during the year and also a programme of work for the following year. The work of conservation was done, as before, through the medium of the Public Works Department and nearly three-fourths of the money expended on it came from the Provincial exchequer. Even then the funds and the staff were wholly inadequate for tackling all the important work of conservation and archaeological problems.

In 1903, there were three temporary additions to the staff. A fourth half-time officer was made available for the N. W. F. P. and Baluchistan in Dr. M. A. (later Sir Aurel) Stein. He was to be a part-time Archaeological Superintendent in addition to his own duties as Inspector General of Education. Another important step taken in the same year was the creation of archaeological scholarships for training Indian students in archaeology, architecture and archaeological chemistry. In 1904 the Legislature passed the much needed Ancient Monuments Preservation Act which was to mark a new era for Indian archaeology. This important matter was actually taken in hand by Lord Curzon during the very first year of his administration, but it took some years to complete all the formalities.

The main objects of the Act were 'to ensure the proper upkeep and repair of ancient buildings in private ownership excepting such as were used for religious purposes; to prevent the excavation of sites of historic interest by ignorant and unauthorized persons; and to secure control over the traffic in antiquities'. The bill was modelled on similar legislation in England, Greece and Italy but had to be modified in some of its essential features to suit not only conditions peculiar to India but with a view to eliminating any opposition from the public. Though the Act was not fully satisfactory in all respects, it marked a great step forward and served at the time more or less the purpose for which it was introduced.

In spite of the shortage of staff and funds, the period between 1902-05 witnessed great departmental activity. One is astonished at the volume of work done in Indian archaeology during this short.

period in conservation, exploration and research. A fresh scheme for the re-organization of the Department was submitted to Government in 1905 and sanctioned in 1906. This placed the Department on a permanent footing and made available to the Department the services of three more officers. One of them was Dr. Sten Konow, who was appointed the Government Epigraphist for India, attached to the Director General in order to help him in matters of North Indian epigraphy.

In 1906, Lord Curzon, the greatest friend that Indian archaeology ever had, left India. Within six years of his departure an attempt was made to decentralize all the scientific Departments including the Archaeological Department. Due to the storm of protest which arose both in India and England, this proved abortive and the Department was granted a fresh lease of life.

With the outbreak of the first World War in 1914 the activities of the Department had to be severely curtailed. The position became worse after the conclusion of peace due to the unstable conditions brought about by the War. The Reforms of 1919 made archaeology a Central subject. The Department was further re-organized in 1921, and six new posts added to the cadre. Before the scheme could be fully carried out, came the appointment of a Retrenchment Committee under the chairmanship of Lord Inchcape. It proposed the virtual abolition of the Department by suggesting a 90 per cent cut of the funds. The timely intervention of the Secretary of State and the then Viceroy, Lord Reading, however, saved the Department from annihilation, and it escaped only with a cut of 22½ per cent.

Since its very inception, the Survey had concerned itself primarily with the monuments dating from the Maurya period. Though it was always assumed that the Aryans brought an advanced form of civilization into India, very little archaeological evidence of a period earlier than the time of the Buddha was forthcoming. No systematic attempt had been made to explore the valleys of the great rivers which the Aryans occupied in their early days in India. It was never dreamt that there could have been an earlier civilization which was in every respect superior to the civilization of the Aryan immigrants. All such ideas were however completely transformed by the discovery of the Indus Valley civilization. The excavations at Mohenjo-daro and Harappā revolutionized the conception of Indian civilization and culture. In describing these discoveries Sir John Marshall wrote in 1924 :—

‘Hitherto India has almost universally been regarded as one of the younger countries of the world. Apart

from palaeolithic and neolithic implements and such rude primitive remains as the Cyclopean walls of Rājagriha, no monuments of note were known to exist of an earlier date than the third century B. C., when Greece had already passed her zenith and when the mighty empires of Mesopotamia and Egypt had been all but forgotten. Now, at a single bound, we have taken back our knowledge of Indian civilization some 3,000 years earlier and have established the fact that in the third millennium before Christ, and even before that, the peoples of the Punjab and Sind were living in well-built cities and in possession of a relatively mature culture with a high standard of art and craftsmanship and a developed system of pictographic writing.'

These epoch-making discoveries enabled Sir John to persuade the Government to make a more liberal grant for excavation. The work was continued at Mohenjo-daro until 1931 and at Harappā up to 1935. Sir John himself was placed on Special Duty for a term of seven and half years from September 1928. In March 1931 he retired from service but was re-employed as an Officer on Special Duty to enable him to write a series of monographs on the important excavated sites. He continued in that post till the end of 1934.

It was in Sir John's régime that regular excavations of important archaeological sites were undertaken for the first time. It was also during his time that the officers of the Survey undertook explorations in the borders of India and beyond them, into territories which were marked with the impact of Indian culture and civilization. The earliest of such undertakings was by Sir Aurel Stein in Chinese Turkestan. As early as 1889 Lt. (later Major General) Bower acquired at Kuchā leaves of a birch-bark manuscript in Sanskrit accidentally discovered with others at a ruined site. The importance of this early manuscript was recognized by Dr. H. F. Rudolf Hoernle. The interest aroused by this discovery led to the acquisition of various other manuscripts in different languages, some of which were hitherto unknown.

The eyes of the orientalist of the world were at the time focussed on this part of Asia. The Government of India, recognizing the importance of Chinese Turkestan as a promising field for archaeological exploration, arranged for Sir Aurel to undertake three successive explorations into this region during the period between 1900-1916 and extending over a total of seven years. This however is not the place to recount Sir Aurel's achievements which have been

published in the voluminous works by the explorer himself and his associates.

In 1909-10 Marshall secured for eighteen months the services of Dr. A. H. Francke, a Moravian missionary and an expert Tibetan scholar with long experience of Western Tibet. He undertook an exploratory tour in that region which resulted in the publication of the two volumes in the New Imperial Series, *Antiquities of Indian Tibet*, Parts I and II (1914 and 1926). In 1925-26 Mr. Hargreaves, as Superintendent of Archaeology, Frontier Circle, undertook an exploration tour in Baluchistan where at an ancient cemetery at Nāl he discovered polychrome pottery of a type which forms an important link in the chain of the Indus Valley civilization. This work was continued by Sir Aurel during the years 1927-29 leading to the discovery of a number of sites with marked affinity to the sites in the Indus valley. Mr. N. G. Majumdar, a young though promising officer of the Department, also discovered a number of sites within the boundaries of Sind, of which Amri and Chanhudaro deserve particular mention.

There has been criticism in certain quarters of the work done by Sir John Marshall and the officers trained by him. It is quite true that he had assumed office at an early age and almost straight from the University. What is lost sight of is the condition even in the West of archaeological techniques towards the end of the nineteenth century. The techniques, based on the experience of several decades, which are in use today were almost unknown at the time. Sir John had to start almost from scratch and spend a great part of his time either in the re-organization of the Department which was faced with various difficulties from time to time or in administration. It may be argued that no arrangements were made for training the officers of the Department by sending them abroad and thus giving them an opportunity to learn up-to-date methods and bringing them into contact with scholars who had gained international reputation in scientific excavation. I feel that this question did not receive as much attention as it deserved. It may be that financial difficulties always came in the way. But whatever be the case, it cannot be gainsaid that Sir John did more for the Archaeological Survey than any other Director General. He may have made mistakes, but he fully justified the choice of Lord Curzon by putting Indian archaeology on a stable footing.

In 1931 came the world depression. The axe of the Retrenchment Committee again fell on the Department. With a cut of 33 per cent in the Departmental budget, practically all excavations and explorations were at a standstill. The work of conservation was

reduced to the minimum, and the Survey had to struggle for day to day existence. The reforms of 1935 did not make the position any better, but archaeology remained a Central subject.

The effect of the first World War and subsequent financial stringency prevailing in the country left much to be desired for the advancement of archaeology in India. In 1938 the Government of India invited Sir Leonard Woolley to advise Government in what way archaeological work in India could be improved and also on the best method of training and selecting of officers for exploration. In February 1939 Sir Leonard submitted his report in which he urged the necessity of training officers in the up-to-date methods of excavation and exploration. He also stressed the insufficiency of staff and funds sanctioned for the Department. Due to the second World War, no action could be taken to implement his recommendations. In 1944, however, with the retirement of Mr. K. N. Dikshit, the Government of India decided to bring out for a term of four years, Dr. R. E. Mortimer Wheeler, who had a wide experience in matters relating to excavation and museums, as the Director General, instead of appointing a temporary adviser as recommended by Sir Leonard.

On assuming office, Dr. Wheeler turned his first attention to the re-organization of the Department. Hitherto conservation work was carried on, except in two Circles, through the agency of the Public Works Department, either Central or Provincial. This dual control was found highly unsatisfactory and resulted in public criticism of the conservation work done by the Public Works Department in many places. He therefore recommended that the Department should take full responsibility for all such works and obtained Government sanction for the appointment of an Assistant Superintendent and a quota of Conservation Assistants and Overseers for each Circle. The post of an Executive Engineer was also created at the Centre whose duty was to advise the Circle Superintendents in conservation and also to train the newly appointed staff through an intensive training course. The number of Circles was raised from six to seven excluding the Delhi Circle which was regarded only as a half Circle. Since the abolition of the post of the Deputy Director General of Archaeology for Exploration in 1930, no large scale excavation was undertaken by the Department. In 1944 the Excavations Branch was reconstituted with the minimum technical staff, *viz.*, an Excavation Assistant, Pottery Assistant, Surveyor, Draftsman and Photographer and was placed under an officer of the rank of Superintendent.

Hitherto, with the exception of the Indus valley civilization, the prehistoric and protohistoric remains of India had received very inadequate attention. Only a few prehistoric sites had been examined, but there was no arrangement for a regular survey of these monuments to assess their potential value, in regard to early Indian culture on the one hand and their relationship with similar monuments in other parts of Asia. Being left to the mercy of the hunters for building material and antiquities, many such monuments had already been destroyed. To ensure preservation and study of these monuments an Assistant Superintendent for Prehistory was appointed in 1945. During the same year was also established a Central Advisory Board of Archaeology, consisting of representatives of the Universities, learned societies, Indian States, the Indian legislature and scholars interested in archaeology. In 1946 Government of India appointed a Committee under the chairmanship of Sir Maurice Gwyer to work out the details for the establishment of a National Museum of Art, Archaeology and Anthropology. This was accepted in principle as a part of the post-war development plans, but due to financial stringency it has not been possible to give full effect to this scheme. The nucleus of a Museum has however been started at the Government House at New Delhi from the 15th August, 1949.

Great political changes were looming large in the Indian horizon. With the attainment of Independence on the 15th August, 1947, and the partition of the country, further re-organization of the Department was called for. East Bengal was lost to the Eastern Circle and the West Punjab, Sind and N. W. F. P. to the Frontier Circle. Orissa was taken out of the South-Eastern Circle, which was still far too extensive, and added on to the Eastern Circle. East Punjab was added on to the Delhi Circle converting it into a full Circle. A fresh problem has however arisen in regard to the Indian States. As stated above, the Archaeological Department formerly acted only as advisers to those States which had no Archaeological Departments of their own. In the new set-up all the smaller States and some of the bigger ones merged into one or other of the Provinces. Many of these States have monuments of national importance and their maintenance has automatically devolved on the Archaeological Department. This has given rise to some problems which are discussed below.

Future of Indian Archaeology

A question has often been asked: what is the future of Indian archaeology in an independent India? With the partition of the country most of the important sites of the Indus Valley culture and

the whole of the Gandhāra region are now included in Pakistan. The route along which the Aryans and in later centuries others came to India and the places of early Aryan settlements are now outside the borders of India. But the loss in area has been amply made up by the integration of the Indian States. Already due to merger, an additional area of approximately 160,000 sq. miles has come under the jurisdiction of the Central Archaeological Department. When the new constitution is passed and the Fiscal Commission's recommendations are accepted by Government, another, 350,000 sq. miles, excluding Jammu and Kashmir, will have been added, making a total of over 500,000 sq. miles.

This is a huge area and the archaeological potentialities of many of the States are still almost unknown. The first task of the Department will therefore be to undertake a proper survey of the areas where little archaeological work was done before. This by itself is a tremendous task, but it must be faced. With the help and co-operation of the Provincial and Union Governments we hope to bring it to a successful conclusion within a reasonable time. This cannot however be done without additional staff and expenditure. The re-organization proposals sanctioned between 1945 and 1947 provided only the minimum personnel required to carry out the duties of the Department as it was constituted then. It did not envisage the problems that were to arise after independence. A situation has now arisen which needs careful thinking and planning. As soon as the integration of States is completed, the Circles have to be re-organized to fit into the new set up.

The greater need of the Department at the moment is the required trained personnel. A very unambitious training scheme was submitted to Government some months ago, but this has been only partially sanctioned due to present financial difficulty. It is for the same reason that the scheme of strengthening the exploration staff has been held up. Till these schemes are sanctioned, very little progress in archaeological studies can be made.

The vast archaeological resources of the country are as yet about untapped. We have now enough material for the reconstruction of Indian history from the third century B. C. or even a little earlier. In this period itself there are gaps to be filled and various problems to be solved, particularly in the period between the second century B. C. and the fourth century A. D. The story of Indian civilization, however, does not begin with the third, fourth or even the fifth century B. C. with the appearance of Buddhism in India. We know very little of the rulers mentioned in the great epics of

India. We know even less of the early Aryans who first settled in the land of the five rivers and gradually migrated towards the Gangetic valley. We have enough evidence now of still earlier civilizations which flourished in the country at least one thousand years before the advent of the Aryans. From the evidence we have got so far, thus civilization was more advanced than that brought by the Aryans to this country. Next to nothing is however known of the history of India of the intervening period of 2000 years or more. Archaeology alone can fill up this gap. Planned exploration of the valleys of the great ancient rivers like Sarasvati, Gangā and Narmadā and excavations of selected sites are however essential for the purpose. This is about North India.

In the South the problem is different and even more complicated. The earliest contact with the historic period begins from the third century B. C. Very little is known of the history of South India even of that period. Archaeology is different from history in that it does not begin with fifth century B. C. or even third millennium B. C. It has to concern itself with the story of man who is known to have appeared almost in his present form over 500,000 years ago, a period in which no historian would feel interested. It has to reconstruct not only the history of the so-called historic period but of early man from whatever indication we have of his environment, of the life he lived, the tools he used and the standard of civilization he achieved on the whole.

Luckily, there is ample material in India for such a study. In the South we have thousands of megalithic sites, of which we know very little yet. We are not even sure of their date which has been vaguely guessed as ranging from 2000 B. C. to A. D. 1200. We have to find out who their authors were, where they came from, how long they survived and where they disappeared. We have yet to collect definite data on the extensive palaeolithic industries existing throughout the length and breadth of India and come to a definite conclusion on their dates on the stratigraphic evidences supplied by the ancient river-cuttings on the lines already initiated by De Terra and his associates. It is hoped that in course of time, by methodical eastward and westward extensions of our explorations we should be able to supply the missing link between the Indus Valley civilization and the civilization of the so-called historical times. It is also hoped that one day we may even be able to prove the theory already put forward by some eminent scientists that India was one of the cradles of human civilization. But all this needs careful planning, a host of specially trained officers and above all liberal financial help. Unless and until these are

forthcoming there will be little progress in Indian archaeology. The past history of nearly a century has shown that half-hearted attention to this most important branch working for the revealing of India's past culture would not lead us very far.

In conclusion I would like to point out a very important aspect in the study of Indian archaeology. The sub-continent of India is divided today. But the fact remains that its civilization has been one throughout the ages. The study of the history and archaeology in India and Pakistan is interdependent. We may be able to solve certain problems independently, but there are many vital ones the solution of which will depend on the mutual co-operation and close collaboration between the two Dominions. Archaeology to-day is looked upon as a science, though it cannot yet be called a positive science. Any science to achieve its true objective cannot remain confined within the narrow limits of any particular country.

N. P. CHAKRAVARTI

CHAPTER II

EXPLORATION AND EXCAVATIONS

1. PREHISTORIC AND PROTOHISTORIC PERIOD

A. THE STONE AGE

MAN is nearly half a million years old. In the beginning, he was as parasitic on nature as an animal; though, of course, there was a fundamental difference between the two, namely, man's capacity to think and develop. To assist himself in the procurement of food which involved digging out roots and hunting animals man prepared tools and implements of stone. The struggle to master his surroundings was so hard that it was not until about 7000 B. C. that he came to the stage of 'producing' food, and not until 4000 B. C. or so that he discovered the use of metal. The period prior to the discovery of metal, known as the Stone Age, is further sub-divided into the Palaeolithic or Old Stone Age, Mesolithic or Middle Stone Age and Neolithic or New Stone Age, on the basis of the implements used in each age. The Indian story, which no doubt suffers from several lacunae, may be summarized as follows.

(i) *The Palaeolithic Age*

It was in the year 1863 that Robert Bruce Foote of the Geological Survey of India identified for the first time a true palaeolith in the débris of a pit, in the laterite gravel at Pallāvaram, near Madras.¹ Foote, who may rightly be regarded as the pioneer in the field of Indian prehistory, was followed in this great task by a few other antiquaries like King, Oldham, Hackett, Wynne, Blanford, etc., and by the end of the last century several palaeolithic sites were located in the Provinces of Madras, Bombay, Orissa, C. P., U. P. and Bihar and in the States of Hyderabad, Mysore, Dhenkānal, Talcher (Orissa) and Rewā (Vindhya Pradesh).²

¹ R. Bruce Foote, *The Foote Collection of Indian Prehistoric and Protohistoric Antiquities: Notes on their Ages and Distribution* (Madras, 1916) p. 4.

² R. Bruce Foote, *ibid.*; also his *Catalogue Raisonné* (Madras, 1914). J. Coggin Brown, *Catalogue of Prehistoric Antiquities in the Indian Museum* (Simla, 1917). See also S. N. Chakravarti, 'An outline of Stone Age in India' in *Journ. Roy. Asiatic Soc. Bengal* (Letters), X (1944), pp. 81-98; V. D. Krishnaswami, 'Stone Age India' in *Ancient India*, no. 3 (Jan. 1947), pp. 11-57; A. Ghosh, 'Prehistoric Exploration in India' in *Indian Historical Quarterly*, XXIV (March 1948), no. 1, pp. 1-18.

Of these early-discovered sites, some deserve special mention. In the valley of the Kortalayār river in Chingleput District of Madras is the site of Attirampakkam where palaeolithic handaxes, cleavers, ovates and flake tools can be picked up in thousands and which, together with Vadamadurai in the same region, forms the key-site for the South Indian palaeoliths. No less rich is the site at Khyād on the bank of the Malaprabhā river in Dhārwar District of Bombay Province. Mungi near Paithan in Hyderabad State¹ and Bhutra in Narsinghpur District of the Central Provinces² have an additional interest about them. At both the places palaeoliths were discovered in river-gravels which also contained the fossil-remains of mammals assignable to the Middle Pleistocene. Thus the author of these artifacts, the prehistoric man of India, was recognized to be nearly as old as the Mid-Pleistocene, *i.e.*, nearly 500,000 years old. It should, however, be noted here at once that no skeletal remains of the early palaeolithic man have so far been found in India, except the doubtful fragment of a human tibia from the Attirampakkam terraces.³

A general survey of the location of these palaeolithic sites shows that the early man preferred to live on the banks of rivers, getting his food by hunting animals and birds on the terraces. He, however, did not mind living in caves provided adequate water-supply in the form of springs nearby was ensured. Of the palaeolithic caves in India—and there are not many—only one, *viz.*, the Billa Sugram group of caves in Kurnool District, has yielded fossil mammalia and bone implements, probably of the Magdalenian type.⁴

The explorers of the nineteenth and early twentieth centuries did, no doubt, bring to light a lot of palaeolithic material, but they did not study in detail the geological background of the finds. They classified the implements on the basis of their shape and utility, such as *bouchers*, discoids, choppers, knives, axes, scrapers, etc., but did not make out their chronological evolution based on the evidence of geological stratification. Just the 'look' of an artifact was considered enough to class it as Chellean, Acheulean, Mousterian and the like.

The first notable attempt in the direction of associating these implements with geological strata was made by Cammiade and

¹ *Records of the Geological Survey of India*, I (1868), pp. 65ff.

² *Ibid.*, VI (1873), p. 49.

³ Foote, *op. cit.* (Madras, 1916), p. 8.

Foote, *op. cit.* (1916), p. 118 ; see also L. A. Cammiade in *Man in India*, VII (1927), pp. 1ff.

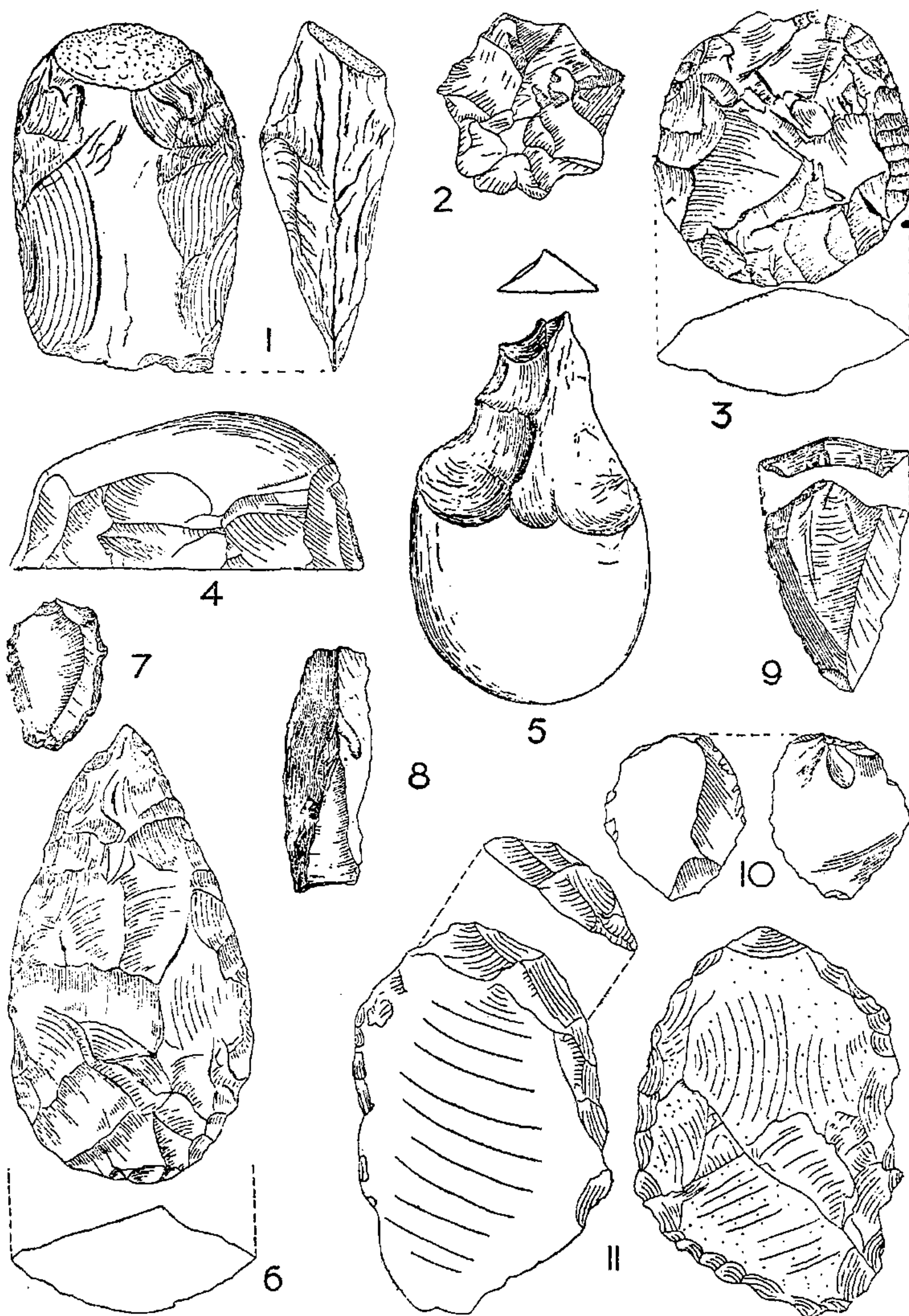
Burkitt, who, in 1930, published an account of the former's discoveries in the Krishnā valley, District Kurnool, Madras.¹ The river-terraces here showed evidence of climatic oscillation between wet (pluvial) and dry (interpluvial) phases. The earliest implements here, rough handaxes of quartzite, were associated with a mid-Pleistocene dry phase. This phase was both preceded and followed by a pluvial phase. Associated with the next dry or inter-pluvial phase were flatter and neater handaxes and also flake implements. Then again was another period of pluviation. The two succeeding dry phases in the cycle produced respectively a blade and burin industry and microliths.

As already stated (above, p. 17), the sites of Vadamadurai and Attirampakkam in the Kortalayār valley yielded a lot of palaeolithic material.² The stratigraphy of the area, from bottom upwards, may be summarized as follows: gneissic bed-rock, boulder conglomerate, detrital laterite, and three terraces T_1 - T_3 . The implements from the Vadamadurai tank have been divided into three groups, belonging respectively to boulder conglomerate, laterite and the terraces. The first group is further sub-divided into two series, Early and Late, on the basis of patination and typology. To the former series belonged rolled and heavily cream-patinated (not laterized) Abbévilian handaxes, crude in outline and bearing deep and irregular flake-scars. Under the Late series came less patinated and typologically more advanced early Acheulean handaxes, showing step-flaking. The flakes had less cortex and more primary flaking on the upper surface than in the Early series. The specimens from the second group comprised laterized mid-Acheulean handaxes, flatter in shape, with more pronounced step-flaking, and flakes, a few of which showed signs of retouch. To the third group belonged non-laterized but slightly patinated upper Acheulean handaxes, evincing the use of wood-technique. There were some cleavers and discoidal cores too. Of the flakes, a few were retouched for use, probably as side-scrapers.

From Attirampakkam was obtained a very large number of late Acheulean handaxes and cleavers which may correspond in age to the last group at Vadamadurai. There were no doubt some rolled implements too which might be of an earlier date. Cleavers

¹ L. A. Cammiade and M. C. Burkitt, 'Fresh Light on the Stone Ages in South India', *Antiquity*, IV (1930), pp. 327ff; see also Burkitt, Cammiade and F. J. Richards, 'Climatic Changes in South-east India during Early Pleistocene Times', *Geological Magazine*, LXIX (1932), pp. 193ff.

² H. De Terra and T. T. Paterson, *Studies on the Ice Age in India and associated Human Cultures* (Washington, 1939), pp. 327ff.

Palaeoliths. Scale $\frac{1}{3}$.

(Nos. 1, 3, 6 and 11 from Attirampakkam ; rest from the Sohan valley.)

1. Cleaver showing Vaal technique (mid-late Acheulean). 2. Discoidal core with alternate flaking along the periphery ; late Sohan. 3. Disc obtained by Acheul technique. 4. Flat-based pebble tool ; Early Sohan. 5. Rounded pebble tool ; Early Sohan. 6. Pear-shaped handaxe neatly trimmed (mid-late Acheulean). 7-9. Late Sohan flakes. 10. Early Sohan flake (Clactonian-Proto-Levalloisean). 11. Large-sized flake-scraper with faceted striking platform showing secondary marginal trimming (Levalloisean).

with parallelogrammic cross-section, reminiscent of the Vall technique of South Africa, and S-twist handaxes deserve special mention. The cores were mostly discoidal in shape, with regular alternate flaking, while the flake-tools showed faceted platform with much primary flaking on the upper surface.

The evidence from the west coast of India offers a good climato-industrial sequence. At Khandivli near Bombay, Todd observed in 1932 a series of geological deposits, representing a pluvial and inter-pluvial cycle.¹ These were, from the bottom upwards: (i) a Lower Clay overlying a weathered basaltic surface and containing rough tools and flakes comparable with the Clacton industry; (ii) a reddish brown Lower Gravel with big boulders indicative of a strong pluvial origin, yielding Abbévillo-Clactonian, and higher up, late Acheulean types of cleavers and handaxes; (iii) a Middle Clay, having on its top small handaxes made on flakes, blades and scrapers etc.; (iv) an Upper Gravel bearing on its top a blade and burin industry; and (v) the Upper Clay which produced parrot-beak and polyhedral burins. In addition to the above, microliths were collected on the surface in the coastal region and these completed the sequence.

These discoveries produced a reasonably clear picture of the stratigraphical evolution of the implements and also showed that they were associated, in South India, with a climatic cycle of pluvial phases.

To this general picture, North-west India had a lot to contribute. From the valley of the Sohan river in the West Punjab stray stone implements had been reported as early as 1880, while in 1930 Todd produced a reasonably good collection of palaeoliths from Pindi Gheb in the same valley. In 1935, the Yale-Cambridge expedition consisting of H. De Terra (leader), Teilhard de Chardin and T. T. Paterson² set out on the task of correlating the various palaeolithic industries of the North-west with the cycle of quaternary glaciation, already noticed by Giotto Dainelli in the Himalayas.

In Kashmir, the Ice Age was found to be represented by a series of deposits called the *Karewas*, which impinge on the slope of the Himalayas. The *Karewas* overlay the terminal moraines of the first glaciation and were, within themselves, divisible into two

¹ K. R. U. Todd, 'Prehistoric Man around Bombay', *Proceedings of the Prehistoric Society of East Anglia*, VII (Ipswich, 1932), pp. 35ff; also 'Palaeolithic Industries of Bombay' *Journal of the Royal Anthropological Institute of Great Britain & Ireland*, LXIX (1939), pp. 257ff.

² De Terra and Paterson, *op. cit.*

groups, the Lower and the Upper, separated by the moraines of the second glaciation. The Lower Karewas had yielded fossil-remains of primitive elephant, *Elephas hysudricus*, which was also obtained from the older beds of the Upper Siwāliks in the Potwar region (District Rawalpindi, West Punjab). The occurrence of this elephant points to a Lower Pleistocene age in both the cases. The intervening moraines of Kashmir are comparable with the Boulder Conglomerates of Potwar which yielded stone implements in the form of large flakes obtained from crude split pebbles and worked on one side only. There was no secondary flaking. This earliest lithic industry of man in India has been designated as 'Pre-Sohan', since it preceded the Sohan industry with which it had no genetic relationship. It is roughly comparable with the Cromerian industry of England.

The Upper Karewa beds represented the second interglacial stage during which was formed the first terrace (T_1) both in the Kashmir basin and lower down in the Sohan valley. The implements from Terrace 1 of the latter (styled as the Early Sohan industry) were divisible into two classes, namely, pebble tools and flake tools. The former had either a flat base, having been produced out of naturally or artificially broken pebbles, or were rounded, the flakes being chipped off from the original pebble-surface. The flake tools ranged from the simpler ones with a high-angled plain platform resembling the Clactonian forms to more complex ones with a low-angled faceted platform pointing to a Proto-Levalloisian horizon. Associated with this Early Sohan industry were also handaxes similar to those from the South (called the Madras industry). Outside India these may be compared with the Abbévillo-Acheulean bifaces of the Lower Palaeolithic.

Between the first Terrace, described above, and the present bed of the Sohan, there were four more Terraces, T_2 - T_5 , assignable respectively to the third glacial and inter-glacial and fourth and fifth glaciations. With Terrace 2 went the 'Late Sohan' industry, showing a better execution of both the pebble and flake tools than the Early series. The flake tools became more Levalloisian than Clactonian. Ascribable to Terrace 4 were the 'Evolved Sohan' implements which could be considered as late (Upper) Palaeolithic. With the post-glacial Terrace 5 were associated the proto-neolithic, microlithic and neolithic industries, which completed the sequence of Stone Age cultures in North-west India.

As is to be expected, the stretch of land across central India forms a meeting ground between the industries of the North and the Peninsula. So far, investigations have been made in three important

regions—the Sābarmatī valley in Gujarat, the Narbadā valley in C. P. and the Rihand basin in Mirzāpur District of the United Provinces. The work in the Sābarmatī valley was carried out by an expedition sponsored by the Department of Archaeology in 1941-42, and consisting of H. D. Sankalia, V. D. Krishnaswami and B. K. Chatterji.¹ In the lower levels, pebble tools of the Sohan type were discovered in association with the Madras hand-axes. Higher up, the existence of a microlithic industry was also revealed.

The Narbadā valley, between Hoshangābād and Narsinghpur, was explored by De Terra after he had finished his work in the Potwar region.² Here no clear terraces were noticed, but above a laterite bed of the Lower Pleistocene three distinct groups of deposits—the lower, the Upper and the Cotton-soil—were recognized. Each group consisted of a basal gravel beneath and clay or silt above. From the basal gravel of the Lower Group were collected large-sized flakes with prominent bulbs, similar to those of the pre-Sohan industry, besides handaxes and cleavers of Abbévillo-Acheulean types. The overlying clay yielded fresh Upper Acheulean hand-axes and cleavers and also flakes of the Early Sohan type. The basal gravel and the clay of the Lower Group may respectively be regarded as synchronous with Terraces 1 and 2 of the Sohan valley (above, p. 21). The Upper Group yielded rolled Acheulean bifaces but fresh flakes, cores and pebble tools of the Late Sohan type. The two sub-divisions of this Group may be equated respectively to Terraces 3 and 4 of the Potwar region. The third or the Cotton-soil Group would correspond to Terrace 5 of the Sohan valley. From it were recovered small blades and scrapers made of flint, jasper, chalcedony etc., representing a microlithic industry.

In the Rihand basin only preliminary investigations have so far been made.³ The occurrence of both the pebble tools of the Sohan type and the Madras handaxes in this area is indeed significant. With further research it may be possible to establish an equation between the terraces here and those in the Sohan valley and to work out a correlation between the glacial ages of the North and the pluvial periods of the South.

In 1940 the Anthropology Department of the Calcutta University carried out excavations in the implementiferous laterite gravels

¹ H. D. Sankalia, *Investigations into Prehistoric Archaeology of Gujarat* (Baroda, 1946).

² De Terra and Paterson, *op. cit.*, pp. 313ff.

³ Recently (April, 1949) the writer had an opportunity visiting the sites in this area in the company of Professor F. E. Zeuner and Mr. V. D. Krishnaswami.

of Kuliānā, Mayūrbhanj State (now merged with Orissa).¹ The artifacts represented an advanced Acheulean and also Chopper-flake Sohan industry.

Taking stock of things, one finds that inspite of some substantial research-work already carried out on the subject, a running story of the Palaeolithic Age in India cannot be reconstructed. The early Palaeolithic Man, the author of the artifacts, is still in the hiding, while evidence for the Upper Palaeolithic is mostly wanting. The correlation between the pluvial periods of the South and the glacial periods of the North, posulated by De Terra and others, still remains to be confirmed by absolute evidence.

Besides, there is another line of research, working on which the Indian evidence can be fitted into the international scheme, namely working on the problem of raised sea-beaches. The Coromondal coast is well-suited for the purpose. If we could identify the various marine-platforms formed by the oscillation of the sea under glacial and inter-glacial conditions and the lithic industries associated with each we can certainly arrive at a correlation between the Indian sequence and that of Europe and Africa, where the picture is much clearer.

(ii) *The Mesolithic Complex*

The Mesolithic Age of India is not so well-defined as the Palaeolithic. Two sets of industries, one, the microlithic and another, known as the 'proto-neolithic,' may be assigned to this age; but while doing so one is not always on sure grounds since at several places in India microliths do not seem to have been truly mesolithic in age, i.e., intermediary between the Palaeolithic and the Neolithic.

The microliths have a fairly wide distribution in India, extending, as they do, from Jamālgarhi (District Peshawar) in the N. W. Frontier Province to Sawyerpuram (District Tinnevely) in the south, and from Karachi in Sind on the west to Serai Kalā in Bihar on the east.² The material consists of jasper, agate, carnelian, flint, chert, chalcedony and quartz etc., while the types include blades, battered as well as serrated, crescents, trapezes, triangles, points, beaked engravers and side-and-end-scrapers. These tiny tools, as we know from their counterparts in the west, must have been attached singly

¹ N. Bose and D. Sen, *Excavations in Mayurbhanj* (Calcutta, 1948):

² D. H. Gordon, 'The Mesolithic Industries of India', *Man*, XXXVIII (Feb. 1938), no. 19, pp. 21-24; also Foote, *op. cit.* (1916), p. 50 for Sawyerpuram.

or collectively to a handle to make them really effective tools or weapons.

It is not possible clearly to define the range of time during which the microliths were used in India; some of the evidence is, however, discussed below.

Footo observed that the Tinnevely microliths lay embedded in the fossil sand-dunes, locally known as the *teris* and were stained red owing to their long contact with the ferruginous soil. Aiyappan, who carried out further work in that area in 1942, considers it 'more or less likely that the implements were made here only at the time when the basal level of the Teri was being laid down and not afterwards.'¹ He further thinks this area 'seems to have been deserted by mesolithic men before the neolithic epoch, for no neolithic tool has so far been found at the site or its neighbourhood, or it is possible, owing to the great distance of Sawyerpuram from the centres of neolithic culture in the Kistna valley, that no neolithic technique percolated to this peripheral tract.'²

During 1941-45 Sankalia and his colleagues carried out explorations in the Sābarmatī valley in Gujarat and discovered several microlithic sites including those at Hirpurā (a factory-site), Lānghnāj, Akhaj and Valāsna.³ The implements were found in association with large semi-fossilized or completely calcified mass of splintered bones. Complete skeletons of the 'Microlithic Man' were also obtained. Although nothing very definite can be said about the date of these microliths, it may be noted that 'except for solitary pieces of a distinctive pottery and two neolithic-like tools from the third layer (an upper level), no pottery has been found from the true microlithic layer. So the culture probably belongs to a Stone Age period.'⁴ On the basis of the form, patination and state of preservation of the implements, the microliths from Khandivli and other coastal sites round Bombay appear to Todd to be fairly old—much older than those found inland, in the Central Provinces and adjoining Vindhya hills⁵. The Kurnool examples also provide roughly similar evidence (above, p. 18). It must, however, be noted that in the lower Godāvarī basin microliths have been found in association with coarse hand-made pottery and, at one place, with a small polished shouldered celt of the

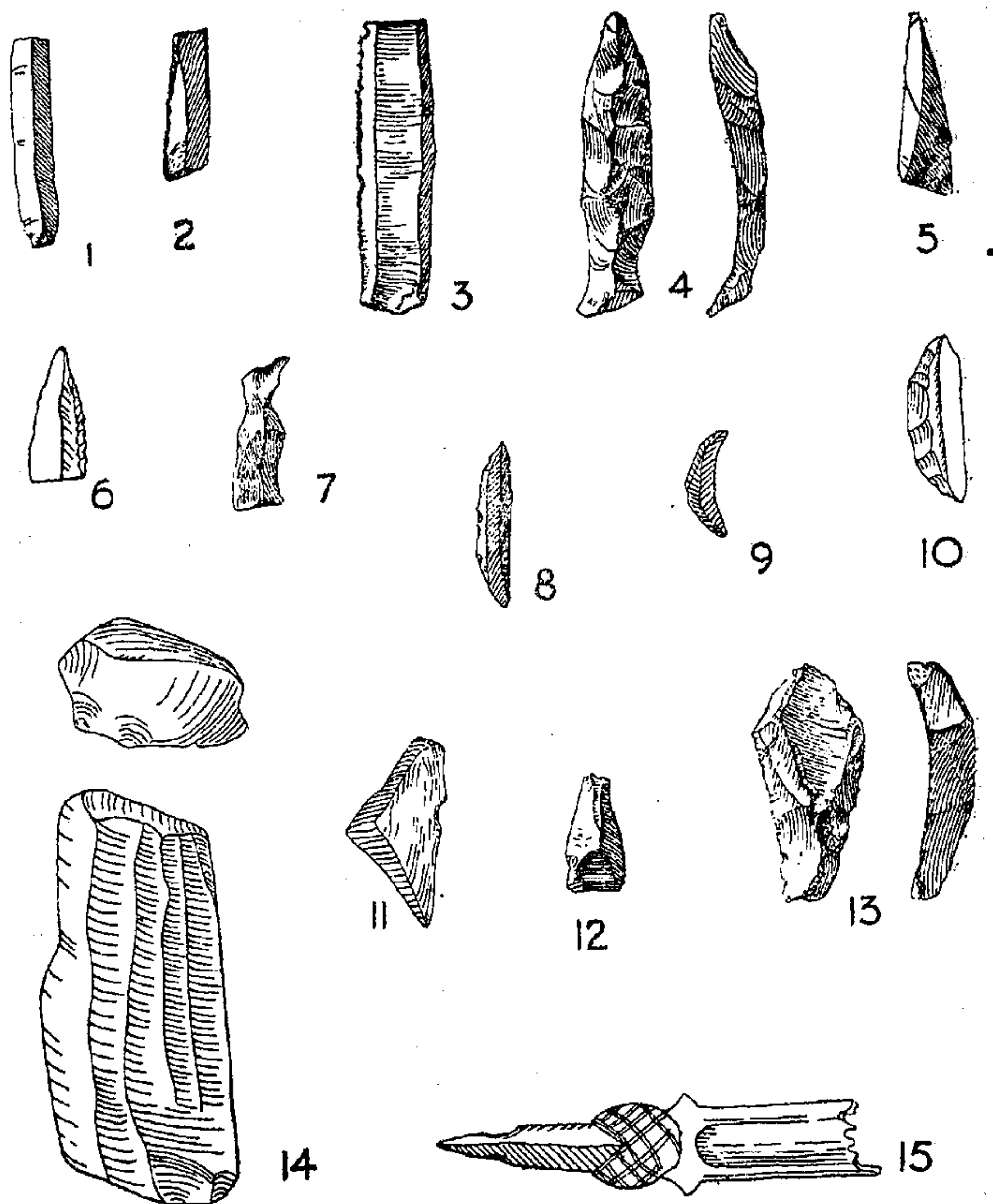
¹ A. Aiyappan in *Spolia Zeylanica*, 24, pt. 2 (Colombo, Dec. 1945), p. 146.

² *Ibid.*, p. 153.

³ Sankalia, *op. cit.*

⁴ H. D. Sankalia and I. Karve in *American Anthropologist*, 51, no. 1 (1949), p. 31.

⁵ Todd, *op. cit.* (1939), p. 270.

Microliths. Scale $\frac{1}{2}$.

(Locality Brahmagiri where not mentioned.)

1. Plain blade without retouch. 2. Blade with battered back.
3. Blade with one edge slightly serrated. 4. Blade nicked for hafting.
5. Pointed blade. 6. Parallel-sided blade blunted on one side by retouch; from Sanganakallu. 7. Beaked graver (*burin*). 8. Crescentic blade.
9. Crescentic blade with worked back; from Lānghnāj. 10. Lunate blunted along the arc; from Sanganakallu. 11. Triangular blade with worked back; from Hirpurā. 12. Chisel-ended blade. 13. Side scraper.
14. Flat-based core with faceted platform; from Mittesompuram.
15. Method of hafting a microlith.

Burmese type.¹ Instances are not lacking where microliths have been discovered along with proto-historic or even early historical burial-urns. Further evidence of that late survival of microliths is provided by the examples from Pachmarhi, Hoshangābād, Singhanpur and Kabrā Pahār etc. (central India), which, according to Gordon, are not likely to antedate 500 B. C. and may well extend into the early centuries of the Christian era².

- In the Cotton-soil of the Narbadā valley De Terra found a flake industry consisting of blades and scrapers (above, p. 22), which, he considers, may have been proto-neolithic or even later, comparable to the one obtained from other places in central India³.

In the North-west De Terra collected some microliths from the loessic deposits near Uchāli (Shāhpur District, N. W. Frontier Province). The implements lay in association with hand-made pottery believed to be neolithic⁴. The flake industry from Pāmpur and Sombur in the Kashmir valley seems to have been a survival of the palaeolithic Sohan tradition⁵. The association of pottery with the implements at Sombur again points a proto-neolithic horizon.

Quite different from the microlithic industries mentioned above is the Sukkur and Rohri (Sind) industry⁶, characterized by long blades, flakes and conical cores recalling Harappā and Mohenjodaro specimens. It is not unlikely that further research may reveal that the Harappā civilization, of which the origin and early stages of evolution are yet in the dark, had its seeds in a late Stone Age culture, like the one at Sukkur and Rohri.

Against the background of these extremes may be viewed the recent (1947) evidence from the excavations at Brahmagiri, Mysore State.⁷ Here the microlithic industry went hand in hand with the neolithic and both were overtaken by an intrusive iron-using Megalithic culture, whose appearance at the site may be dated to c. 300 B. C. (below, p. 40). The earliest limit for the Brahmagiri Microlithic-Neolithic culture (Polished Stone Axe Culture of the original Report) may well go back to early first millennium B. C.

¹ Cammiade and Burkitt, *op. cit.* (1939), p. 338, pl. VI B.

² Gordon, *op. cit.*, p. 23.

³ De Terra and Paterson, *op. cit.*, p. 320.

⁴ *Ibid.*, pp. 277-78.

⁵ *Ibid.*, pp. 103 and 232-33.

⁶ *Ibid.*, pp. 333-36.

⁷ R. E. M. Wheeler in *Ancient India*, no. 4 (July 1947—Jan. 1948), pp. 180ff.

Similar, or very nearly similar, evidence is also provided by the Māsiki excavations.¹

It would thus appear that while some of the Indian microliths may have been truly mesolithic in point of sequence, they certainly continued to be used through the neolithic period down to the early historical times. Such a state of affairs is not surprising, since even today some of the aboriginals of Australia are known to be using micro-implements of bottle-glass. Tradition dies hard!

(iii) *The Neolithic Age*

How the Mesolithic or the Proto-neolithic stage in India passed into the Neolithic is again a mystery, in the absence of the necessary field-data. The neolithic implements, unlike the palaeoliths or microliths, were made of Trap-rock and were ground and polished. They included celts or axes, adzes, slick-stones, fabricators, polishers, hammer-stones, etc. The earliest known neoliths come from Burzahom, the well-known menhir-site of Kashmir. In the excavations carried out by De Terra at this site three cultural strata, called A, B and C from the top downwards, were revealed, forming a total accumulation of 12 feet above the virgin soil². The uppermost stratum, A, was an early historical one, assignable to c. fourth century A. D. The next below it, B, contained grey incised pottery, said to be reminiscent of the Jhāngar culture (post-Harappā) of Sind³ (below, p. 35). Below them was the unweathered post-glacial loess, 9 feet in thickness, containing polished celts of trap, hoes and pestles, besides bone awls. Towards the bottom was also recorded a neolithic hearth together with cooking-vessels. Although no definite date has been assigned to the loessic deposit, it is clear that even the uppermost neolithic objects antedated the (overlying) Jhāngar culture. The beginning, therefore, of this neolithic culture must have been still earlier.

Polished stone axes, the type-fossil of the Neolithic Age, have been obtained from several sites in India, some of which may be mentioned here: Hamīrpur, Allahabad and Bāndā Districts in the United Provinces; Chhatarpur and Pannā States in Central India; Garhi Morilā and Buhuterai in Saugor District, Central Provinces; Hazārībāgh, Patna, Rānchi, Santal Parganas and

¹ *An. Rep. Arch. Deptt. H. E. H. Nizam's Dominions*, 1935-36 (1938), p. 23 and pl. III; 1936-37 (1939), pp. 14-16; D. H. Gordon in *Journal of the Royal Asiatic Society of Bengal*, IX (1943), pp. 88ff. The Report on 1943-excavations has not yet been published.

² De Terra, *op. cit.*, pp. 233-34.

³ The pottery is unfortunately not available in India for a first-hand study.

Singhbhūm districts in Bihar; Darjeeling and Nadiā districts in West Bengal; Garo Hills, Nāgā Hills and Cāchār Districts in Assam; Raichūr and Warangal Districts, Hyderabad State; Bangalore and Chitaldrug Districts, Mysore State; and Anantpur, Bellary, Chingleput, Guntur, North Arcot, Salem and Tanjore Districts in Madras.¹ In the North-west, specimens have been obtained from the bank of the Indus opposite Shādipur, 21 miles south-west of Attock.² It may, however, be noted that at most of these places the stratigraphical position of the implements is either not known or, if known, only vaguely.

In South India, Bellary District and the adjoining territories of Mysore and Hyderabad seem to have been the focus of the neolithic culture. The 1947-excavations at Brahmagiri (above, p. 27) brought to light the existence of a Polished Stone Axe culture between the beginning of the first millennium B.C. and c. 300 B.C.³ The authors of this culture, besides using neolithic celts and microliths as their principle tools, had also the knowledge of working copper and bronze, though in a very restricted degree, as is testified by the occurrence of a copper chisel and one each of bronze and copper rods in the neolithic levels. The pottery was invariably hand-made and for the most part of coarse grey fabric. From the lowest levels, however, painted and incised sherds were also obtained. Children were buried in urns and adults in graves dug into the earth. This culture was overtaken by an iron-using Megalithic culture towards the beginning of the third century B.C. (below, p. 40).

At Sanganakallu, 3 miles north-east of Bellary, Subbarao unfolded a roughly similar story⁴. Here, however, the neolithic implements seem to have gone still earlier as is indicated by the presence of a large number of heavily patinated flakes⁵ and crude microliths in the lowest levels of the site. Furthermore, 'there was no definite evidence of the association of pottery in this phase⁶.

¹ Foote, *op. cit.*; Coggin Brown, *op. cit.*; *An. Rep. Arch. Surv. Ind.*, 1930-34 (1936); *An. Rep. Arch. Deptt. Nizam's Dominions*, 1936-37 (1939), etc.

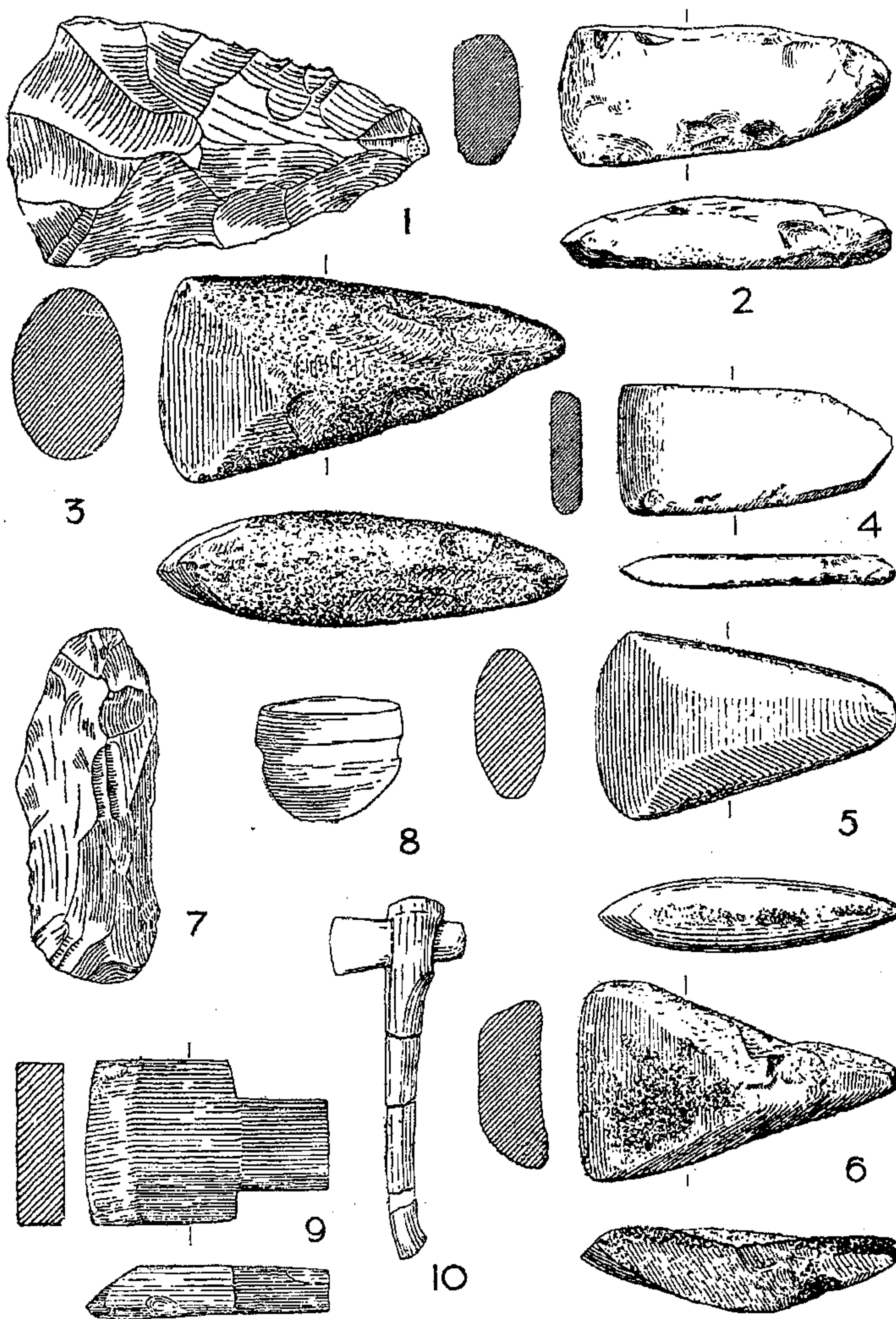
² Coggin Brown, *op. cit.*, p. 120; also *Records of the Geological Survey of India*, XIII, p. 176.

³ *Ancient India*, no. 4, p. 202.

⁴ B. Subba Rao, *Stone Age Cultures of Bellary* (Deccan College Dissertation series 7, Poona, 1948).

⁵ Patination, however, may not always be the right guide in this respect.

⁶ *Ibid.*, p. 11.



Neoliths. Scale .

(Locality Brahmagiri where not mentioned.)

1. Axe in the process of manufacture ; from Sanganakallu. 2—5. Varieties of axes. 6. Adze. 7. Fabricator ; from Sanganakallu. 8. Grooved hammerstone ; from Assam. 9. Burmese celt ; from Singhbhūm District. 10. Method of hafting an axe (after De Morgan).

The occurrence of shouldered celts of the Burmese type in Assam¹, Chota Nagpur² and other parts of North-east India points to the existence of another cultural wave, which, for all we know, represents a westward extension of the South-east Asian Neolithic complex. In India this wave seems to have travelled further downwards along the eastern coastal strip, since a celt of this type was recovered by Cammiade as far south as the Godāvarī basin³.

From the foregoing account it would be clear that the Neolithic folk of India, as elsewhere in the world, were food-producers with a comparatively settled life as against their Palaeolithic and Mesolithic predecessors who were just food-collectors, wandering from place to place. The Neolithic culture continued right down to early historical times in certain parts of India (as at Brahmagiri), although, in the rest of the country, Copper or Bronze and Iron Ages had made their appearance in the meantime.

B. PROTOHISTORIC CULTURES OF THE NORTH-WEST

With the discovery of agriculture, it became more or less incumbent on man to stick to his piece of land, to sow the seed and to wait for the harvest. He became property-minded and started domesticating animals and building a little hut for himself and his family. Several such families living in a group produced a hamlet or village. So far the earliest village-communities in India, some of which may well have begun towards the end of the fourth millennium B. C., have been detected on the Baluchistan hills and in the lower valley of the Indus.

The settlements on the hillside were small self-sufficient units, without much of intercommunication. The result was that several isolated cultures came into being. In southern Baluchistan we come across the Shāhi Tump⁴ and Kulli⁵ cultures. The former is characterized by buff or grey ware with the designs painted in black and red colours. The inhabitants made copper stamp-seals, spears and shaft-hole axes and buried the dead. The Kulli culture was again a buff-ware culture. Houses were made of stones and mud-bricks and the

¹ Coggin Brown, *op. cit.*, p. 130 ; H. C. Dasgupta in *Journal of the Asiatic Society of Bengal*, IX (1913), pp. 291-93.

² V. Ball, 'On some Stone Implements of the Burmese type, found in Pargana Dalbhum, District Singhbhum, Chota-Nagpur Division,' *Proceedings of the Asiatic Society of Bengal* (1875), pp. 118-20.

³ Cammiade and Burkitt, *op. cit.* (1930), p. 338, pl. VI B.

[NOTE : The writer's thanks are due Dr. Sankalia and Mr. Subba Rao for permission to reproduce some of the line-drawings.]

⁴ Aurel Stein, *An Archaeological Tour in Gedrosia*, Mem. Arch. Surv. Ind., no. 43 (Delhi, 1931), pp. 88-103.

⁵ *Ibid.*, pp. 118ff., besides Kulli and Mehi some smaller sites also.

people probably cremated the dead. Higher up in the same Baluchistan hills was the Nāl culture¹, known for its cemetery (inhumation and fractional burials) and the polychrome pottery. Steatite seals and beads and copper chisels and knives have also been obtained. The Quetta region² had its own black-on-buff pottery. In contradistinction to the above-mentioned buff-ware cultures was the red-ware culture of the Zhob valley³ in North Baluchistan. The pottery-designs were executed in black, although red colour was also sometimes used. Chert blades and arrow-heads and terracotta toys depicting female figures and animals were also made.

Coming to the Indus valley itself, we find the rural culture of Amri,⁴ characterized by its buff-ware with designs painted in black as well as in red. But on the whole the conditions on the plains were quite different from those on the hills. There were extensive fields for cultivation and adequate transport-facilities for inter-communication and trade. Thus, in course of time, the small settlements were replaced by large towns and cities and a uniform urban civilization came into existence.

The ruins at Harappā⁵ in Montgomery District of the West Punjab and at Mohenjo-daro⁶ in the Larkāna District of Sind present to us a highly developed urban civilization which was at its peak in the second half of the third millennium B. C. This civilization, archaeologically known as the 'Harappā' culture, from the site where it was first recognized, extended much beyond the Indus valley proper, as far east as Rūpar⁷ in Ambala District of the East Punjab and as far south as Rangpur⁸ in the Limbdi State of Kāthiāwār.

The most striking feature of these cities is their systematic lay-out. At Mohenjo-daro where the picture is better preserved one can see the main thoroughfares cut one another at right angles and the smaller

¹ H. Hargreaves, *Excavations in Baluchistan*, 1925, Mem. Arch. Surv. Ind., no. 35 (Delhi, 1929), pp. 17ff.; Stein, *op. cit.*, pp. 138ff.; for Nundara and other sites; also N. G. Majumdar, *Explorations in Sind*, Mem. Arch. Surv. Ind., no. 48 (Delhi, 1934), pp. 116 and 150-51.

² Stuart Piggott, 'A New Prehistoric Ceramic from Baluchistan', *Ancient India*, no. 3 (1947), pp. 131ff.

³ Aurel Stein, *An Archaeological Tour in Waziristan and Northern Baluchistan*, Mem. Arch. Surv. Ind., no. 37 (Delhi, 1929), pp. 31ff.; the main sites are Rānā-ghundai, Periāno-ghundai, Moghul-gundai and Sur Jangal.

⁴ N. G. Majumdar, *op. cit.*, pp. 24ff.

⁵ M. S. Vats, *Excavations at Harappā*, I-II (Delhi, 1940).

⁶ J. Marshall, *Mohenjo-daro and the Indus Valley Civilization*, I-III (London, 1931); also E. J. H. Mackay, *Further Excavations at Mohenjo-daro*, III (Delhi, 1938).

⁷ M. S. Vats, *op. cit.*, I, pp. 476-77.

⁸ M. S. Vats in *An. Rep. Arch. Surv. Ind.*, 1934-5 (1937), pp. 34-38.

streets and lanes follow suit. What is more interesting is the fact that throughout the occupation at Mohenjo-daro—a period in no case less than five hundred years old—the original plans were rigorously kept up. The well-regulated underground drainage system again speaks very highly of the civic authorities. One is surprised to find that such a system of town-planning did not exist in contemporary cities of the Middle East, which, in certain other respects, were considerably advanced.

The houses were made of kiln-burnt bricks and an average middle-class house consisted of a courtyard, a couple of bed-rooms, a kitchen, bath and store-room, while an upper class house had a few more rooms, specially a guest-room towards the outside. Some of the houses were double-storeyed, access to the upper storey being obtained by means of a well-built flight of steps (pl. II).

The Great Bath at Mohenjo-daro calls for special attention (pl. III). Constructed of burnt bricks, it was 39 feet long, 29 feet wide and 8 feet deep, with steps leading down to the floor. Along its perimeter were small rooms evidently intended to be used by the bathers. The exact significance of this bath is not known. Probably there may have been no special significance at all beyond the mere fact that it was a public bath; but it is surmised that it was attached to a religious building which probably existed below the Kushan stūpa in the neighbourhood. This presumption however, needs confirmation or modification by excavation, which is only possible if the stūpa above is dismantled. Another building which stands out by itself, is the hundred-pillared hall. It may have been used for public or religious assemblies.

Harappā, though it has been a prey to the brick-robbers, is no less interesting. Corresponding to the Stūpa Mound at Mohenjo-daro is the 'AB' mound at Harappā, a rough parallelogram, 400 yards by 200 yards, which is now known to have been a citadel¹. The defensive wall, upwards of 35 feet high and 40 feet wide at the base, was made of mud-bricks (pl. IV), externally rivetted with a baked-brick facing. In the shadow of this citadel, a little to its north, was what may be called the business part of the town. Herein special attention is drawn by: the workmen's quarters, strung out in two parallel rows running east-west, each quarter consisting of two fairly commodious rooms and a courtyard; circular brick

¹ R. E. M. Wheeler, 'Harappā 1946: the Defences and Cemetery R37', *Ancient India*, no. 3 (1947), pp. 58ff. At Mohenjo-daro surface-examination and minor cuttings along the periphery of the Stūpa Mound showed the existence of mud-brick defences. To get a detailed picture, however, it is necessary to take up large-scale excavation.

platform used for thrashing grains; and two parallel blocks of granaries, each of which contained not less than half-a-dozen storage rooms, each room being about 52 feet by 18 feet (pl. V).

The extensive use of burnt bricks, for the firing of which plenty of wood was required, and the frequent depiction of the jungle fauna like the rhinoceros, elephant and tiger combine to show that in the third millennium B. C. there were more rains in these areas than to-day. Furthermore, the Indus and Rāvi rivers respectively washed the skirts of the cities of Mohenjo-daro and Harappā. All this meant adequate water-supply and more cultivation. Wheat and barley were the mainstay of the people; fowls, goat and sheep etc. were also taken. Amongst the domesticated animals mention may be made of the humped bull, buffalo, dog and elephant etc.

What exactly was the dress of the Harappā people we do not know. The use of cotton for textile, however, is duly attested. A potsherd from Harappā depicts a man putting on a *dhōti*¹, while the famous limestone statue (pl. VI A) shows the use of a shawl-like upper garment. The occurrence of needles as well as buttons suggests that some of the clothes were stitched.

Life seems to have been quite gay and happy as is reflected in the variety of ways in which the women-folk dressed their hair and bedecked their persons. There were diversions too like playing dice and hunting wild beasts. The youngsters played with marbles, rattles and other toys, some of which may be noted for their ingenuity.

From the inscriptions on the seals (pl. VII B) it is clear that the Indus people knew reading and writing, the script being pictographic. It is, however, sad that we are not yet in a position to decipher these inscriptions. One day some bilingual inscription might be discovered, which would unlock the mystery of the script.

The height which the Indus people had achieved in the art of making sculptures in the round is shown by the two sandstone statuettes from Harappā, in which human anatomy has been excellently depicted (pl. VI B). These objects could well have been the envy of the Greek artists some two thousand years later. No less remarkable are the limestone figure of a noble man (pl. VI A) and the dancing bronze figurine (pl. VII A). The seal-cutter's art too had reached its zenith (pl. VII B). The humped bull, standing in a majestic posture, speaks volumes for the craftsmen.

People worshipped the mother-goddess or the goddess of fertility (pl. LVIII A); while trees, streams and animals were also considered

¹ Vats, *op. cit.*, II, pl. LXIX, 16.

objects of worship. The representation on a seal of a horned god surrounded by animals (pl. VII B) has led scholars to believe that Śiva in the form of Paśupati—the lord of animals—was also worshipped. The Harappans, or at least a section of them, buried their dead in graves dug into the earth. The body was usually laid supine in an extended position, the head being towards the north. Funerary pottery and sometimes toilet and other objects were also placed alongside. Of unusual interest is a burial in which the dead body was wrapped in reed-shroud and placed in a wooden coffin¹.

The authority that carried on the administration of these well-managed cities must indeed have been a very strong one. Until recently it was believed that the Harappā civilization was the earliest essay in the democratic form of government. But the discovery at Harappā of a citadel amidst a large habitation-area (above, p. 33) points to some sort of a 'citadel-rule', whether priest-ridden or monarchical.

In trade and commerce the Indus Valley people had considerably advanced. Merchandise was carried as far west as Sumer, where seals of the Indian style have been found mainly in the Akkadian (2370 B. C.), but also a few in pre-Akkadian and post-Akkadian levels².

This grand picture of the earliest civilization of India is still incomplete since it is devoid alike of genesis³ and decay. Either flood or some other catastrophe brought about an end to these cities, some time in the second quarter of the second millennium B. C. At Harappā an alien culture, represented by the Cemetery H burials with the distinctive bright-red ware, overlies the Harappan ruins. At Chanhudaro two cultures, Jhūkar⁴ and Jhāngar,⁵ characterized respectively by buff ware with black and red paint and grey incised ware, successively followed the Harappā culture. These were just

¹ Wheeler, *op. cit.*, pp. 87-88.

² C. J. Gadd, 'Seals of the Ancient Indian Style found at Ur', *Proceedings of the British Academy*, XVIII (1932); cf. also S. Piggott in *Antiquity*, XVII (1943), pp. 178ff. For the date of Sargon of Akkad, cf. M. E. L. Mallowan in *Iraq*, IX (1947), pp. 4-5, quoting Sidney Smith.

³ The 1946-excavations at Harappā brought to light a ceramic industry which lay immediately under the mud-brick defences. This pottery, however, has no genetic relationship with the Harappā ware and therefore does not carry us any further in tracing out the origin and early stages of the Harappā culture itself; cf. *Ancient India*, no. 3, p. 91.

⁴ Majumdar, *op. cit.*, pp. 5-18 and 48-58; also Mackay, *Chanhudaro Excavations* (Newhaven, Conn., 1943), pp. 103ff. for the evidence at Chanhudaro.

⁵ Majumdar, *op. cit.*, pp. 68-70; also Mackay, *op. cit.*, (1943), pp. 132-38 and 189 for the evidence at Chanhudaro.

localized peasant-cultures and stood no comparison whatever to their mighty predecessor.

In their wider setting, the Indian protohistoric cultures seem to fit into a general scheme of distribution of red and buff ware cultures, applicable from Iraq to India—the red falling mainly in the northern regions and the buff in the southern, though not without occasional overlaps. As regards the chronology of the Indian cultures themselves, available evidence shows that Quetta, Amri and Zhob antedated Harappā. Kulli, though earlier in origin, was mostly contemporary with it, while Nāl was both contemporary and later. Shāhi Tump, Jhūkar and Cemetery H were post-Harappā and Jhāngar the latest of the series¹.

C. THE DARK AGE

The picture between the Harappā culture on the one hand and the early historical period (c. 300 B. C.) on the other is indeed a very hazy one. Archaeologically speaking nothing or practically nothing is known about the Vedic, *Rāmāyana* and *Mahābhārata* periods, which, according to the literary evidence, must have filled in this blank.

At Harappā, as stated above, the Cemetery H culture is superimposed on the latest levels of the Harappā culture itself. This intrusive culture may well belong to the Aryan invaders,² whose first incursion into India appears to have taken place some time during the second quarter of the second millennium B. C. In the earlier part of this Dark Age may also fall the Jhūkar and Jhāngar cultures of Sind, which successively followed the Harappā culture.

Other finds which call for consideration here are the copper hoards from North and Central India, although nothing very definite is known about their date. In the United Provinces were found: thirteen swords with 'antennae' hilts and a human figure from Fatehgarh (District Farrukhābād); fourteen celts and four harpoons from Bithūr (District Kanpur); ten celts and six harpoons from Rājpur (District Bijnor) and one each of axe, harpoon and human figure from Bisauli (District Budaun).³ In Bihar, axes and bar-celts have been obtained from places in Pālāmau, Ranchi, Hazārībāgh

¹ Cf. Pigott, 'Chronology of Prehistoric North-west India', *Ancient India*, no. 1 (Jan. 1946), pp. 8-26.

² Childe, *New Light on the Most Ancient East* (London 1934), p. 223. Also Wheeler in *Ancient India*, no. 3, pp. 78-83.

³ Vincent A. Smith, 'The Copper Age and Prehistoric Bronze Implements of India', *Indian Antiquary*, XXXIV (1905), pp. 229-44. Only the more important finds have been mentioned in the present paper. Finds from Bisauli are unpublished; information from Dr. K. N. Puri.

and Mānbhūm districts.¹ The Gungeria hoard in Bālāghāt District of the Central Provinces contains as many as four hundred and twentyfour axes and bar-celts, besides a large number of silver ornaments resembling stylized bull's head.² The extensive use of copper for implements and weapons, which would have certainly been much more effective in iron, points to a pre-iron horizon. It seems likely, though not proved, that these implements were associated with a phase of the Aryan expansion from the land of Seven Rivers (modern Punjab and environs) to the Gangetic plains.³

Beyond these four isolated scraps of evidence (viz., the Cemetery H, Jhūkar, Jhāngar and Copper Hoard cultures), there is hardly anything else to bridge this vast gap of nearly 1300-1400 years. If we get a site where the lower levels belong to a phase of the Indus Valley civilization and the upper to the early historical period, with the continuous occupation in between, the problem would be solved in no time. But that being more of a dream than of reality,⁴ we shall have to tackle the question in a slightly different manner. First of all, it is necessary to assess and stratify fully the various cultures of the early historical period itself, with a special reference to the ceramic industries. This is to be done by proceeding from the known industries to the half-known ones, and thereafter to the unknown. The excavations at Arikamedu (1945), Brahmagiri (1947) and Śīsupālgarh (1948) were planned on these lines. This sequence will, it is hoped, be soon brought over to the Gangetic plains where an excavation of selected sites like Rājgir (Bihar) and Hastināpura (U. P.) etc., known to be very old from either literary sources or tradition, is likely to throw some light on this Dark Age. A thorough examination of some of the copper hoard sites is also equally necessary.

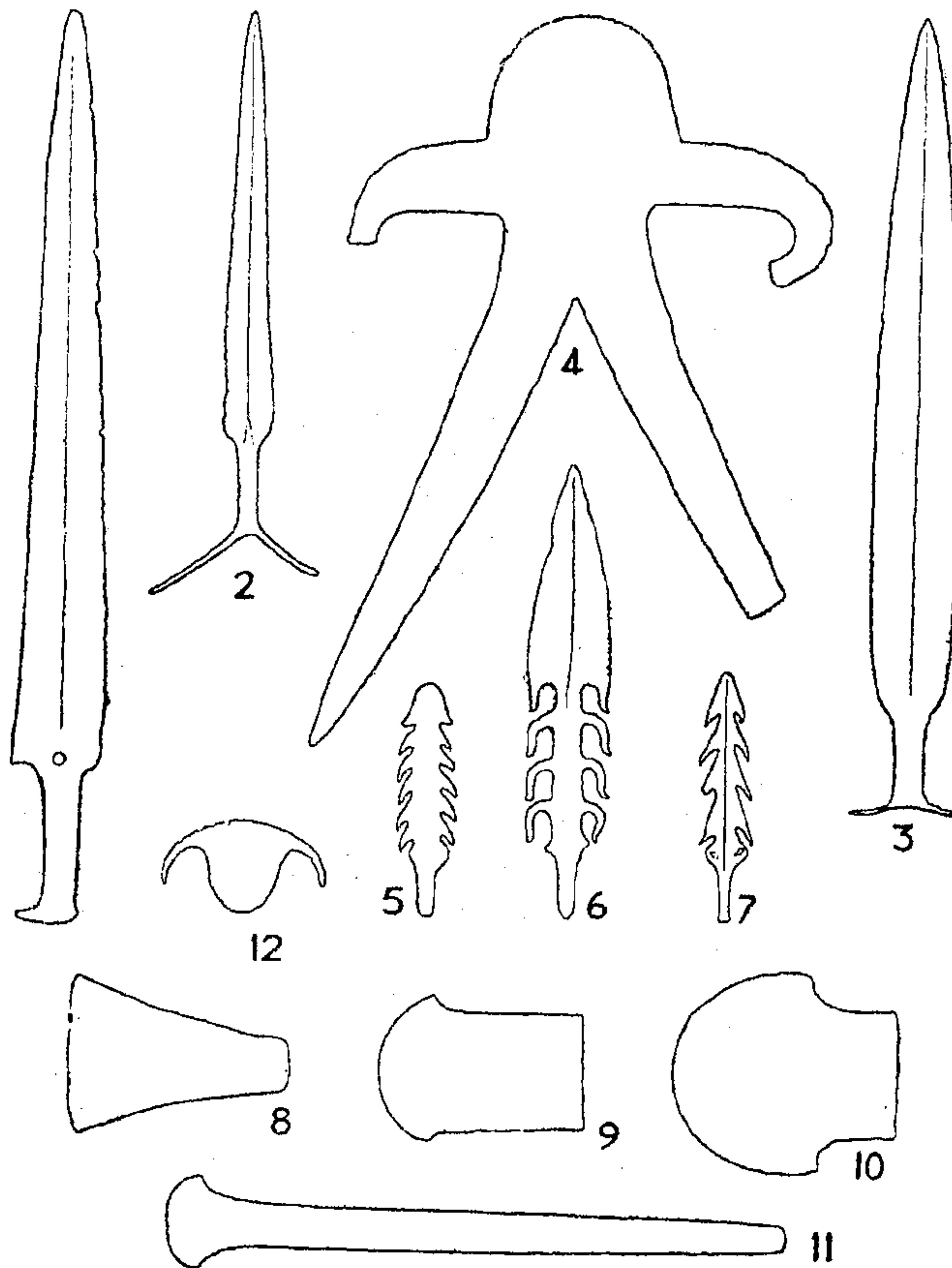
The question should also be tackled from the other side as well. In post-Partition India we have two outliers, namely, Rūpar near

¹ *Journal of Bihar and Orissa Research Society*, I (1915), pp. 125, 127-8, 239 and II (1916), p. 85; also *An. Rep. Arch. Surv. Ind.*, 1913-14 (1917), pp. 246-47.

² Smith, *op. cit.*

³ Stuart Piggott, 'Prehistoric Copper Hoards in the Ganges Basin', *Antiquity*, XVIII (1944), pp. 173-82; R. Heine-Geldern, 'New Light on the Aryan Migration to India', *Bulletin of the American Institute for Iranian Art and Archaeology*, V (1937), pp. 7-16; and the same author's 'Archaeological Traces of the Vedic Aryans', *Journal of the Indian Society of Oriental Art*, IV, no. 2 (1936).

⁴ Mention in this connexion may be made of the mounds at Bālā Hisār, near Chārsada, 20 miles north-east of Peshawar. With an occupational deposit of nearly 100 feet in height and the presence of Kushan relics near the top, it is not unlikely that an excavation of this mound might reveal come useful evidence about the Aryans and the Dark Age.



Objects of copper (nos. 1-11) and silver (no. 12). Scale $\frac{1}{8}$.

1. Sword with hooked hilt ; from Fatehgarh, Farrukhābād District U. P.
2. Sword with characteristic 'antennae' hilt ; from Fatehgarh.
3. Sword with less pronounced 'antennae' hilt ; from Fatehgarh.
4. Rude 'anthromorphic' figure ; from Fatehgarh.
- 5-7. Harpoons ; respectively from Mainpuri, Chāndpur (Bijnor District) and Bithūr (Kanpur District), U. P.
- 8-10. Celts ; respectively from Gungeria (Bālaghāt District), Chāndpur and Tamajuri (Midnāpur District), Bengal.
11. Bar-celt with an expanded lunette-shaped chisel edge ; from Gungeria.
12. Stylized bull's head ; from Gungeria.

- Ambala and Rangpur in Limbdi State (above, p. 32), which are associated with the Indus Valley civilization as a whole. These places and the territories around them require more intensive exploration. Again, bordering on the Rajputana desert is the Bahawalpur State where Aurel Stein discovered several Indus Valley sites during his exploration in 1940-41¹. His work in the western part of Bikaner and Jaisalmer States, with special reference to the dry bed of the Ghaggar river, ought to be continued.

Thus by working from both the ends, i.e., from the Indus Valley period downwards and from the early historical period upwards, it would be possible one day to produce a connected story of India's past. Extensive exploration and intensive excavation are the only remedies.

D. THE MEGALITHS AND ALLIED MONUMENTS

The megaliths, as the nomenclature suggests, are monuments built of large stones (from Greek : *megas*=great ; *lithos*=stone). But not all monuments constructed of big stones are megaliths. The term has a restricted usage and is applied only to a particular class of monuments or structures which are built of large-sized stones and have some sepulchral, commemorative or ritualistic association. In peninsular India, which once was the stronghold of the 'megalithic culture', no less than a dozen varieties of these monuments are encountered, some of which may be described here.

Although exploration and excavation work had previously been done at quite a few other places, I would prefer to begin with Brahmagiri in Mysore State, where the 1947-excavations not only brought to light a reasonably clear picture of the structural and functional details of two types of megalithic monuments, namely, the cists and the pit-circles, but produced definite evidence with regard to their dating².

Individually every cist-grave offered some minor variations in detail, but a general set of features occurred in all. For the construction of a cist, a pit was dug in the ground and four upright slabs (orthostats) were placed in it in such a way as to form a box-like chamber, which often resembled the *svastika* on plan (pl. VIII). The cist-box was surrounded by a dry-stone walling which also served to hold it up. Below the uprights was a floor-slab and above, a massive covering called the capstone. In the eastern orthostat of the cist was a circular opening ('port-hole') 1½-2 feet in diameter and

¹ *Geographical Journal*, XCIX, no. 4 (1942) pp. 173-82.

² R. E. M. Wheeler, 'Brahmagiri and Chandravalli 1947 ; Megalithic and her Cultures in Mysore State', *Ancient India*, no. 4 (1947-1948), pp. 104ff.

approached externally by a passage formed by two flank-slabs. The graves varied considerably in size, the larger ones being 5-7 feet long, 3-5 feet wide and 5-6 feet deep and the smaller ones $1\frac{1}{2}$ -2 feet long, $1-1\frac{1}{2}$ feet wide and about 1 foot deep. The entire structure was surrounded by a circle of roughly trimmed or untrimmed granite boulders, the diameter varying from 16 to 21 feet.

Inside the cist were placed, first, the funerary pottery, iron implements (like knives, wedges, sickles, daggers, swords and arrow-heads) and beads etc., and above them, but presumably after some lapse of time, a heap of disarticulated human bones and skulls, the number of the latter being as many as six in one case. The bodies had apparently been exposed elsewhere for excarnation and a collection from several of them was interned into the cist, all at one time after which the port-hole entrance was blocked by a stone-slab and the monument finally sealed.

The other type of megalithic monument excavated at Brahmagiri was the pit-circle. It consisted of a circle of granite boulders with an over-all diameter of 20-30 feet, in the centre of which was a pit roughly circular or oval on plan. The diameter of the pit ranged from 8 to 12 feet and the depth from 6 to 8 feet. On the eastern side was a short shallow ramp or lip leading to the rim of the pit. On the analogy of the port-hole entrance of the cist, this ramp-entrance too was closed by a door-slab which in reality was non-functional. Immediately on the floor of the pit lay four stone-slabs marking out an oblong space about 4 feet by 3 feet. The funerary deposits, which lay within a height of $2\frac{1}{2}$ -3 feet from the floor-level, consisted of pottery, iron objects, beads, bangles, and, in one case, conch-shell. Above them were recovered only fragments of human bones. It is surmised that on the four stone slabs, mentioned above, rested the legs of a wooden bier which contained the human body or bodies for exposure and excarnation. In course of time most of the bones were removed for internment into the cists (above, p. 39), leaving behind only a few bits, as found in the excavation. It is, however, absolutely necessary to cross-check this evidence from several other sites before these pits can be finally accepted as 'macerating pits'.

Both the cists and the pit-circles represent a full-fledged iron-using culture which made its appearance at Brahmagiri towards the beginning of the third century B. C. superseding the local Stone Axe culture (above, pp. 27-28). From the available evidence it is also clear that this Megalithic culture continued till about the middle of the first century A. D., when it was overlapped by a local phase of the Āndhra culture.

The Chingleput District of Madras abounds in 'dolmenoid cists' and 'cairn-circles'¹. The former are again box-graves like the cists, but in this case the upper part of the orthostat (about 1-2 feet) projects above the ground-level. In southern Chingleput, where loose boulders have been used as uprights, the grave does not form a compact chamber. Inside this chamber is placed a terracotta coffin called the sarcophagus (pl. IX B) usually oriented east-west and containing the skeletal remains and other grave-furniture. The cist is enclosed by a circle of stone boulders and in between a rubble-packing forms a low cairn. In the same area one also comes across the 'dolmens', in which case the chamber is essentially above the ground-level. In one of the orthostats there may also be a port-hole.

The cairn-circle is a low mound of stone rubble outlined by a circle of large boulders. Beneath the rubble-mound may be found one or more burial-urns or sometimes a sarcophagus.

Cists, dolmens and cairns occur in a fairly wide area in the South, especially in southern Hyderabad², south-eastern Bombay³, Mysore, and northern Madras. On the Nilgiri hills have also been discovered a large number of dolmens, cairns and barrows⁴.

Characteristic of the Pudukkottai region⁵ is the transepted variety of the cist. In this case the cist-chamber is partitioned into two halves by a central vertical slab (*septum*), oriented usually east-west. One of the halves is further sub-divided into two parts, this time lower and upper, by a horizontal slab. Each of the lower and upper parts is connected with the undivided half by means of a port-hole cut into the central *septum*, the two port-holes falling in a vertical line. Adjoining the undivided half of the cist, and usually on its eastern side, is an antechamber, the two being connected by a port-hole. The cist is usually surrounded by a stone circle.

In Cochin State one comes across some megalithic types which do not occur elsewhere in India⁶. Mention may here be made of the

¹ V. D. Krishnaswami, 'Megalithic Types of South India', to appear in *Ancient India*, no. 5.

² Meadows Taylor, *Megalithic Tombs and other Ancient Remains in the Deccan* (papers collected and republished by the Archaeological Department of Hyderabad State, 1941) ; also E. H. Hunt, *Hyderabad Cairns* (Bombay, 1916).

³ R. S. Panchamukhi, 'Dolmens and Cairns of Karnatak', *Journal of the University of Bombay*, XIV, pt. IV (1946), pp. 10-28.

⁴ J. W. Brecks, *Primitive Tribes and Monuments of the Nilgiris* (London, 1873).

⁵ K. R. Venkatarama Ayyar, *A Manual of the Pudukkottai State*, II, pt. I (1940), pp. 523-4.

⁶ L. A. Krishna Iyer, 'The Prehistoric Archaeology of Kerala', *Modern Review* (March 1946), pp. 182-190.

'umbrella or hat-stones' (locally known as *topikal* or *kudaiikal*), 'hood-stones' and underground rock-cut caves. The umbrella-stone proper, from which the entire monument derives its name, is a low cone with the circular edge chamfered towards the inside and rests on four clinostatic slabs truncated near the top (pl. IX C). The clinostats form a rough square at the base, each slab facing a cardinal direction. The height of the monument varies from 4 to 7 feet. The hood-stone, which resembles a handleless hollow umbrella has no clinostatic support and rests immediately on the ground. In the case of the rock-cut caves, a roughly rectangular pit of varying depth is sunk into the ground and then into one of its sides (or more) are hollowed-out small caves, usually circular or oval on plan having a vaulted roof. In the centre of these caves is sometimes retained a rectangular square or circular pillar which joins the floor with the vault. Sometimes there may be benches also inside the cave, their height ranging from 6 inches to 2 feet. Menhirs or large monolithic slabs standing upright (pl. IX A) are also met with in Cochin State.

As regards the date of these megalithic monuments, we have already seen (above, p. 40) that the Megalithic culture at Brahmagiri flourished during the last quarter of the first millennium B. C., extending into the first century A. D. Evidence pointing roughly to the same horizon has also been obtained from a few other places. At Sulur in the Palladam Taluk of Coimbatore District there is a group of megalithic cists, from one of which W. H. Tucker obtained, besides funerary objects and bones, a coin of the Eran type assignable to the third-second century B. C.¹ A silver coin of Augustus (23 B. C.—A. D. 14) and several punch-marked coins of pre-Christian epoch have also been found in these tombs². At Arikamedu near Pondicherry J. M. Casal found (1947) the distinctive red-and-black ware of 'Megalithic' fabric in levels otherwise assignable to the first century A. D.³ Russet-coloured pottery having a general similarity with the yellow-painted Āndhra ware has been obtained from a port-holed cist in Cochin⁴. The available evidence thus shows that the Megalithic culture of India is far removed in time from that of Europe (c. 2500 B. C.—1500 B. C.)⁵. Yet one sees a good deal of structural similarity between the monuments of the two

¹ 'India' number of *Man*, 1930, no. 134, p. 172.

² *Madras Journal of Literature and Science*, 1884, p. 214; *Indian Antiquary*, II (1873) p. 241; *Journal of the Bombay Branch of the Royal Asiatic Society*, I (1843), p. 293.

³ Information from the excavator; report not yet published.

⁴ Govinda Menon in *Man*, 1937, no. 179.

⁵ See G. E. Daniel in *Proceedings of the Prehistoric Society*, VI (Cambridge, 1940), pp. 133ff. and VII (1941), pp. 1ff.; also V. Gordon Childe in *Ancient India*, no. 4 (1947-1948), pp. 4ff.

regions. How that is so only further exploration and research, especially in the intermediary regions, can explain.

There is another class of burials, which, though without any 'lithic' appendage, may also be considered here, because of its apparent association with the megalithic culture as a whole. I mean the urn-burial of Ādichanallūr¹ in Tinnevely District of Madras.

- The urns, which had been placed in pits of size in the ground, contained iron implements and weapons, funerary vessels, bronze lids crowned with the animal representations, personal ornaments of gold and bronze, besides, human remains attesting fractional burials.

Megaliths and urn-burials have been referred to in the Tamil literature.² Here is a verse from the *Purnānūru*, an anthology of four hundred verses composed by various poets in the early Śaṅgam Age (early centuries A. D.):

'O potter-chief! maker of vessels'
 Thou whose furnace sends up thick clouds
 Of smoke, veiling the outspread heavens,....
 Valavan, the great, ...
 Hath gained the world of gods. And so
 'Tis thine to shape an urn, so huge
 That it shall cover the remains of such an one.³

From the foregoing it would be apparent that the main focus of the Megalithic culture was the Deccan, specially south of the Godāvarī River. However, large-stone structures resembling some of the usual megalithic types have also been reported from some places in North India, for example, Nagpur, Chāndā and Bhandārā Districts of C. P.⁴; Serāikālā State⁵ (now merged with Bihar); Kherā⁶ near Fatehpur Sikrī, District Agra; Deodhoora,⁷ Almora District, U. P.; and Deosa,⁸ 32 miles east of Jaipur in Rajputana. But since no excavation, not even a reliable surface-examination, of these monuments has so far been carried out, it is difficult to say if and how far they are connected with the megaliths discussed above.

¹ A. Rea, *Catalogue of Prehistoric Antiquities from Adichanallur and Perumbair* (Madras, 1915).

² K. R. Srinivasan in *Ancient India*, no. 2 (1946), pp. 9-16.

³ *Indian Antiquary*, XXIX (1900), p. 284.

⁴ Gazetteers of the respective Districts.

⁵ P. Mitra, *Prehistoric India* (Calcutta, 1927), pp. 189, 308 and pl. LII.

⁶ Cunningham, *Arch. Surv. Ind., Rep.*, VI (1887), pp. 104ff.

⁷ W. J. Henwood in *Edinburgh New Philosophical Journal*, New Serie (Edinburgh, 1856), pp. 204-5.

⁸ *Arch. Surv. Ind. Rep.*, VI, p. 14.

At Waghodur,¹ 20 miles east of Karachi, on the road-side from Karachi to Kotri, cairns and cromlechs have been observed which may probably belong to the megalithic class under consideration. In the fastness of the Himalayas too have been found megalithic cists near Leh,² the capital of Ladakh, and menhirs at Burzhom³ between Srinagar and Gandarbāl.

It is interesting to note that megalithism is still alive amongst the Maria Gonds of Bastar,⁴ the Bondos and Gadabas of Orissa,⁵ the Orāons and Mundās of Chota Nagpur⁶ and the Khāsis and Nāgās of Assam.⁷ Their monuments, which are of a memorial nature, include dolmens, stone-circles and menhirs. This North-east Indian 'Megalithic' culture seems to have a South-east Asian affiliation rather than Western.⁸

E. THE ROCK-PAINTINGS OF CENTRAL INDIA

To the foregoing general survey of prehistoric and protohistoric India may also be added a note on the rock-paintings discovered in the central plateau of the country, although, as would be clear from the following, these paintings are not truly prehistoric as those in Altamira, Cogul and similar other caves of Europe. This central table-land consists mainly of sandstone—a relatively easier prey to weathering and rain-erosion—with the result that overhanging roof-like cliffs are frequently seen in this area. These natural shelters were frequently inhabited by the primitive folk (as a matter of fact some of the shelters are even today in use), who left their mark in the form of pottery, ash, charcoal, and, above all, paintings on the walls. Till now four principal centres of these paintings have been detected: (i) the Son valley in Mirzāpur District, (ii) Mānikpur and its neighbourhood in Bāndā District—both in the United Provinces;

¹ *Journal of the Bombay Branch of the Royal Asiatic Society*, V (1857), pp. 353ff.; also H. Cousens, *The Antiquities of Sind*, Arch. Surv. India, New Imperial Series, XLVI (1929), pp. 44-5.

² A. H. Francke in *An. Rep. Arch. Surv. Ind.*, 1909-10 (1914), pp. 104ff.

³ C. E. L. Carter, *Stone Age in Kashmir*, Memoir of the Archaeological Survey of Kashmir, no. 2 (1924).

⁴ V. E. Elwin, 'Funerary customs in Bastar State', *Man in India*, XXV (1945), pp. 112ff.

⁵ C. Von Fürer-Haimendorf, 'Megalithic Ritual among the Gadabas and Bondos of Orissa', *Journal of the Asiatic Society of Bengal* (Letters), IX (1943), pp. 43ff.

⁶ V. Ball 'Stone Monuments in the District of Singhbhum—Chota Nagpur', *Indian Antiquary*, I (1872), pp. 291-2.

⁷ C. Von Fürer-Haimendorf, *The Naked Nagas* (London, 1939), pp. 26 and 32; also P. R. T. Gurdon, *The Khasis* (MacMillan, 1914).

⁸ Cf. C. Von Fürer-Haimendorf, 'The Problem of Megalithic Cultures in Middle India', *Man in India*, XXV (1945), pp. 73ff.

(iii) Singhanpur and Kabrā Pahār in the Raigarh State¹ and (iv) Hoshangābād and Pachmarhi in the Mahādeo Hills, Central Provinces.

The Mirzāpur paintings² are all located in the hilly tracts forming the southern part of the district and are accessible, though not very easily, from the towns of Robertsganj and Ahraura. The more important shelters are at Likhuniā, Kohbar, Mahraria, Bijaygarh and along the Bhal-daria river. In the Likhuniā cave two paintings merit mention, one, depicting the capture of a wild elephant by horsemen with the help of a tame elephant and another showing the entrapping of some large birds.³ The Kohbar paintings portray dancing human figures and deer and other animals with cross-hatched bodies.⁴ In the Mahraria shelter too are shown dancing human figures in red ochre.⁵ In one of the caves along the Bhal-daria river is depicted a group of four snipes wading through water towards a tree.⁶ In the same cave is painted a wounded wild boar. The open mouth, suggesting that the animal is feeling hard the pain, is indeed very remarkable (pl. XII C). On the way to the famous Bijaygarh fort is a rock on whose surface are cut in low relief a warrior and a lion.⁷ In one of the caves on the fort-hill have been recorded about two dozen inscriptions in red ochre, dating from the fifth to the eighth century A.D. Though such an occurrence of inscriptions cannot always be taken to mean that they are contemporary with the paintings nearby, in the present case they appear to be so. On this and other considerations (such as style, subject-matter, etc.) the Mirzāpur paintings seem to be fairly late, ranging between c. fourth and tenth century.

In the Bāndā region, rock-paintings have been recorded at four sites, viz., (i) Sarhat, (ii) Kuriā-kund, (iii) Karpattia (in Panna State), respectively 1½ miles north-west, 12 miles south-east and 12 miles south-south-east of Mānikpur, and (iv) Malwa, 16 miles south of

¹ Now merged with the Central Provinces.

² M. Ghosh, *Rock-paintings and other Antiquities of Prehistoric and Later Times*, Mem. Arch. Surv. Ind., no. 24 (1932), pp. 15-20; J. Cockburn in *Journal Asiatic Society, Bengal* (Natural History), LII, part II (1883), pp. 56-64; also in the *Journal of the Royal Asiatic Society* (1899), p. 89; Percy Brown, *Indian Painting* (London, 1932), p. 16; P. Mitra, *Prehistoric India* (Calcutta, 1927), pp. 202ff.; and D. H. Gordon, 'Indian Cave Paintings', in *Ipek* (Leipzig, 1935), pp. 107-14.

³ M. Ghosh, *op. cit.*, pls. VIa and XVIIb respectively.

⁴ *Ibid.*, pl. XXIIa.

⁵ *Ibid.*, pl. XXIa.

⁶ *Ibid.*, pl. XXVa.

⁷ *Ibid.*, pl. IXb.

Badausa Railway station¹. Most of these paintings are on the exposed rock-surface (not in rock-shelters) and are executed in red ochre. At Sarhat is portrayed a group of three horses, each caparisoned and led by a man.² A scene at Malwa depicts a wheel-less bullock-cart carrying a nobleman(?) and an attendant holding up an umbrella. The cart is escorted by two men, one armed with bow and arrow and another with probably a wooden stick.³ The Kuriā-kund example shows several archers on horseback chasing some animals, probably stags. As regards dating, there is no other evidence except that of the subject-matter and style of depiction of the paintings themselves. Fourth-fifth century A.D. would seem to be a reasonable approximation for the early limit of these paintings.

The village of Singhanpur (Raigarh State) is about 3 miles to the north-west of Nahapāli Railway station on the main line between Calcutta and Nagpur. Close to this village is a hill which contains the rock-paintings.⁴ These are executed in dark red colour with a variation from orange-red to purplish dark. Most of the human figures are shown with a square outline, the body being either completely filled up or hatched with wavy vertical or horizontal lines (in the latter case producing a ladder-effect). There are 'stick-like' figures too. In the illustration given here (pl. X) is seen a large-sized animal being attacked by several men with clubs or rods. Below the animal but a little to the left is another animal tossing a man. The three human figures to the right of the central animal and also the six bottom left figures seem to be somewhat (but not much) later additions.

The other site, viz., Kabrā Pahār,⁵ is about 10 miles to the south-east of Raigarh city. The paintings are in dark red colour with slight variations and include animal and human figures comparable to those of Singhanpur (above). A lizard, crocodile, stags and other animals with cross-hatched bodies and a row of human figures standing hand-to-hand and foot-to-foot deserve special notice. There are several symbols too, but it is difficult to make out what they actually stand for.

¹ C. A. Silberrad, 'Rock Drawings in the Banda District', *Journal of the Asiatic Society of Bengal*, III (New Series, 1907) pp. 567-70.

² *Ibid.*, fig. 1.

³ *Ibid.*, fig. 2.

⁴ M. Ghosh, *op. cit.*, pp. 9-14; D. H. Gordon, 'The Date of Singhanpur Rock Paintings' in *Science and Culture*, V, no. 3 (Calcutta, Sep. 1939), pp. 142-47; P. Mitra, *op. cit.*, pp. 195ff. and a note by Percy Brown in the same book on pp. 458ff.

⁵ Gordon, 'The Rock Paintings of Kabrā Pahār' in *Science and Culture*, V, no. 5 (Calcutta, Nov. 1939), pp. 269-70.

The Raigarh group of paintings, it may be stated with some degree of certainty, belong to the earliest phase of the entire Central Indian rock-paintings discussed here. They agree, for all we know, with the earliest Pachmarhi and Hoshāngābād examples (below).

By far the richest area in respect of rock-paintings is that of the Mahādeo Hills in the Central Provinces, with Pachmarhi at the centre.¹ In these hilly tracts no less than fifty painting-bearing shelters have been recorded, some of which may be mentioned here. Within a radius of 5 miles from Pachmarhi are the shelters known as Dorothy Deep, Upper Dorothy Deep, Monte Rosa, Mahādeo, Bazār, Jambū Dwip, Nimbu Boj, Mārodeo, Baniā Beri and Dhuāndhār² etc. The shelters at Tāmiā, Son Bhadra and Jhalai are respectively 20, 25 and 40 miles (direct distance) from Pachmarhi. About 2½ miles from Hoshangābād is the Adamgarh Quarry shelter, known for its rock-paintings.³

The subjects usually depicted in these paintings are: chase of wild animals; collection of honey from bee-hives; fight between two parties of men using bows and arrows or swords and shields, sometimes riding on horseback. Besides, there are scenes from pastoral life in general—rows of cattle with the cowherd, cattle-shed, thatched hut with its occupants, etc. Among the wild animals portrayed are elephant, panther, tiger, bear, wild boar, deer, sambhur, crocodile, etc. The domestic animals include oxen, horses, goats and rarely dogs. The Dorothy Deep paintings show a magical (?) sky-chariot and a rat-faced cult-figure. In a Monte Rosa shelter is portrayed what Gordon calls a 'Gilgamesh' figure subduing two wild animals.⁴

Of rare humour is a scene in Upper Dorothy Deep shelter, in which a monkey, standing on its hind legs, plays on a flute, while a man is lying on his back on a country cot, too small for his size. The arms of the man are raised, as if the palms would keep time with the flute (pl. XII B).

In Baniā Beri cave is depicted a large cross around which is a group of men, most of them holding in their hands what may be a

¹ Gordon in *Illustrated London News*, Sep. 21, 1935; *Ipek*, 1935; *Indian Arts and Letters*, X, no. 1 (London, 1936), pp. 35-41; *Science and Culture* (Calcutta), V, no. 6 (Dec. 1939), pp. 322-327; V, no. 10 (April 1940), pp. 578-84; also G. R. Hunter, *Nagpur University Journal* (1935), pp. 28ff. and (1936), pp. 127ff.

² This cave was discovered by Mr. A. Ghosh in course of his exploration of the area during 1940. The report is not yet out, but Mr. Ghosh has very kindly supplied me with the necessary information.

³ M. Ghosh, *op. cit.*, pp. 21-22.

⁴ All these paintings have been illustrated by Gordon in his articles cited above.

raised umbrella (pl. XI). It looks like a 'Cross-worship' scene. The cross represented here may be a primitive or conventionalized form of *svastika*, a sacred symbol in India (as also in several other countries) from the earliest times. Below the 'Cross-worship' scene are three animals, probably cows. To show that the left-most cow is with her calf the artist cut open a section of her belly and in the vacant space portrayed a calf in crouching position—indeed a very ingenious device! The wavy lines below these animals may probably represent a stream, on the other side (bottom) of which is long row of small animals, probably goats. In the same cave is painted another cross (pl. XII A), composed of small triangles, which have a look of having been made out of a stencil (?).¹

On the basis of style, colour, subject-matter and mutual superimposition, Gordon has divided these paintings into five series, with a further sub-division, Early and Late, in the first four. His conclusions may be summarized as follows² :—

1. First Series. (A) Early: below all types wherever superimposition is found; scarce; square-shaped and geometrical figures; dark red colour interlined with cream. (B) Late: linear or 'stick-like' figures; combined dark red and cream, dark brick, pinkish red, yellow and brown; appearance of bow and arrow.

As a whole: Characterized by stylized technique; no grouping of figures to indicate events or occupation; no horse which is common in subsequent series. Closely comparable to similar paintings at Singhanpur and Kabrā Pahār.

2. Second Series. (A) Early: cream colour, sometimes greenish white too; crude form of naturalism appears; human beings and animals in conflict. (B) Late: colours same as in Early; increase in naturalism; tendency to grouping and attempts at narrative; human figures with animal heads, probably masked hunters.

As a whole: the men are hunters rather than warriors (as in Third, below); bow usual weapon. Older figures at Likhuniā and some at Kohbar show great similarity with examples of this series.

3. Third Series. (A) Early: dark and pink and occasional allied white ochre; progress both in drawing and vitality. (B) Late: profuse white ochre.

¹ An example of stencil-work was also noticed by Gordon in the Kabrā Pahār shelter (*Science and Culture*, V, no. 5, Nov. 1939).

² These divisions have been dwelt upon in all his writings, and I have here tried to keep as close to them as possible.

As a whole: elaborate battle scenes; caparisoned horses; warrior tribes with military equipment such as swords, daggers, shields, spears, axes bows and arrows. Late Third and Early Fourth mark the highest point of the entire rock-paintings.

4. Fourth Series. (A) Early: white Late Third series in red outline. (B) Late: drawing stiff and inferior at places; a poor continuation.

5. Fifth Series: scarce; ill-executed; greenish yellow ochre.

This analysis of Gordon must form the basis of all future investigations on the subject,¹ although it would perhaps appear that the classification is rather too elaborate.² However, at a later stage, when, after the fullest research, we are in a position to review the paintings in their totality, we might perhaps find that there are fewer groups than Gordon has postulated. His Late Third, Early and Late Fourth might probably merge into one broad group, while the Fifth may be nothing more than the performance of some sporadic artists.

Now to the question of dating. Gordon compares the warrior figures of the Late Third and Early Fourth series with two warriors occurring on a small statuary group from Purānā Mahādeva Temple at Harasnāth, Rajputana,³ ascribable to late tenth century. The black and white stripes on a Late Fourth series figure at Jhalai have parallels in the paintings of Cave I at Ajantā, datable to c. sixth century. Again, a shield in the Adamgarh paintings⁴ with 'hairy hide covering' and belonging to Early Third series is comparable to a similar one at Ajantā. It would thus follow that most of the paintings of the Third and Fourth series, which represent a full-fledged metal-using culture, were executed during the period between the sixth and tenth centuries. But what about the early limit? The paintings of the First series, with their square-shape and 'stick-like' figures and absence of metal weapons, definitely call for further consideration. To this weight is added by the occurrence of microliths in and around many of the rock-shelters.

¹ The Dhuāndhār cave is immensely suited for a study of superimposition of the paintings.

² Gordon had originally sub-divided the Second, Third and Fourth series into three phases, Early, Middle and Late. Anyway, it is agreed that such subdivisions are always good for an initial study.

³ Now in the Indian Section of the Victoria and Albert Museum, South Kensington.

⁴ About these Adamgarh Quarry paintings De Terra observes: 'The style and technique of the rock-drawings argue against such great antiquity (viz. Palaeolithic Age)'. *Ice Age* etc., p. 323. It should be added here none of these paintings depicts a mammoth, nor are there any proto-Indus symbols, as suggested by some early writers.

One is, therefore, led to suspect that the First series is fairly early, but how much, it is futile to conjecture. If these earliest paintings are to be associated with the 'microlithic' people, then also we are nowhere nearer absolute dating, since the 1947-Brahmagiri excavations have shown that microliths remained in use as late as the third-second century B.C. (above, p. 27). *Circa* middle of the first millennium B.C. may, therefore, be treated as the lower limit, until some evidence for more precise dating is forthcoming.

B. B. LAL.

2. THE HISTORICAL PERIOD

The paucity of archaeological material between the end of the protohistoric cultures of the north-west and the historical period has been commented on above (p. 36). The paucity seems to be mostly due to the lack of proper exploration of sites which may, on literary evidence, be reasonably expected to supply material for bridging the gap.

The beginning of historical archaeology in India, in the present state of our knowledge, may be dated to the third century B. C. Relics two or three centuries prior to that date are known to exist on a few city-sites, *e.g.* Taxila and Rājgir. A pre-Mauryan age has been claimed for finds from other sites but is not proved beyond doubt.

The explored historical sites have been grouped below on a geographical basis. Alternatively they could have been classified according to their nature as city-sites and Buddhist sites, but as there are many sites which were at once cities and Buddhist centres, such a classification would necessarily have involved an overlap.

Unless otherwise stated, the excavations described below are the work of the Department of Archaeology.

A. SITES IN NORTH-WESTERN REGION

Taxila

Takshaśilā, now more commonly known as Taxila, the name given to it by the Greeks, was the capital of eastern Gandhāra, i.e. the part of the north-western frontier of India (now in Pakistan) on the eastern side of the Indus. It was renowned as a political centre and a seat of learning even at the time of the invasion of India by Alexander the Great (326 B.C.). Under the Mauryas (third-second century B.C.) it was the headquarters of a viceroyalty and under the foreign rulers, who succeeded the Mauryas in the

north-west and held that region for the next six centuries or so, it continued to be a provincial capital, though a secondary one, and held that position till the north-western region was laid waste by the Huns in the fifth century. Its situation on the main trade-route connecting the interior of India with Central Asia contributed greatly to its importance.

The ruins of Taxila can be seen near the villages Serāikelā and Dherī-Shahān in District Rawalpindi. They consist of three successive city-sites, Bhīr Mound, Sirkap and Sirsukh, of which the first two have been extensively excavated, and a large number of Buddhist stūpas and monasteries, many of which have been cleared.¹

Bhīr Mound, the earliest city-site, had its origin in about the fifth century B.C. and continued to be occupied for about three centuries. The town had no systematic town-planning, the houses, all of rubble-masonry belonging to three to four periods, being jumbled up and not always with definite boundaries. A notable architectural feature was rough masonry pillars piled up inside some rooms to hold the roof. A large number of narrow soak-wells, a few of them packed with carefully-laid pottery jars all turned upside down, were met with. Another kind of soak-well was constructed of large jars set one above the other with a hole in the bottom of each.

Bhīr Mound yielded, among other objects, a good number of cut gems and a few hoards of jewellery, one of which contained, besides gold and silver ornaments, over a thousand silver coins, including two tetradrachms of Alexander the Great and a stater of Philip Aridaeus. Native coinage on the site included, besides uninscribed cast coins and square and round punch-marked coins, a large number of bent-bar punch-marked coins, which were characteristic of north-western regions.²

The next city was Sirkap, separated from Bhīr Mound by a small stream. It had its origin under the Indo-Greek rulers in the second century B.C. and had at that time a mud rampart all around. In Parthian times (first century B. C.) the northern part of the city was abandoned, and there was a simultaneous southward extension to include the high ground on the Hathiāl spur within the city. The

¹ For the ruins and excavations at Taxila see *Arch. Surv. Ind. Rep.*, II (1871), pp. 112 ff; V (1875), pp. 66ff; XIV (1882), pp. 8ff; *An. Rep. Arch. Surv. Ind.*, 1912-3 (1916) and following years; J. Marshall, *The Stūpas and Monasteries at Jaulian*, *Mem. Arch. Surv. Ind.*, no. 7 (1921); J. Marshall, *Guide to Taxila*, 3rd ed. (Delhi, 1936); A. Ghosh, 'Sirkap 1944-45', *Ancient India*, no. 4 (1947-48), pp. 41ff.

² *Ancient India*, no. 1 (1946), pp. 27ff.

new fortification, this time of rubble masonry, was most probably built by Azes I, an Indo-Parthian ruler, who is usually supposed to have started his rule in 57 B.C. It was about 4500 yards in perimeter and was provided at irregular intervals with rectangular bastions, the corner-bastions being, however, pentagonal in shape. There is evidence that the southern portion of the new city was fenced off to form a citadel.

The extensive excavations at Sirkap during 1912-35 revealed a well-laid city with a long central street flanked on either side by 'insulae' of residential blocks and sometimes of religious edifices (pl. XIII). The main lay-out of the city, as excavated, dated from Parthian times. While the main palace may have been situated in the unexcavated citadel mentioned above, one of the excavated blocks outside the citadel, with substantial masonry, elaborate planning and inner and outer courts, had every justification of being regarded as a palace, if a subsidiary one. The other residential buildings were much more modest and, in spite of a variety of plan, had the common feature of one or more quadrangles surrounded by chambers. The masonry was partly rubble and partly diaper—a new development.

A large area in the north-western corner of the fortification was explored down to the natural soil. The buildings were found to belong to six structural periods, of which the lowest two were ascribed to the Indo-Greek period.

The small finds from Sirkap were many and various and included large hoards of gold and silver ornaments and silverware. The extensive coin-collection comprised punch-marked, uninscribed cast, Indo-Greek, Indo-Scythian, Indo-Parthian and Kushan types. It may be mentioned that the stratigraphic evidence of the coins established the priority of the Kadphises group of Kushan kings to the Kanishka group and thus finally settled a point disputed by historians.

The pottery of Sirkap, compared with that of Bhīr Mound, was more developed and sophisticated and was characterized by the frequent use of utilitarian devices such as pinched lip, handle, spout and stable vase, including ring- or pedestal-base.

Of the religious buildings inside the fortified area were a stūpa and a monastery situated on the Hathiāl spur, the former believed to commemorate an incident in the life of Kuṇāla, a son of Aśoka (273-232 B.C.) but dating in its present form from not earlier than the third century A. D. It rests on a high rectangular base rising in three terraces. The much-damaged superstructure, to judge from the remains, was a high circular dome divided into six or seven

receding terraces. The adjoining monastery was built in solid semi-ashlar masonry (later than the diaper-masonry of some of the houses at Sirkap) and had the usual monastic plan of a central court surrounded on all sides by a row of cells and an intervening verandah. Further up on the Hathiāl range was another monastery, and nearby has recently been found the remains of a third one.

Sirkap was deserted some time in the second century and the city was now transferred to a site about a mile further north. Sirsukh, the third and last Taxila, has not yet been excavated. It is known, however, that the fortification here, of diaper-faced rubble, had semi-circular bastions and contained loop-holes for the use of defenders. Like the other monuments of Taxila, Sirsukh fell before the onslaught of the Huns in the second half of the fifth century.

Apart from the three city-sites, Taxila and its neighbourhood contained a large number of Buddhist establishments, the more important of which may be mentioned here. The Dharmarājikā stūpa, situated about a mile to the east of Bhīr Mound, was, as implied by its name,¹ one of the numerous stūpas built all over India by Aśoka, but in its present form (pl. XIV) it is not earlier than Kushan times. The main structure, hemispherical in elevation and circular on plan, stood on a high podium. It was built of rough rubble reinforced by thick walls radiating from the centre, while the outer facing was made of limestone blocks with recessed *kanjūr*²-panelling to contain stucco Buddhas and Bodhisattvas in niches. The stūpa was surrounded by smaller votive stūpas (below, p. 78) and chapels, some of which yielded relics of precious and semiprecious stones, gold and silver objects, coins etc. and, in one case, a silver scroll inscribed in the 136th year of the Indo-Parthian king Azes. To the north of the stūpa was a monastery with the usual adjuncts.

Another group of Buddhist monuments, dating from the second-third century, lay on and at the foot of the hills to the south-east of Sirsukh. Though there was little to distinguish them architecturally, they were remarkable for the well-preserved stucco figures which adorned them. The stūpas had the usual hemispherical domes on square bases and were surrounded by votive stūpas and chapels. The monasteries, like all the typical monuments of this class in the north-west, had rows of cells round a central court and a hall of assembly, kitchen and refectory in one wing of the building.

¹ Dharmarāja, 'the king of piety', was one of the names of Aśoka.

² Soft limestone.

A unique temple, believed to have been of Zoroastrian origin, was situated near the north gate of Sirkap. Its plan generally conformed to that of a Greek peripteral temple with a *pronaos* (front porch), leading through a side-door to the *naos* (sanctuary), and an *opisthodomos* (back porch), all surrounded on three sides by a passage, taking the place of the columned *peristyle* of the Greek temples. The front portion had four Ionic columns in two rows. Taxila had no doubt a cosmopolitan population, due as much to its commercial contacts as to the prolonged period of foreign rule.

Other Gandhāra sites

The group of mounds at Chārsada¹ (District Peshawar) is believed to represent Pushkalāvati, the capital of Gandhāra. The most prominent of these mounds, known as Bālā Hisār, is about 80 feet in height and, from its geographical position, is likely to contain remains dating back to protohistoric or early historical times. No systematic excavation has as yet been done here; in the slight operations of 1902-03 only the upper levels representing late Muslim buildings were touched.

The Gandhāra region is very rich in Buddhist remains of the early centuries of the Christian era. The abundance of stone and stucco Indo-Greek sculptures in this area (chapter V) invited in the nineteenth century a large number of explorers and treasure-seekers who did much harm to the monuments by their hasty operations. In the early years of the present century attention was paid to the more important of these monuments by the Archaeological Survey of India. One of them, Takht-i-bāhī,² on a hillock in the Yusufzāi land, mainly containing a stūpa on a square base surrounded by chapels, a monastery, vaulted rooms and a vaulted passage, was cleared in 1907-08 and 1910-11. Sahr-i-Bahlol,³ near the foot of Takht-i-bāhī, and the less impressive Jamālgarhī⁴ were excavated in 1906-07, 1910-11 and 1920-22; at both places stucco sculptures and the usual stūpa and monastic complexes were exposed.

¹ *Arch. Surv. Ind. Rep.*, II (1871), pp. 90ff.; XIX (1885), pp. 96ff.; *An. Rep. Arch. Surv. Ind.*, 1902-03 (1904), pp. 41ff.

² *An. Rep. Arch. Surv. Ind.*, 1907-08 (1911), pp. 40ff.; 1910-11 (1914), pp. 33ff. For earlier reports see *Arch. Surv. Ind. Rep.*, V (1875), pp. 23ff. See also below, p. 82.

³ *An. Rep. Arch. Surv. Ind.*, 1906-07 (1909), pp. 36ff.; 1909-10, pp. 46ff. For earlier reports, see *Arch. Surv. Ind. Rep.*, V (1875), pp. 36ff.

⁴ *An. Rep. Arch. Surv. Ind.*, 1920-21 (1923), pp. 24ff.; 1912-22 (1924), pp. 54ff. For earlier reports, see *Arch. Surv. Ind. Rep.*, V (1875), pp. 46ff.

The mound called Shāhjī-ki-Dhērī,¹ near Peshawar, excavated in 1908-09 and 1910-11, represented a stūpa on a cruciform base having circular tower-bases like bastions at the four corners. The interior of the stūpa yielded a copper relic-casket bearing an inscription of the reign of the Kushan ruler Kanishka.²

B. NORTH INDIAN SITES

Rājgir

Rājgir,³ ancient Rājagriha ('the royal abode') or Girivraja ('hill-girt city'), is famous in ancient literature as the capital of ancient Magadha (South Bihar). In the days of the *Mahābhārata* it is said to have been ruled over by Jarāsandha, a powerful prince vanquished by the heroes of the epic. At the time of Buddha a new dynasty of rulers under Bimbisāra (c. 543-491 B. C.) and Ajātaśatru (491-459 B. C.) assumed great power and renown by annexing the neighbouring kingdoms. Soon after the death of Ajātaśatru the capital was shifted to Pāṭaliputra (modern Patna), but Rājgir continued to be an important centre of Buddhism and Jainism and is considered a holy place even now by the votaries of the latter faith.

Situated about 60 miles to the south-east of Patna, the ruins of Rājgir cover an extensive valley surrounded by hills and a considerable area outside the hill-enclosure. Noteworthy are the ancient defences, which, though not accurately dated, must be at least as old as the times of Bimbisāra and Ajātaśatru, after whom Rājgir was not occupied by rulers important enough to erect any large-scale fortification.

The outer defence consists of a masonry wall, 14 to 17 feet thick and at places 12 feet high (pl. XV) running at the top of the hills with a perimeter of 25 miles, with gates at the narrow passes between the hills. Within the heart of the enclosed area stand the ruins of a citadel surrounded by a pentagonal wall of mud and rubble and of many other buildings, now hidden by thick shrub. Outside the

¹ *An. Rep. Arch. Surv. Ind.*, 1908-09 (1912, pp. 38ff.; 1910-11 (1914), pp. 25ff.

² Doubts have been raised whether this Kanishka was the first king of that name (first half of the second century) or the second one who followed him after half a century. N. G. Majumdar, *Guide to the Sculptures in the Indian Museum*, II (Calcutta, 1937), p. 13n.

³ *Arch. Surv. Ind. Rep.*, I (1871), pp. 21ff.; *An. Rep. Arch. Surv. Ind.*, 1905-06 (1909), pp. 86ff.; 1913-14 (1917), pp. 265ff.; 1925-26 (1928), pp. 121ff.; 1930-34, pt. I (1936), pp. 30ff.; 1935-36 (1938), pp. 52ff. B. C. Law, *Rājagriha in Ancient Literature*, Mem. Arch. Surv. Ind., no. 58 (1938); M. H. Kuraishi and A. Ghosh, *Guide to Rājgir* (Delhi, 1939).

the valley, at a distance of about a furlong from the north gate of the outer fortification, can be seen the ruins of the 'New Fort' said to have been founded by Ajātaśatru. Much of the mud wall demarcating the fort has disappeared, but it is quite clear that the south-western corner was enclosed by a masonry wall to form a citadel, covering an area of more than 80 acres.

The Chinese pilgrims Fa Hien and Hiuen Tsang, who visited India in the fifth and seventh century respectively, have left detailed accounts of the monuments at Rājgir, and it is possible with their help to identify many Buddhist monuments both inside and outside the valley. Other recorded traditions also mention some sites where Buddha actually lived and preached, for example, the Venuvana and Tāpodārāma monasteries, both situated between the New Fort and the north gate, the Gridhrakūṭa hill, the name of one of the south-eastern hills enclosing Rājgir, and the Jīvakāmravana monastery at the foot of that hill. Interesting also is the group of caves, partly natural and partly artificial, in the outer scarp of the north-western hill, where the first Buddhist council is reported to have taken place shortly after the death of Buddha. The ruins of the stūpas built by Ajātaśatru and Aśoka, both outside the valley, can still be identified. But in all these cases exploration has as yet been very imperfect, and it is not known how much of ancient nucleus is hidden in the ruins as they stand at present.

Inside the valley, about a mile to the south of the north gate, stands a cylindrical brick structure now known as Maniyār Maṭh, the only site in Rājgir which has been cleared. The structure underwent many additions and alterations, and there is evidence that even before its initial erection the area occupied by it was occupied by independent stone structures. At one stage during the lifetime of the cylindrical building its outer face was provided with niches to contain stucco images of Hindu deities, stylistically ascribed to the fifth-sixth century. Surrounding it were many low brick platforms, one of which yielded a stone sculpture of the second century, depicting Nāga figures in the Mathurā style (below, chapter V) and inscribed with a record mentioning 'Maṇi-Nāga', a serpent-deity, whose shrine, according to the *Mahābhārata*, once stood at Rājgir. Of equal interest was the find of a large group of multi-spouted jars, the spouts often taking the form of serpent-hoods. They form a unique class in ancient Indian pottery, but it may be mentioned that somewhat similar jars are used even now in East India for serpent-worship.

The citadel of New Rājgir was partially excavated in 1905-06 and was found to contain brick buildings of three structural periods.

The earliest finds were some clay tablets bearing letters of the first or second century B. C., but it is not clear whether the lowest levels were touched by the excavator.

Pāṭaliputra

Pāṭaliputra (modern Patna) succeeded Rājgir as the capital of Magadha in the fifth century B. C. and has retained its political importance ever since. Under the Mauryas (fourth to second century B. C.) it became the imperial capital of India. Megasthenēs the Greek envoy in the court of the first Maurya emperor Chandragupta (c. B. C. 322 to 298), describes its glory at some length. According to him, the city, situated at the confluence of the Ganges and the Son, was 9 miles long and $1\frac{1}{2}$ miles wide and was surrounded by a wooden palisade pierced with loop-holes for the discharge of arrows, was flanked by a ditch for defence and sewerage and was surmounted by five hundred and seventy towers and sixtyfour gates.¹

It was believed at one time that the ruins of Pāṭaliputra had been washed away by the Ganges. Subsequent research disproved this view but at the same time revealed the difficulty of excavation here, as a substantial portion of the ruins was found to lie in the lowland with a high subsoil water-table in the southern outskirts of modern Patna.

In spite of the difficulties two such sites were partially explored during 1912-15 and 1926-27.² At Kumrāhār, one of these places, in an area of about 150 feet square, were first found ruined brick walls of late Gupta date (seventh century), with their bases about 7 feet below the present surface. Below them was a layer of charcoal and black ashes, about 1 foot thick, strewn amidst which were numerous pieces of stone fragments with a polish associated with Mauryan craftsmanship, occurring in large heaps at a distance of 15 feet from each other, centre to centre. As at least eight rows, with ten heaps in each, were found, it was surmised that there had existed here a Mauryan hall, resting on eighty or more pillars. The belt of charcoal and ashes were taken to indicate that the superstructure of the building, subsequently destroyed by fire, had been made of

¹ J. McCrindle, *Ancient India as described by Megasthenes and Arrian* (Calcutta etc., 1877), p. 66.

² *An. Rep. Arch. Surv. Ind.*, 1912-13 (1915), pp. 53ff.; *Progress Report, Arch. Surv. Ind., Eastern Circle*, 1912-13, pp. 55ff.; 1913-14, pp. 45ff.; 1915-16, pp. 27ff.; *Journal of the Royal Asiatic Society* (London), 1915, pp. 63ff.; *An. Rep. Arch. Surv. Ind.*, 1926-27 (1930), pp. 135ff. For earlier explorations, see *Arch. Surv. Ind. Rep.*, VIII (1878), p. 24; L. A. Waddell, *Report on the Excavations at Pāṭaliputra* (Calcutta, 1903).

massive wood. The pillars were thought to have been fixed to the superstructure by means of metal bolts which must have expanded with the heat of the conflagration and rent asunder the tops of the pillars; thus the vertical cleavage found in the pillar-fragments was explained.

It was further observed that below each accumulated heap of pillar-fragments there was a tubular hole, a few feet deep, filled up with ashes and stones. The conclusion was that with the disappearance of the pillars the cavities left by them were filled up by the substance lying at the top. It was further argued that as it was extremely difficult for human agency to pluck out, without disturbing the surrounding area, all the eighty or more pillars, it was certain that with the decay of the wooden supports the pillars began to descend downwards; the objects being of fixed weight, there was no increase in the lateral friction to restrain and bring to stop their downward progress. At one place the soil was bored down to a depth of 100 feet, and it was found that it was not hard enough to check the descending pillars.

Lying to the south of the 'pillared hall' were found seven wooden platforms, each 30 feet long, 5 feet wide and $4\frac{1}{2}$ feet high, and each with stumps of upright wooden posts at intervals, overtopping the actual platforms. The purpose of these platforms and their connexion with the 'hall' were difficult to determine.

Inconclusive as the available evidence from the excavation was Dr. Spooner tried to establish an exact parallelism, down to minute details, between the Persepolis and the postulated Pātaliputra palaces and made it the basis for many ethnic and linguistic speculations which need not be detailed here. Suffice it to say that his conclusions cannot be accepted without question. The problems encountered at Kumrāhār were unique and are well worth further investigation.

At Bulandībāgh, as excavated in 1912-16 and 1926-27, was found, below a level of brickwork of late Gupta date, a long wooden structure, constructed of two rows of upright planks, 15 feet high and set 14 feet apart from each other, and spanned at the bottom and top by similar planks, which were tenoned into the uprights at the ends (pl. XVI). The uprights were externally protected by horizontal planks fixed into them with wooden pegs. The inside was hollow and probably served as a passage. The structure was excavated for a length of 250 feet and was found to continue 'almost indefinitely'. Contemporary with it was a large wooden drain, 40 feet long, which crossed it at right angles and projected equidistantly on either side of it.

This unique structure is not unlikely to have formed part of the wooden palisade of Pātaliputra referred to by Magasthenēs (above, p. 57). At Gosain-khaṇḍa, about half a mile to the east of Bulandī-bāgh, was accidentally found in 1935 a similar structure, this time without the bottom-sleepers.¹

Various schemes of sewerage in Patna necessitated deep diggings and resulted from time to time in the discovery of enormous numbers of terracotta figurines, beads, etc. The very nature of the excavations precluded the possibility of properly recording these finds, and the proceeds form an indifferentiated mass, intrinsically very valuable but of little chronological significance. The terracottas have been ascribed, on stylistic grounds, to the Maurya, Śuṅga and, in lesser numbers, to Gupta periods and prove in bulk the subsoil possibilities of Patna.

Lauriyā-Nandangarh

Lauriyā, one of the two villages of the same name in District Champāran, North Bihar, contains, besides an inscribed pillar of Aśoka, fifteen stūpas in three rows, each row upwards of 2000 feet long; the first begins near the pillar and runs east to west, while the other two are at right angles to it and parallel to each other.²

In 1905-06 four of these mounds were excavated, two in each of the north-to-south rows. In the centre of two of them were found, at a depth of 6 to 12 feet (probably meaning 6 feet in one case and 12 feet in the other), a gold leaf with a female figure standing in frontal pose and a small deposit of burnt human bones mixed with charcoal. The core of the mound was, according to the excavator, built of layers of yellowish clay, a few inches in thickness, with grass and leaves laid between them. Further down, in one of them, he found the stump of a tree. His conclusions were that the mound had some connexion with the funeral rites of the people who erected them, and he found an explanation of the phenomena encountered by him in the cremation and post-cremation rites prescribed in the Vedas. On the basis of this hypothesis he identified the gold figure with Pṛithvī, the earth-goddess, and ascribed the mounds to the pre-Mauryan age. After him the mounds came to be known, rather loosely, as Vedic burial mounds.

A few mounds were re-examined in 1935-36, and all of them were found to be burial-memorials with burnt-brick basement, two

¹ *An. Rep. Arch. Surv. Ind.*, 1935-36 (1938), p. 54.

² *An. Rep. Arch. Surv. Ind.*, 1906-07 (1909), pp. 119ff.; 1935-36 (1938), pp. 55ff. For earlier explorations see *Arch. Surv. Ind. Rep.*, I (1871), pp. 68ff.; XVI (1883), pp. 104ff.; XXII (1885), pp. 47ff.

being faced with a brick-lining in a double tier, so that there was no justification for regarding them as mere earthen barrows. It was also pointed out that the gold leaves found by the previous explorer had their exact replica in the stūpa at Piprāwā (District Basti, U.P., below, p. 79), which was definitely a Buddhist stūpa of about 300 B. C. The respective Lauriyā stūpas might be of similar date; at any rate, there was nothing to connect them with Vedic burial rites. The layers of yellow clay, which had a share in the building up of the Vedic burial theory, were, according to the observations of the present writer, nothing but ordinary mud-bricks, husks and straw being a normal ingredient of ancient bricks.

The mound of Nandangarh, 82 feet in height and about 1500 feet in circumference, stands about a mile to be south-west of the Asoka pillar at Lauriyā, at the eastern edge of a brick fortification about a mile in perimeter and roughly oval on plan. Excavation of the mound during 1935-39¹ revealed a terraced stūpa with a polygonal basement, each quadrant having fourteen re-entrant and thirteen outer angles (pl. XVII). The walls flanking the first and second terraces followed the polygonal plan of the basement, but those pertaining to the upper terraces were circular. An extensive later restoration hid the four upper walls and provided new circular walls, but the polygonal plan of the walls of the basement and the first terrace remained unaltered.

The core of the stūpa consisted of a filling of earth, which yielded a large number of terracotta figurines, cast copper coins, a few punch-marked coins and pottery sealings of the second and first centuries B. C.; the structure therefore cannot antedate the first century B. C.

In the shaft dug into the centre of the mound through an evidently disturbed filling was found, at a depth of 14 feet, the remnants of a brick altar; it had been anciently truncated for reasons stated below. Further down, at a depth of 35 feet from the top, was found the top of an intact miniature stūpa, complete with a surmounting square umbrella. The stūpa was 12 feet in height and was polygonal on plan. An examination of the interior of the stūpa yielded nothing, but beside it, loose in the soil, was a tiny copper vessel with a lid fastened to it by a wire. Inside the vessel was a long strip of thin birch-leaf manuscript, which, having been squeezed into the vessel, was so fragile that it was impossible to spread it thoroughly. The bits that could be extricated were sufficient to show that the manuscript was that of a Buddhist text written in

¹ *An. Rep. Arch. Surv. Ind.*, 1935-36 (1938), pp. 63ff.; 1936-37 (1940), pp. 47ff.

characters of early fourth century. The fact that it was found not inside but beside the interior stūpa indicated that the stūpa had been re-consecrated about the beginning of the fourth century by devotees who had to cut through the upper altar and disturb the original earth-filling to gain access to it.

Sārnāth

The ruins at Sārnāth, District Banaras, attracted the attention of antiquaries from the early nineteenth century due to their representing one of the four holy places of Buddhism, Buddha having preached his first sermon here. Much destruction was done here by these early explorers¹ but enough was left to engage the attention of the Archaeological Survey of India during the early years of the present century. As a result of these explorations a large number of stūpas, temples and monasteries were brought to light.²

The remnants of the Dharmarājikā stūpa, devastated for quarry in 1794, when a relic-casket of green marble (never recovered afterwards) encased in a large round sandstone box had been found from the core of the stūpa, were systematically explored in 1907-08. The original stūpa, built by Aśoka, had a circular base made of wedge-shaped bricks and was enlarged several times afterwards, the last integument belonging to the twelfth century. Among other edifices was a brick temple, probably representing the 200-feet high Mūlagandha-kuṭī seen by Hiuen Tsang in the seventh century, which dated from Gupta times and had rectangular chapels on three sides of the square base, the fourth one having steps leading to the shrine. The monasteries, ranging in date from the fourth-fifth to the twelfth centuries, conformed to the general plan of this class of buildings. One of them, according to an inscription it contained, was built by the queen of Govindachandra of Kanauj (1114-55). Unlike Nālandā (below, p. 62), the temples and monasteries at Sārnāth were not systematically arranged in rows and lay scattered without any regular lay-out of plan. The re-builders of monasteries very often deviated from the plan and orientation of the underlying ones.

A remarkable monument at Sārnāth is the Dhamekh stūpa, a solid cylindrical structure, 93 feet in diameter at base and 143 feet in height, built partly of stone and partly of brick. The stone

¹ *Arch. Surv. Ind. Rep.*, I (1871), pp. 105ff.

² *An. Rep. Arch. Surv. Ind.*, 1904-05 (1908), pp. 59ff.; 1906-07 (1909), pp. 68ff.; 1907-08 (1911), pp. 43ff.; 1914-15 (1920), pp. 97ff.; 1919-20 (1922), pp. 26ff.; 1921-22 (1924), pp. 42ff.; 1927-28 (1931), pp. 95ff.; D. R. Sahni, *Guide to Buddhist Remains at Sārnāth*, 5th ed. (Calcutta, 1933).

facing of the lower part is adorned with delicate floral designs. About half a mile to the south of the main group of ruins and quite detached from it stands the Chaukhandī stūpa, a brick structure with an extant height of upwards of 80 feet. It is surmounted by an octagonal tower built by the Mughul king Akbar (1556-1605) to commemorate a visit paid to this place by his royal father Humāyūn (1530-40). There is no evidence for the date of the stūpa, but it is certainly earlier than the Dhamekh stūpa.

Sārnāth yielded a rich crop of stone sculptures. Apart from the famous lion-capital which once surmounted the now fragmentary Aśoka pillar standing on the site and a colossal Bodhisattva image of the reign of Kanishka imported from Mathurā, a large number of Buddha and Bodhisattva images found here, mostly of Gupta date, form a notable series. In fact the Gupta sculptures from Sārnāth have been primarily responsible for raising Gupta art to the place of honour that it now occupies in the art-history of India (below, chapter V).

Nālandā

The most renowned Buddhist establishment in India in the post-Christian period was Nālandā. Though its beginnings may have gone back, as literary traditions say, to the times of Aśoka, it began to assume importance from the time of the later Guptas (fifth-sixth century). At the time of Harsha of Kanauj (606-648), when the Chinese pilgrim Hiuen Tsang visited India, Nālandā was the chief focus of the Mahāyānā cult; the conduct of its monks was regarded as the ideal to be followed by the Mahāyāna world, and its teachings formed the code of Mahāyāna theology all over the Buddhist world. It received liberal royal patronage under Harsha and the Pāla rulers of East India (eighth to twelfth centuries) till the last days of Buddhism in India.

The ruins of Nālandā can be seen 6 miles to the north of Rājgir (above, p. 55) and consist of a series of brick temples and monasteries, a large number of which were excavated in 1916 and the following years¹ and were found to belong, in their present forms, mainly to the Pāla period. The highest and largest temple, standing in the south-west corner of the site, represented a series of seven accretions, each of which increased the dimensions of the temple horizontally and vertically. The object of worship, now missing,

¹ *An. Rep. Arch. Surv. Ind.*, 1915-16 (1918) onwards; A. Ghosh, *Guide to Nālandā*, 2nd ed. (Delhi, 1946). For earlier reports see *Arch. Surv. Ind. Rep.*, I (1871), pp. 28ff.; VIII (1878), pp. 79ff.; A. M. Broadley, *Ruins of the Nālandā Monasteries at Burgaon* (Calcutta, 1872).

was in all the phases of the temple placed in a shrine at the top of the structure and was approached by a flight of steps. The temple of the fifth period was elaborately ornamented with corner-towers and façades with niches containing stucco images of about the sixth century. The temples of the last four phases were each surrounded by a large number of votive stūpas (below, p. 78).

The other temples on the site had an unvarying plan consisting of a square shrine standing on a high square podium, the space between the edge of the podium and the shrine being used for circumambulation. The superstructures of the shrines were invariably missing, and no conjecture need be hazarded about their shape. One of the temples, outside the main row and not conforming to the general lay-out, had, fixed to its basement-wall, a row of sculptured stone panels representing a variety of subjects not necessarily connected with Buddhism.

All the temples, except the largest one mentioned above, generally showed two periods of construction, the latter usually confined to extensive restorations only. A votive stūpa attached to one of the temples and standing roughly on the level of the period of repairs had an inscription of the reign of Mahendrapāla (c. 890-910)—an indication of the date of the restoration of the temple.

The monasteries had a uniform plan of a square court surrounded on all sides by verandahs, each with a flanking row of living cells. Each monastery had been reconstructed several times, one of the causes necessitating this being destruction by fire, traces of which were abundantly met with during excavation. One of the monasteries yielded a copper-plate inscription stating that at the request of King Bālaputra of Sumatra, King Devapāla of East India (c. 815-854) endowed five villages for the upkeep of the monastery.

Among the small finds were a large number of stone images of Buddha and Buddhist deities, but considering the extent of the ruins large stone statues, common in other Buddhist centres, are remarkably few. The Nālandā artist seems to have taken delight in modelling small pieces which afforded scope for finery of work. Nālandā was also the seat of a flourishing school of casting bronze images, of which no less than five hundred have been recovered. The influence of the Nālandā bronze-art spread to the Eastern Archipelago, where some of the recovered Buddhist bronzes closely follow the Nālandā art-tradition.

Terracotta seals and plaques formed another large class of small finds. The seals consisted of royal seals (some of them, recovered from an ancient dump inside a monastery, being very important

for the reconstruction of the genealogy of the Gupta dynasty), official seals of the Nālandā monastery, seals of political and corporate bodies and private seals; ritual plaques with deeply-sunk impressions of Buddha and with the Buddhist formula or mysterious Buddhist texts were found deposited in some votive stūpas in large numbers.

Pahārpur

Under the Pālas, the Buddhist rulers of East India, many new Buddhist centres sprang up in Bihar and Bengal. One of these was Somapura, founded by King Dharmapāla (c. 770-815), the second Pāla king. Its ruins have been identified at Pahārpur (District Rājshāhi, East Bengal), where the extensive temple and monastery-site were excavated during 1926-34.¹ The colossal brick temple was cruciform on plan with an oblong projection on the north, the maximum length and breadth at the base being 500 and 300 feet (pl. XIX). The temple rose to a height of 100 feet or more in two or three terraces round a square brick frame filled with earth. The flanking walls of each terrace were decorated with rows of terracotta sculptured panels about three thousand in number, depicting Brāhmanical and Buddhist gods, folk-lore, mythology, composite animals, designs, etc. Sixty-three stone images of Brāhmanical deities were found in niches provided for the purpose in the basement-walls. Being of a somewhat earlier date they must have been re-used here for decoration.

The monastery at Pahārpur had an unusual plan in that it consisted of a row of cells built against the inner face of the compound wall of the temple and opening to the expansive open court at the centre of which the temple stood. The whole complex conformed to a premeditated plan practically undisturbed by subsequent restorations.

Nearby was a rectangular brick temple dedicated to the Buddhist goddess Tārā, situated in a compound studded with votive stūpas. The temple, according to a twelfth century Nālandā inscription, was founded by a monk called Vipulaśrīmitra.

The terraced temples of North India, like the main Pahārpur temple and the temples at Ahichchhatrā (below, p. 66), were the prototype of similar class of temples found in Burma, Java and Cambodia (below, chapters III and IX).

¹ K. N. Dikshit, *Excavations at Pahārpur, Bengal*, Mem. Arch. Surv. Ind., no. 55 (1938).

Ahichchhatrā

Ahichchhatrā is mentioned in the *Mahābhārata* as the capital of North Pāñchāla (northern Ganges-Jamna Doab). In historical times it gained prominence in the first century B.C. under the Pāñchāla rulers known to us from their coins. There is little literary or epigraphical record about the history of the place. Hiuen Tsang saw here ten Buddhist monasteries and nine Brāhmanical temples. By the eleventh century the capital of Pāñchāla had been shifted to Vodāmayūtā (modern Badāun, U. P.).

The ruins of Ahichchhatrā, in the village Rāmnagar, District Bareilly, U. P., consist of a brick fortification with a perimeter of $3\frac{1}{2}$ miles, enclosing a series of rolling mounds, of which the highest two mark the sites of temples. About two miles to the west of the fortified area are the ruins of some stūpas, one of which is supposed to have been built by Aśoka.

The Archaeological Survey of India excavated at selected places within the fort during 1940-44 (pl. XX),¹ and it being the only extensively excavated historical city-site in the Gangetic valley, the results are important as a starting-point.

In the main excavated plot the first occupation was marked only by pits full of pottery dug into the natural soil. The next two periods (Periods II and III) were characterized by mud buildings, all crushed, a distinctive pottery in the form of shallow dishes in grey ware and coins of the uninscribed cast type. Period IV marked the first brick buildings on the site; the first appearance of Pāñchāla coins of the first century B.C. and the disappearance of the earlier grey pottery. The next period (V) was a continuation of Period IV; no coins later than those of the Pāñchālas were found. Period VI was represented by several blocks of single contiguous chambers of fine brickwork. It yielded Kushan coins for the first time and had a distinctive type of water-vessel of rough ware.

The remains of Period VII were a temple-complex consisting of low brick shrines within an enclosure of irregular shape. At one corner of the temple-compound was found a good number of large-size terracotta images of Brāhmanical deities, stylistically ascribed

¹ The report of the excavation has not yet been published. For pottery of Ahichchhatrā, see A. Ghosh and K. C. Panigrahi, 'The Pottery of Ahichchhatrā', *Ancient India*, no. 1 (1946), pp. 37ff.; for terracottas, V. S. Agrawala, 'The Terracottas of Ahichchhatrā', *ibid.*, no. 4 (1947-48), pp. 104ff. See also B. C. Law, *Pāñchālas and their capital Ahichchhatra*, Mem. Arch. Surv. Ind., no. 67 (1942). For previous exploration see *Arch. Surv. Ind. Rep.*, I (1871), pp. 255ff.; *Progress Report of the Epigraphical and Architectural Branches of the North-Western Provinces and Oudh*, 1891-92 (1894), pp. 1ff.

to the Gupta age. Coins of Achyu (identified with Achyuta, defeated by Samudragupta in c. 350) made their appearance for the first time in the lower levels of this period.

Period VIII consisted of poor structures situated amidst thick layers of ashes and of a large number of cylindrical pits filled with pottery and probably representing potters' kilns. A class of pottery, small moulded bowls with decorations in relief, was distinctive of this period. In Period IX the houses were poor and were mostly built of fragmentary bricks collected from old débris. Large plots of land were left unoccupied. Everything pointed to a general decay in the life of the city. The date of the period was fixed by two hoards of debased silver coins of Ādivarāha and Vighraha (ninth-tenth centuries) found buried below the walls of this period.

The main excavation at Ahichchhatrā thus revealed a cross-section of the life of the city from its beginning in the third century B.C. to its end in the tenth-eleventh century A.D. Though nothing was found to take back the history of the site to the days of the *Mahābhārata*, a stratigraphic basis for dating the pottery and terracotta figurines was established and a start was made for the classification of historical archaeology in the Gangetic valley.

The two conspicuous brick temples mentioned above (p. 65) belonged to the class of terraced temples (above, p. 64 and below, chapters III and IX), each terrace made of foundation-cells round a square frame, both filled with earth (pl. XXI). Both the temples underwent many restorations and extensions resulting in increases in their dimensions. One of them was founded on a layer of typical Period VI (Kushan) pottery and could not therefore have begun before the early Gupta age (fourth century). Both the temples remained in use till the desertion of the city. Loose in the débris were found a large number of carved bricks and a few terracotta sculptured panels which once adorned the walls of the temples.

The fortification of the city was partially excavated at two places, and it was found that below the top brick wall there were two successive earthen ramparts. From the fact that grey pottery, characteristic of the site down to 100 B.C., appeared in the core of the heaped-up material and that later pottery was absent, it seemed likely that the original rampart was erected shortly after that date and might be attributed to the Pāñchāla rulers, with whom were also coeval the earliest brick buildings on the site (above, p. 65).

A feature of the site was a partition-wall which divided the city in two unequal halves, the eastern and smaller half being deserted after the setting up of the wall in about the seventh century.

Śisupālgarh

Near Bhuvanesvar in Orissa, famous for its temples (below, chapter III) and about a mile from Dhauli, one of the rock-edict sites of Aśoka, lies the ruined fort of Śisupālgarh. It has been identified with Tosali mentioned in Aśoka's edicts or with Kaliṅganagara mentioned in the record of King Khāravela (first century B.C.) inscribed in a cave at Khandagiri, also near Bhuvanesvar, but both these identifications are at present uncertain. Surface-finds from the site include terracotta ear-ornaments and clay bullae struck in imitation of Roman coinage. Sixteen monolithic pillars at the centre of the mound indicate the prior existence of a pillared hall.

Closely-observed excavations at Arikamedu on the east coast of India and at Brahmagiri in the northern part of Mysore State (below, pp. 73 and 74) had accurately dated two classes of pottery, the rouletted ware and the black-and-red 'megalithic' ware, both fairly widespread in South India. As the first step towards applying this chronological precision to northern sites, the fort of Śisupālgarh was partially excavated in 1948¹.

The defences, as excavated, were separated from the natural soil by 5 to 6 feet of occupational deposits and consisted of heaped-up clay 110 feet in basal width and 25 feet in extant height (pl. XXII). In the next phase the top of the rampart was reinforced by a coating of laterite gravel. In the third phase two parallel brick walls were built at the top of the laterite and the intervening space was filled up with earth. In the last phase, belonging to a period when the previous fortification had completely decayed, brick revetments with stepped exterior were built against the slope of the defensive mound. The fixed points in the chronology of the defences were: (1) the first appearance of the black-and-red ware of the 'megalithic' class, the origin of which is dated at Brahmagiri to the last quarter of the third century B.C.; (2) the first occurrence at the end of the third phase of the rouletted ware, ascribed to the first half of the first century A.D. on Arikamedu evidence; and (3) the occurrence, in deposits later than the third phase and earlier than the fourth, of a copper coin of Huvishka (second century) and of a legended gold coin of the latter half of the third century. Between the level of the last-mentioned coin and the top of the mound lay a 4-to-5-feet thick deposit. The defences therefore were first erected towards the end of the third century B.C. and continued in existence till the fourth century A.D.

¹ B. B. Lal, 'Śisupālgarh, 1948', to be published in *Ancient India*, no. 5.

The excavated western gateway was flanked on either side by an L-shaped flank. There were two gates near the ends of the longer arms of the structure and an ancillary passage through a gap in one of the flanks. The whole arrangement showed careful planning to check the entrance of intruders.

A small area in the heart of the mound representing the habitation-site was also excavated and three occupational periods identified. On virtually the same grounds as the defences, and on the consideration that the occupation on the site had started before the erection of the mud rampart, the beginning of the earliest period may be ascribed to c. 300 B.C. and the end of the site to c. A.D. 350.

A few sherds of a most distinctive class of ware bearing a shiny black polish and of thin fabric, found on many North Indian sites in levels ranging from the fifth to the second century B.C.¹, were recovered at Śisupālgarh from the same horizon as the rouletted ware. From their present context they appear to be survivals; nonetheless, their occurrence connects the Śisupālgarh pottery with the North Indian group, the connexion with the South being provided by the 'megalithic' and rouletted wares.

Other North Indian sites

Bhītā.—The mounds at Bhītā, District Allahabad, were partially explored in 1909-10.² The excavated brick structures belonged to five periods, the last of which was ascribed to the Gupta age. Below the lowest brick-period there were thick occupational deposits, believed to go back to a date much earlier than the Mauryan epoch, though the basis of the dating is not clear.

The site seemed to represent a township inhabited by a mercantile community. The small finds included sealings, both mercantile and religious, mostly of Kushan and Gupta dates, tribal and Kushan coins (first century B.C. to second century A.D.) and terracotta figurines of comparable date. A well-observed re-examination of the site, particularly of the lower strata, may yield valuable material relating to the pre-Mauryan period.

Basārī.—One of the famous cities in East India at the time of Buddha and afterwards was Vaiśālī, the capital of the oligarchical clan of the Lichchhavis of North Bihar. The ruins of the city have been

¹ *Ancient India*, no. 1 (1946), pp. 55ff. Previously the pottery was regarded as Greek in origin but now it is definitely known that its chief focus was the Gangetic valley, though it is found widely distributed in North India. It has been christened 'northern black polished ware'.

² *An. Rep. Arch. Surv. Ind.*, 1909-10 (1914), p. 40; 1911-12 (1915), pp. 30ff.

identified with a fort, measuring 1770 by 800 feet, at Basārḥ, District Muzaffarpur, which was partially excavated in 1903-04 and 1913-14.¹ The structural remains, of two or three periods, were poor and fragmentary, though the site was found to be rich in terracotta sealings and figurines ranging in date from the second century B.C. to the fifth century A.D.

About 2 miles to the north-west of the fort stands an uninscribed pillar of Aśoka and a ruined stūpa, also believed to belong to that ruler.

Saheṭh-Maheṭh.—The capital of Kosala (Oudh) at the time of Buddha was Śrāvastī, adjoining which was the Jetavana monastery where Buddha spent many a year of his life. Its identification with the remains in the twin villages Saheṭh-Maheṭh (Districts Gondā and Bahrāich, U. P.) was confirmed in the excavations of 1907-08 and 1910-11,² when it was also found that Saheṭh represented Jetavana and Maheṭh, with a rampart, Śrāvastī proper. The latter, in addition to ruined houses, contained brick stūpas and shrines, in the débris of one of which was found a group of more than three hundred terracotta panels of Gupta date representing scenes from the *Rāmāyaṇa*. No building here could be regarded as earlier than Kushan times, and many were much later.

Kasiā.—One of the four chief holy places of Buddhism was Kuśīnagara, the death-place of Buddha, identified with Kasiā (District Gorakhpur). Its ruins were explored in 1876, when, among other things, the main Nirvāṇa stūpa was completely exposed.³ Exploration was resumed on the site in the early years of this century,⁴ and in a shaft driven through the centre was found a copper-plate bearing a Buddhist text of the fifth century, partly inscribed and partly written with black ink. Among other remains of the place were monasteries and shrines generally of Gupta age and a monastery erected in the twelfth century by a local Kalachuri chief.

¹ *Ibid.*, 1903-04 (1906), pp. 81ff.; 1913-14 (1917), pp. 98ff. For previous reports see *Arch. Surv. Ind. Rep.*, I (1871), pp. 55ff.; XVI (1883), pp. 6ff.

² *Arch. Surv. Ind. Rep.*, I (1871), pp. 330ff.; XI (1880), pp. 78 ff; *An. Rep. Arch. Surv. Ind.*, 1907-08 (1911), pp. 81ff.; 1910-11 (1914), pp. 1 ff; B. C. Law, *Śrāvastī in Ancient Literature*, Mem. Arch. Surv. Ind., no. 50 (1935).

³ *Arch. Surv. Ind. Rep.*, I (1861), pp. 76ff.; XVIII (1883), pp. 55ff.; XXII (1885), pp. 16 ff.

⁴ *An. Rep. Arch. Surv. Ind.*, 1904-05 (1908), pp. 43ff.; 1905-06 (1909), pp. 61ff.; 1906-07 (1909), pp. 43ff.; 1910-11 (1914), pp. 63ff.; 1911-12 (1915), pp. 134ff.

Mathurā.—No standing monument at Mathurā (West U. P.), an important political and religious centre from early times, belongs to the pre-Muslim period, but, consistent with its antiquity, the place is studded with ruins which have yielded an enormous number of stone images, terracotta figurines, coins and other objects of Kushan and later dates. One of the mounds, representing the only known Jaina stūpa, was cleared in 1900. The excavator died shortly afterwards, and the excavated remains completely disappeared in no time, with the result that all that is now known about this unique monument is a series of remarkable Jaina sculptures of Kushan age.¹

Sites in Jaipur State.—The small site of Bairāt, the findspot of a stone edict of Aśoka, was excavated by Jaipur State in 1935.² Among the important finds were fragments of two Aśokan pillars and a circular temple and monastery, both believed to have been erected by Aśoka. The temple, which might in reality have been a stūpa, consisted of a double circular wall separated by a circumambulation-path, the inner wall being made of panels of brick-work alternating with octagonal panels of wood (below, p. 80). The discovered coins included punch-marked and Indo-Greek types.

The ruins at Sāmbhar (ancient Śākambharī) were explored in 1936-38.³ Forty-five residential houses, belonging to six structural periods and dated, with the help of associated punch-marked, Indo-Greek, Yaudheya and late Indo-Sassaniani coins, were exposed.

In 1938-40 the site of Rairh was excavated.⁴ The buildings, of three periods, were assigned dates ranging from the third century B.C. to the second century A.D. The finds included five hoards of punch-marked coins, Mālava coins, coins of the Mitras of Kanauj and Mathurā, seals of the first-second century and terracotta plaques of Śuṅga and post-Śuṅga dates.

Bāngarh.—Bāngarh, District West Dinājpur (West Bengal), the site of Koṭivarsha, a well-known town of ancient Bengal, was excavated by the University of Calcutta during 1937-41.⁵ Brick structures of five periods, ranging from the second century B.C. to the tenth-eleventh century A.D., were found, of which the second period ('fourth stratum' from the top) had prosperous brick houses

¹ V. A. Smith, *The Jain Stūpa and other Antiquities of Mathurā*, Arch. Surv. Ind., New Imperial Series, XX (Allahabad, 1901).

² D. R. Sahni, *Archaeological Remains and Excavations at Bairāt* (Jaipur).

³ D. R. Sahni, *Archaeological Remains and Excavations at Sāmbhar* (Jaipur).

⁴ K. N. Puri, *Excavations at Rairh* (Jaipur).

⁵ K. G. Goswami, *Excavations at Bāngarh* (Calcutta, 1948).

and a brick fortification. The other periods were represented by brickwork of varying quality. Among the important portable antiquities were terracotta figurines of Śuṅga and subsequent ages and punch-marked and uninscribed cast coins.

Rājghāt.—The city of Banaras (ancient Vārāṇasī) in the heart of the Gangetic valley is known from literature to be of great antiquity, but till a few years back there was no archaeological evidence to establish its antiquity. In 1940 Railway contractors, digging earth from a portion of the plateau on the bank of the Ganges in the northern outskirts of the city, found brick buildings and a mass of small objects, including sealings, pottery and terracotta figurines. The structures and débris down to a depth of 13 feet from the top of the plateau were completely removed by the workmen before the Archaeological Survey of India could reclaim a portion of the devastated area for examination.¹ Within this area, the topmost period consisted of eight blocks of buildings of which the central one, with substantial brickwork, was an elaborate temple with a hall supported on twelve pillars. A systematic exploration of the extensive ruins at Rājghāt is likely to produce valuable material for the archaeology of the Gangetic valley from the Mauryan or even pre-Mauryan times to the twelfth century A.D.

Kauśāmbī.—According to literary tradition the capital of the Pāṇḍava rulers was shifted from Hastināpura (identified with some unexcavated mounds in District Meerut) to Kauśāmbī five generations after the *Mahābhārata* war. Kauśāmbī continued to be one of the leading political centres of North India till after the Christian era.²

The ruins of Kauśāmbī have been identified at Kosam on the northern bank of the Jamna in District Allahabad. The massive fortifications rise to an average height of 80 feet above the surrounding plains and enclose an area of about one square mile. In 1937-38 a small-scale excavation revealed buildings of different periods, the earliest of which might be of Mauryan date.³ In 1948-49 the University of Allahabad, with technical assistance from the Department of Archaeology, excavated a small area occupied by brick

¹ A preliminary report on the excavation appears in Krishna Deva, 'Excavations near Rājghāt near Benares', *Annual Bibliography of Indian History and Indology*, III (Bombay, 1944), pp. xli ff. For the terracottas see V. S. Agrawala, 'Rājghāt Terracottas', *Journal of U. P. Historical Society*, XIV (1941), pp. 1ff.

² B. C. Law, *Kauśāmbī in Ancient Literature*, Mem. Arch. Surv. Ind., no. 60 (1939).

³ Report not published.

buildings of six periods.¹ The 20-feet deposit between the earliest building-level and the natural soil, as tested in two small cuttings, could be divided into two phases, the latter of which contained the 'northern black polished ware' (above, p. 68n.). That the early phase was pre-Mauryan in date thus appears very likely, but the result has yet to be confirmed by further work.

No site in India is richer in surface-finds than Kauśāmbī. Enormous numbers of coins, beads and terracotta figurines have been collected from the surface and have found their way to the museums of India and abroad.

SITES IN THE DECCAN AND SOUTH INDIA

Nāgārjunikonda

The stūpa at Amarāvati, District Guntur (North Madras Presidency), was razed to the ground in 1797 by a local landlord and is now represented only by a series of sculptured marble slabs preserved in different museums (below, chapter III). The discovery, in 1926, of another group of Buddhist ruins of comparable date at a neighbouring place, Nāgārjunikonda (below, p. 81), affords some compensation for the loss of the Amarāvati monument. These ruins were excavated in 1927 and the following years and were found to contain a main stūpa, eight smaller stūpas, two apsidal temples, three monastic sites, a palace-site and a stone-built wharf on the bank of the river Krishnā.

The main stūpa, like the other stūpas at Nāgārjunikonda, had the plan of a central brickwork hub, circular or square, with radiating brick walls, the space between the walls being filled up with earth before the outer casing was built up. The dome rested on a low circular platform with rectangular projections at the cardinal points. The drums of some of the stūpas were decorated with sculptured slabs depicting Buddhist stories, representations of stūpas, etc.

The temples were simple apsidal brick structures. The inner face of the walls were plain, while the outer one was ornamented with rows of simple mouldings. The monastic establishments each had, besides living apartments, an attached apsidal temple and a stūpa. The riverside wharf was a long rectangular structure covered with a wooden roof and probably served as a warehouse. The palace-site has not yet been excavated.

¹ Information from Mr. B. K. Thapar, who was deputed by the Department of Archaeology to assist the University of Allahabad.

The monuments of Nāgārjunikonda were, as indicated by recovered inscriptions, built in the second-third century during the reign of the Ikshvāku rulers of South-east India.

Arikamedu

The city-site at Arikamedu on the east coast of India, 2 miles south of Pondicherry, attracted the attention of the French authorities of Pondicherry particularly for its yield of objects with Roman affinity, including intaglios and pottery. As little definite was known about the early historical archaeology of South India, the discovery of such objects promised to be of great importance in dating associated Indian objects. Roman coins, either in hoards or singly, had no doubt been found in India, particularly in the South, in large numbers, but being mostly stray finds their dating value was very limited.

The Archaeological Survey of India excavated at selected places at Arikamedu in 1945 with remarkable results.¹ In one of the excavated sectors was found a riverside 'warehouse' and in another, structures of four periods, including two small tanks presumably used for industrial purposes. More important than the structural remains, however, were the small finds, some of which were imports from the Mediterranean world and therefore of immense value for dating purposes. To this class of finds belonged glass bowls, one of them 'pillared' (pl. XXIII), a common type in the Roman world; two-handled amphorae with pointed bottom; a Roman pottery lamp; fragments of the well-known red-glazed pottery bearing potters' stamps and manufactured in the latter half of the first century B.C. and first half of the first century A.D. mainly at Arezzo in Rome and hence known as 'Arretine' ware (pl. XXIII). Another type of pottery, a thin, well-burnt blackish dish with a rouletted pattern at the inner base, offered further illustration of Roman contact in that it showed the utilization of the Roman device of rouletting on pots of local type and ware.

All the Roman contacts at Arikamedu point to the first century A.D. as the date of the beginning of the settlement at the place. It was evidently one of the marts on the Coromondal coast mentioned by Roman geographers as carrying on trade with the Mediterranean world, and is very likely to represent Podoukē, one of the three eastern ports mentioned in the *Periplus of the Erythraean Sea*, a Roman work of the first century A.D.² Apart from being the first

¹ R. E. Mortimer Wheeler, A Ghosh and Krishna Deva, 'Arikamedu, an Indo-Roman Trading-Station on the East Coast of India', *Ancient India*, no. 2 (1946), pp. 17ff.

² H. Schoff, *The Periplus of the Erythraean Sea* (London, 1912), p. 242.

identified Indo-Roman trading-station, Arikamedu is important for providing data, in the form of datable Roman objects, for dating the mass of Indian objects found in association with the former. The new knowledge about the date of the rouletted dish mentioned above has already been applied for dating sites situated much further inland, viz. Brahmagiri and Chandravalli in Mysore State (below), and further north, viz. Śisupālgarh in Orissa (above, p. 67).

Other early historical sites in the Deccan

The story of Brahmagiri, Mysore State, from the chalcolithic to the pre-Āndhra period has been told above (pp. 27, 28 and 39). The Āndhra strata (first century A.D.), as found in the same 1947-excavation,¹ overlapped the upper 'megalithic' strata and contained fragmentary rubble walls and a rubble-lined road. The culture was distinguished from the preceding megalithic culture by its more sophisticated pottery-types produced on the fast wheel and often salt-glazed and by the gradual disappearance of the black-and-red 'megalithic' pottery (above, p. 67). Rouletted ware, similar to that found at Arikamedu in association with the Arretine ware (above, p. 73) and therefore dated the first half of the first century, was found even in lowest Āndhra levels. Another characteristic class, found on many sites in the Deccan but dated for the first time at Brahmagiri, was formed by vessels of different types decorated with rectilinear or slightly curvilinear pattern made of a paste of kaolin or lime and washed with russet-coloured ochre. Thus, the appearance of the Āndhra culture at Brahmagiri was marked by the appearance of new ceramic traditions.

To get confirmation of the evidence derived from Brahmagiri a few cuttings were made in the same season at Chandravalli, 45 miles to the south-west of Brahmagiri, where the Mysore Archaeological Department had done some exploration in 1929² and had found small cists with the 'megalithic' pottery and a large number of Sātavāhana coins of the first-second century, one or two denarii of Augustus (23 B.C.—A.D. 14) and three denarii of Tiberius (A.D. 14—37). None of these coins, however, came from inside the cists, and the evidence suggests that the coin-bearing (Āndhra) strata followed in close succession to the cists.

In the cuttings of 1947 no cist was found, but the earliest pottery on the site was 'megalithic', which in the upper layers was

¹ *Ancient India*, no. 4 (1947-48), pp. 180ff.

² M. H. Krishna, *Excavations at Chandravalli*, Supplement to the Annual Report of the Archaeological Department of Mysore State, 1929 (1931).

overlapped by the russet-coloured 'Āndhra' pottery and ultimately disappeared, making room for the latter and other forms of pottery including 'rouletted' ware, also of Āndhra date. The sequence of cultures and pottery-types was essentially the same as at Brahmagiri. The coins recorded in 1947 included a Roman coin of Tiberius, a silver punch-marked coin and more than fifty provincial Sātavāhana coins.

Other Āndhra sites in the Deccan are the imperfectly excavated Kondāpur (Hyderabad State) where the Hyderabad Archaeological Department worked in 1941¹ and which yielded two thousand punch-marked and Sātavāhana coins, and Māski, where the same Department found in 1935-37² a set of objects very much like the Brahmagiri one, suggesting a similar sequence of cultures, though the stratigraphic records, as published, are not at all clear.

A. GHOSH

¹ G. Yazdani, 'Excavations at Kondapur,' *Annals of Bhandarkar Oriental Research Institute*, XXII (1944), pp. 171ff.

² *An. Rep. Arch. Deptt. H. E. H. Nizam's Dominions*, 1935-36 (1938), pp. 22 and 28ff.; 1936-37 (1939), pp. 14ff. The stratigraphic evidence has been criticized by D. H. and M. E. Gordon, 'The Cultures of Maski and Madhavpur', *Journal of the Royal Asiatic Society of Bengal*, IX (1943), pp. 83ff.

CHAPTER III

STŪPA AND TEMPLE ARCHITECTURE

THE history of Indian architecture starts from the Harappā civilization which shows a plain utilitarian building-art mainly represented by houses, fortification and public buildings like the Great Granary and the Great Bath, which are all built principally of bricks. It is not yet possible to recognize any structures of a distinctive religious character in this civilization, although some suggestions have been made to this end¹. From the protohistoric period we at once come down to the early historic period, showing religious monuments of a developed type, as the intervening links still remain untraced. These historical monuments are of two types, rock-cut and structural, the latter comprising two principal varieties of buildings, viz. the stūpa and the temple. The stūpa was a tumulus and obviously had an humble origin from a pile, while the earlier structural temples, like the rock-cut ones, were manifestly derived from wood-architecture. In subsequent times, even when the structural forms were fully evolved, the fascination of the Indian architect for the elementary rock-cut or wooden forms persisted and often manifested itself in one form or the other. Another characteristic which marks Indian architecture is its non-sectarian character. No particular building-mode was the monopoly of any sect, although some styles found special favour with certain sects. The development of architecture was mainly regional and was the concrete expression of the religious and emotional life of the people, expressed through a local building-style which was considerably moulded by varying local conditions. Another distinguishing feature of Indian architecture is the predilection for massiveness and volume which made it essentially trabeate in character. But by far the most remarkable feature of the religious buildings of India is the harmonious integration of plastic decoration with the architectural scheme.

With the probable exception of Piprāwā stūpa (below, p. 79), the earliest examples of religious architecture in India are attributable to Aśoka (273-232 B.C.) who exerted his energies and the resources of his

¹ There is no definite evidence of the presence of any religious structures in the Harappā civilization beyond the doubtful representation of a shrine on a terracotta sealing from Harappā (M. S. Vats, *Excavations at Harappā*, II (Delhi, 1940), pl. XCIII, 307). The suggested religious character of some buildings at Mohenjo-daro (J. Marshall, *Mohenjo-daro and Indus Civilization*, I (London, 1931), pp. 22-26) including the Pillared Hall in the L area and the Great Bath in the SD area is not yet proved. :

state to the propagation of Buddhism. He is credited with the authorship of three types of religious monuments, viz. (1) pillars, (2) stūpas, and (3) rock-cut caves, besides stray architectural members, including a monolithic railing at Sārnāth and the altar at Bodh-gayā. He set up at least thirty pillars including ten inscribed ones on sites with Buddhist association, which are scattered in Muzaffarpur and Champāran Districts of Bihar, in the Nepal Tarāi, at Sārnāth near Banaras and Kauśāmbī near Allahabad, in the Meerut and Ambala Districts, and at Sānchī in Central India. Made of Chunār sandstone and bearing a highly lustrous polish characterizing all Mauryan stone-work, the pillars are tapering monolithic shafts, between 30 to 40 feet high, with an ornamental capital, surmounted by powerful animal-sculpture (below, chapter V). Distinguished by dignity, exquisite finish and symbolical significance, these free-standing columns probably formed part of a larger architectural scheme on sites like Sānchī and Sārnāth. The stūpas and rock-cut caves attributed to Aśoka will be noticed below.

In the following pages is briefly traced the development of the three principal forms of Indian religious architecture, viz. stūpa, rock-cut cave and temple, in separate sections.

1. STŪPA-ARCHITECTURE

The stūpa originated as a piled-up burial-tumulus and constituted the most characteristic monument of Buddhist religion, although Jaina stūpas are also known¹. Symbolizing the decease (*parinirvāṇa*) of Buddha, the stūpa came to be looked upon as an object of Buddhist cult-worship by the time of Aśoka. According to tradition this king erected as many as 84000 stūpas over the body-relics of Buddha which were originally enshrined in eight or ten monuments. Stūpas were built not only to enshrine the relics of Buddha and Buddhist saints but also to commemorate spots and events of religious significance. In course of time, the dedication of stūpas, with or without relics, was considered an act of highest piety and numerous 'votive' stūpas of smaller size, some containing scores or hundreds of clay replicas of tiny stūpas (as at Nālandā where each of these replicas was also inscribed with the Buddhist formula) were put up around large Buddhist stūpas or temples.

The stūpa was a solid structural dome (*aṇḍa*) usually raised on one or more terraces and invariably surmounted by a railed pavilion (*harmikā*) from which rose the shaft of the crowning umbrella

¹ V. A. Smith, *The Jain Stūpa and other Antiquities of Mathurā* (Allahabad 1901), pp. 1-13, pls. I-V.

(*chhatra*). The stūpas had one or more circumambulatory passages (*pradakshina-patha*) which were usually enclosed by railing (*vedikā*). The earlier stūpas were hemispherical in shape with a low base, while the later ones assumed an increasingly cylindrical form with a well-developed drum. In the later examples, which tended to be more ornate, the base-terraces and the umbrellas were multiplied.

The only stūpa of a probable pre-Aśokan date is that at Piprāwā¹ in Basti District of United Provinces which yielded among its relics a vase, inscribed with characters believed to be pre-Aśokan, and a figure in gold relief, resembling the mother-goddess gold-figures from Nandangarh² in Champāran District. The stūpa is built of large bricks (15 to 16 inches $\times$ 10 to 10½ inches $\times$ 3 inches) and has a diameter of 116 feet and an extant height of 21 feet, indicating a low ratio of height to diameter, which is a sign of antiquity. According to the inscription the relics found in the stūpa pertained to Buddha himself.

A series of low flattish stūpas, composed of mud or mud-bricks with baked brick-revetments, standing at Lauriyā (above, p. 59) may be roughly contemporary with the Piprāwā stūpa, though they did not yield any datable evidence, apart from the mother-goddess gold-figures referred to above.

Aśoka is credited with the construction of the first stūpas at Sānchī and Sārnāth, though tradition assigns him many other stūpas including the Dharmarājikā at Taxila (above, p. 53).

The original stūpa at Sānchī attributed to Aśoka was a low brick structure, of almost half the diameter of the present stūpa (pl. XXV) in the core of which it is now concealed. This structure, built of large bricks, was much damaged when excavated. It was presumably hemispherical in shape with a raised terrace at the base, enclosed by a wooden railing, and a stone umbrella at the summit, of which pieces were recovered on the site. The only other structure which went with this was the Aśokan pillar which stands at its original place near the southern gateway.

About a century later, the original brick-stūpa was enveloped in a stone casing and was enlarged to its present dimensions (diam. over 120 feet; ht. 54 feet) to form an almost hemispherical dome truncated near the top. At the same time a lofty terrace, approached by a double flight of steps on the southern side, was built against its base to serve as a processional path. The masonry of the

¹ W. C. Peppe and V. A. Smith, 'The Piprahwa Stupa, containing relics of Buddha', *Journal of the Royal Asiatic Society*, 1898, pp. 573ff.

² *An. Rep. Arch. Surv. Ind.*, 1906-07 (1909), p. 122, fig. 4.

dome and terrace was originally covered with plaster decorated with colour. At the summit of the stūpa was built a diminutive square railing with a pedestal from which rose the shaft of the triple umbrella that crowned the superstructure. Another paved processional path was provided on the ground-level which was enclosed by a plain, massive, 11 feet high stone balustrade. This balustrade, consisting of tenoned uprights, triple cross-bars of a lenticular section and copings with scarf joints, was obviously copied from a wooden prototype and formed the gift of individual donors.

It was in the latter half of the first century B.C. that the four lavishly-carved gateways were erected, one in each cardinal direction, as a magnificent entrance to this imposing monument. These were manifestly conceived in wood and executed in stone, and each of them, 34 feet high and 20 feet wide, was alike in design and consisted of two square uprights, surmounted by capitals which in their turn supported three architraves with a row of sculptured balusters in between. Each of them was carved on both faces with the Jātaka tales, scenes from the life of Buddha and other miscellaneous motifs, the entire composition being significantly crowned by the symbol of *dharmachakra*.

The nucleus of the Dharmarājikā stūpa at Sārnāth was probably built by Aśoka and consisted of a hemispherical brick-stūpa (diam. 60 feet) with a low terrace at the base. A monolithic railing with a Mauryan inscription and polish, found near the stūpa, presumably formed its crowning *harmikā*. The inscribed Aśokan pillar with the celebrated lion-capital (below, chapter V), which was recovered not far from the stūpa, appears to have formed part of its architectural scheme. The original stūpa was encased in six successive stūpas, each larger than the other, which range in date from the second to twelfth century.

Remains of a unique type of stūpa-shrine of a Mauryan date have been recovered at Bairāt¹ in Jaipur State (above, p. 70). Of the brick stūpa only bits of foundation have survived together with pieces of a stone umbrella (diam. more than 3 feet) and a bowl, bearing the distinctive Mauryan polish, the former being probably the crowning member of the stūpa. The main interest of the monument lies in the enclosing circular shrine (diam. 27 feet) which was made of lime-plastered panels of brickwork alternating with twentysix octagonal pillars of wood. The shrine was entered from the east through a small portico, supported on two wooden pillars and was surmounted by a 7-feet wide circular processional path with an opening on the

¹ D. R. Sahni, *Archaeological Remains and Excavations at Bairat*, pp. 28ff.

east, the whole being enclosed at a later date within a rectangular compound (70 feet $\times$ 44 feet), containing an open space for assembly in front of the entrance. This stūpa-shrine resembled in plan and design a circular chaitya-cave in the Tulajā-lena group at Junnār below, p. 85), dating from c. first century B.C.

Of the Bharhut stūpa in Central India the surviving remains mainly consist of portions of the enclosing stone railing, dating from c. 125 B.C., and the eastern gateway, erected fifty years later. These are of the same design as the Sāncī railings and gateways and are richly carved with bas-reliefs. The stūpa, of which all traces have now disappeared, was constructed of plastered brick-work. It had a diameter of 67 feet and contained recesses for lamps at the base¹.

At Nandangarh in North Bihar occurs a unique type of brick stūpa built on multiple polygonal terraces with re-entrant angles (above, p. 60). This stūpa is not earlier than 100 B.C. (may be later) and was the precursor of a style of terraced stūpa-architecture which culminated in the celebrated stūpa of Borobudur in Java, dating from c. 800.

Between the first century B.C. and third century A.D. were built numerous stūpas along the Krishnā in South-east India on sites including Amarāvati and Nāgārjūnakoṇḍā (above, p. 72) in Guntur District and Jaggayyapeta, Ghantasālā, Gudivādā and Bhaṭṭiprolu in Krishnā District. These stūpas consisted of brick-built hemispherical domes on a low base and were characterized by rectangular projections from the base of the dome at the four cardinal points, the projections supporting a row of five ornamental pillars. The earlier examples at Bhaṭṭiprolu and Gudivādā were of solid brick-work, while those at Amarāvati and Ghantasālā had in the interior radiating brick walls with a hub and spokes, the spaces between the walls being filled with earth-packing, before the outer brick casing was constructed. The stūpas were finished with plaster and most of the larger ones were embellished at the base with sculptured marble panels, the example at Amarāvati being particularly noted for them. The superstructure of the stūpas is invariably missing, but it can be visualized by contemporary plastic representations on dimensions, the Amarāvati marble friezes.² As regards their diameter ranges from 31 feet for the smallest example at Jaggayyapeta to upwards of 100 feet for those at Bhaṭṭiprolu Gudivādā,

¹ A. Cunningham, *Stupa of Bharhut* (London, 1879), pp. 4 ff.

² J. Burgess, *The Buddhist Stupas of Amaravati and Jaggayyapeta* (London, 1887), pl. I.

Ghaṇṭasālā and Amarāvati, the last having an approximate diameter of 162 feet for the stūpa and 192 feet for the enclosing railing with a conjectured height of about 100 feet. The examples at Nāgārjunikondā, definitely datable to second-third centuries, range in diameter from 27 feet to 106 feet.

Like plastic art, architecture also had a peculiar regional development in ancient Gandhāra, or the north-west region extending to Afghanistan, during the first five centuries of the Christian era. This region is studded with numerous Buddhist sites, like Taxila and Mānikyālā in Rawalpindi District; Takht-i-bāhī, Sabri Bahlol and Jamālgarhī near Mardan; and Chārsada in Peshawar District, which have both stūpas and monasteries, the latter built on the plan of an open rectangular court enclosed by cells and verandahs on four sides with an annexe comprising assembly-hall, kitchen and refectory. The stūpas, which, like the monasteries, are executed in stone-masonry and finished with lime or stucco plaster, are embellished with Buddhist images and designs of Indo-Corinthian pillars which are typical of the Gandhāra art. The earlier stūpas, represented by the example at Mānikyālā and the Dharmarājikā stūpa (above, p. 53; pl. XVI) at Taxila, are characterized by a hemispherical shape. But the remaining Gandhāra stūpas are distinctive tall structures, raised on lofty square terraces, the drum consisting of several diminishing tiers crowned by multiple receding umbrellas. The top of the square platforms, approached by a flight of steps, was utilized as a processional path. The stūpas are generally surrounded by a large number of votive stūpas or small chapels which, like the main monument, are usually decorated with Buddhist images in niches framed within Indo-Corinthian pilasters. A representative and well-preserved example of the Gandhāra stūpa occurs at Takht-i-bāhī, which, though small, has retained all essential architectural features and is situated in the centre of a court enclosed by chapels. An example of exceptional plan and dimensions (diam. 286 feet) was unearthed at Shāhji-ki-dherī near Peshawar (above, p. 55) which yielded the celebrated relic-casket of Kanishka. This monument has a cruciform base with circular tower-like projections at the four corners, though its superstructure is of the normal Gandhāra type.

A series of brick stūpas were built in the plains of Sind during the fifth-sixth centuries in the characteristic Gandhāra style, the only difference being of the building-material. These monuments show a liberal use of moulded bricks for mouldings and designs which include the Indo-Corinthian pillar of Gandhāra. The most notable of these is the stūpa at Mīrpurkhās which is embellished with

sculptured terracotta panels in the best Gupta style. While sharing the general plan and design with other monuments of the group, it is unique in having three arched cells in the basement, each being treated as a sanctum with an image of Buddha in it.

In the North Indian plains, as in Sind, the stūpas were made principally of bricks and continued to be built till the twelfth century. They occur on Buddhist sites like Sārnāth, Saheth-Maheth (Gondā-Bahraich District), and Kasiā (Gorakhpur District). The earlier nuclei of the Dharmarājikā at Sārnāth exhibiting a hemispherical form have already been referred to (above, p. 80). Most of the existing stūpas date from the Gupta and later times and are of a definitely cylindrical shape with a high base, usually consisting of more terraces than one. The cylindrical type is best represented by the Dhamekh stūpa (pl. XXVI) at Sārnāth, dating from the Gupta period. It is a massive towering structure (diam. 93 feet; extant ht. 143 feet including foundation) with a 36 feet high basement made of solid masonry, while its foundation and lofty cylindrical drum are built of bricks. The basement has eight projecting faces with niches for statuary. The monument is further adorned with delicately-carved arabesque and geometrical patterns. The stūpas of the post-Gupta period, while retaining the cylindrical form, tended to be even more ornate in design and with their multiple terraces and umbrellas inspired the stūpa-architecture of Greater India including Tibet, Burma, Siam, Cambodia and islands of Indonesia.

The development of the stūpa in western India generally followed the lines identical with other sorts of the country, as is evident from a study of the rock-cut stūpas which were but replicas of the structural forms. We shall see in the following section how the earlier type with a low drum and few or no ornaments evolved through successive stages into a lofty drum with an elongated dome, decorated with a wealth of imagery, and finally culminated in a kind of shrine.

2. ROCK-CUT ARCHITECTURE

The earliest rock-cut caves in India are attributable to Aśoka (273-232 B.C.) and his grandson Daśaratha both of whom excavated a group of seven caves on the Barābar and Nāgārjuni hills in Gayā District of Bihar. All of them bear the distinctive Mauryan polish and, with the exception of one cave, are engraved with inscriptions of Aśoka and Daśaratha, which testify that they were excavated for the recluses of the Ājīvika sect. The remarkable examples of the group are the Sudāmā cave, dedicated in the twelfth year of

Aśoka's reign, and the Lomash Rishi cave, the only excavation without a Mauryan inscription. Both are lithic copies of structures in wood, their plan consisting of a rectangular antechamber leading to a circular cell. The antechamber ($32\frac{3}{4}$ feet $\times$ $19\frac{1}{2}$ feet $\times$ $12\frac{1}{4}$ feet) in the Sudāmā cave has a side-entrance and is vaulted, while its cell (diam. 19 feet; ht. $12\frac{1}{4}$ feet) has a hemispherical domed roof with an overhanging eave representing thatch and parallel grooves on the walls imitating wooden planks. The Lomash Rishi cave is even more notable and shows an ornamental entrance-porch, carved to represent the gabled entrance of a wooden building with sloping uprights, jointed beams and rafters, an ogee-arch of laminated planks crowned by a finial and perforated lattice-work—all features of wooden architecture. Below the lattice-work occurs a carved frieze depicting elephants worshipping stūpas.

The rock-cut architecture, initiated by Aśoka in the third century B.C., blossomed from second century B.C. onwards into a powerful and popular architectural mode, as is evidenced by nearly twelve hundred excavations, scattered throughout the country from Kāthiāwād and Rajputana in the west, Orissa in the east and down in the south to the tip of the peninsula. This architecture has three definite phases, the earliest dating from the second century B.C. to second century A.D., the second from the fifth to seventh century and the last from seventh to tenth century. All the phases developed primarily on the Western Ghats of the Bombay Province, the trap-formations of which were particularly suited for excavations, while they occur only secondarily in other parts of the country. The greatest centres of excavations in western India are Bhājā, Bedsā, Junnār and Kārle in Poona District; Elephanta and Kanheri near Bombay; Nāsik; and Pītalkhorā, Aurangābād, Ajantā and Ellorā in Hyderabad State. Ajantā has twentynine Buddhist excavations ranging in date from second century B.C. to seventh century A.D., while Ellorā has as many as thirty-four excavations, dating from fifth to eighth century, of which the earliest are Buddhist followed by Brāhmanical and Jaina caves in the chronological order.

EARLY BUDDHIST CHAITYA-HALLS OF WESTERN INDIA (c. 200 B.C. A.D. 200)

The first phase of excavations in western India was exclusively devoted to the earlier form of Buddhism which worshipped Buddha in a symbolical form. The excavations took the shape of (1) chaitya-hall and (2) monastery and copied in rock the structural forms practised in less permanent material like wood. The chaitya-hall is more important of the two constructions and consists of a

vaulted congregation-hall with an apsidal end containing a stūpa (also cut out of the living rock), the hall being longitudinally divided by a double row of colonnades into a central nave with two side-aisles. In its elementary form this plan is directly derived from the Sudāmā cave at Barābar by eliminating the barrier between the antechamber and the cell of the latter and providing a circumambulatory passage round its circular cell which is substituted by a stūpa. That these chaitya-halls were copies of timber structures is evident not only from the servile adoption in rock of many designs and devices peculiar to wood-architecture, but from the actual presence in many cases of woodwork in the roof and the entrance arch, etc. The most attractive and carefully-designed part is the façade which consists of a screen with a doorway or doorways below and a prominent arch-window above, through which light is admitted into the hall. The façade is relieved with designs of arcade and railing and occasional sculpture and in some cases has a front portico or vestibule, usually of timber, attached to it.

The more important chaitya-halls occur at Bhājā in Poona District, Kondāne in Kolābā District; Pitalkhorā and Ajantā (cave no. 10) in Hyderabad State; Bedsā in Poona District; Ajantā (cave no. 9); Nāsik (Pāndū-lenā); Junnār and Kārle in Poona District; and Kanheri on Salsette island near Bombay. They are mentioned in an approximate chronological order which is largely determined by stylistic development based mainly on the degree of imitation of wooden prototype, the earlier examples being closer to the latter with a liberal use of actual timber. The evolution of the shapes of the window-arch from a simple to elaborate curve, of the pillar from a plain to decorated form, and of the stūpa-dome from a hemisphere to a cylinder are other guiding principles.

The earliest chaitya-hall at Bhājā, which dates from roughly 200 B.C., betrays its initial character in many features including a pronounced slope of the pillars, wooden roof-girders, a free use of timber in other parts, and an undeveloped ogee arch-window, closely approximating the form of the Lomash Rishi cave. The hall measures 55 feet $\times$ 26 feet $\times$ 20 feet high, each side-aisle being $3\frac{1}{2}$ feet wide. The Kondāne example, which is a little larger and later than Bhājā, differs from the latter in having the façade-pillars of stone instead of wood. In the Pitalkhorā and Ajantā (cave no. 10) chaitya-halls the roof-ribs over the side-aisles are not of timber but are cut out of rock. The latter is a more ambitious production, measuring 100 feet $\times$ 40 feet $\times$ 33 feet, and its stūpa has a double tier at the base and a slightly elongated dome. The Bedsā cave shows elaborate façade with pillars and pilasters in the front decorated with Persepolitan capital crowned by spirited human and

anima sculptures. Cave no. 9 at Ajantā and the Pāṇḍu-lenā at Nāsik have no timber attachments to their frontage. The former has the distinction of containing a rectangular hall with flat-roofed aisles and an elaborately designed façade with a minstrel gallery. The latter shows a two-storeyed ornamental façade characterized by a carved lunette above the doorway and an arcade with repeated stūpa motif and Persepolitan pillars flanking the arch-window. The pillars of its interior are almost perpendicular and better proportioned and have a pot-base and a square abacus, while its stūpa has a tall cylindrical drum. The Mānmoda chaitya-hall at Junnār is contemporary with the previous example and shares many of its features including a carved lunette on the façade and the absence of a front portico. There are four other roughly contemporary caves at Junnār of which the chaitya-hall known as the Tulajā-lenā is remarkable for its circular plan (diam. $25\frac{1}{2}$ feet) with a stūpa in a domed aisle of twelve pillars.

The chaitya-hall at Kārle (pl. XXVII) is the largest (124 feet $\times$ $46\frac{1}{2}$ feet $\times$ 45 feet) and most evolved example of its class, showing truly perpendicular pillars and a well-developed screen. It has an ornate two-storeyed façade with an enormous sun-window surmounted by structural woodwork in the upper storey and three doorways with the intervening space decorated with fine sculpture of donor-couples and indifferent Gupta palimpsests of Buddha figures in the lower storey. The sides of the outer porch are sculptured with architectural storeys, the lowest one showing grand elephant figures. In front of the façade stood two free-standing pillars of Persepolitan type, surmounted by a vivid group of addorsed lions, originally supporting a *dharma-chakra*. But more impressive than these are the pillars dividing the nave from the aisles, which show a pot-base, octagonal shaft and an elaborate capital, crowned by spirited statuary, consisting of two kneeling elephants, each bearing a noble couple in front, and caparisoned horses with riders at the back. The stūpa is of the tall cylindrical variety with two rail-courses, and with the original wooden umbrella intact. Datable to the close of the first century B.C., this is indeed one of the most magnificent monuments of India.

The chaitya-hall at Kanheri is the latest example of the phase dating from c. 180. Architecturally it is a degenerate copy of the Kārle chaitya, though it maintains the quality of the sculptural decoration intact.

EARLY JAINA CAVES OF ORISSA (SECOND-FIRST CENTURY B. C.)

The sandstone outcrop on the twin hills of Udaigiri and Khanda-giri near Bhuvanesvar in Puri District of Orissa was utilized for

excavating Jaina monastic retreats, attributable from c. 150 B.C. to the beginning of the Christian era. Only seventeen excavations out of a total of thirty-five are of significance, of which all but one are on Udaigiri. Most of them have a simple plan consisting of either a bare row of cells with a portico opening into a courtyard, but four of them have double-storeyed galleries grouped round an open courtyard. The developed Orissa caves are characterized by fanciful pillar-brackets, emulating the branch of a tree as in Rānī-gumphā, or depicting figures riding hippo griffs as in Manchapurī-gumphā; and (2) semicircular arches with their widened lower ends resting on pilasters crowned by addorsed animals.

The most remarkable and one of the earliest caves is the Rānī-gumphā which is a two-storeyed excavation with cells and verandahs enclosing three sides of an open quadrangle, the fourth side providing an open approach. This cave is distinguished by a long sculptured frieze along the walls of the upper storey which depicts narrative scenes of a dramatic character and which incidentally indicates that this cave was probably used on occasions as a religious theatre.

Of the remaining caves, Gaṇeśa-gumphā is notable for its sculptured friezes and two bold figures of elephants after which it is designated, while Manchapurī-gumphā and Ananta-gumphā—the latter on the Khandagiri hill—are noted for their fanciful brackets.

LATER BUDDHIST CAVES OF WESTERN INDIA (c. A.D. 500-642)

After a lapse of more than two centuries of inactivity started the second phase of the rockarchitecture of western India in the fifth century. This phase is characterized by a practical elimination of timber constructions or imitations thereof and by the introduction of the Buddha statuary as a dominant feature of the architectural design. Nevertheless, the plan of the excavations, particularly the chaitya-hall, remained essentially identical with that of the previous phase. This is exemplified by chaitya-halls nos. 19 and 26 at Ajantā which are the earliest products of this phase. The former, which is the earlier (c. 500) and finer of the two, has practically the same plan and dimensions as Ajantā chaitya-hall no. 10 (above, p.). Its façade has only one doorway instead of the usual three, but in front of it is an elegant pillared portico which opens in an attractive entrance-court with side-chapels. The pillars of the interior have decorated shafts with cushion-capitals and massive brackets which support a broad panelled triforium or frieze running round the nave. Over this triforium rises the vaulted roof, the ribs of which are now hewn out of rock. The brackets and the triforium, like the façade, are richly sculptured with figures of Buddha and attendants in niches

or panels. But the focal point of the entire composition is the large canopied figure of Buddha, occurring in a recessed niche on the stūpa which is of a very ornate and elongated design with a tall finial, consisting of a *harmikā*, triple umbrellas and a vase, the last touching the roof above.

Chaitya-hall no. 26, which is a little larger and later (c. sixth century), resembles hall no. 10 in the general architectural design. It, however, lacks the grace and dignity of the preceding, as its style is too ornate and encumbered with an excess of sculpture which is particularly evident on the pillar-brackets and the triforium of the interior. The elongated drum of its stūpa is richly laden with plastic carvings of which the central one is a seated image of Buddha in an elaborate pillared niche.

The last chaitya-hall of this phase and the best known of the Buddhist excavations at Ellorā in Hyderabad State is the Viśvakarmā cave, datable to c. seventh century. Larger (85 feet×34 feet) than the foregoing Ajantā chaitya-halls, it is not so lavishly sculptured as the latter, though its stūpa is more evolved and shows conspicuous projecting niche containing a large seated image of Buddha flanked by attendants and flying figures. The entrance to the hall lay through a large open court surrounded by a pillared corridor with a carved frieze above the pillars. Its most distinguishing characteristic, however, is the façade where the great sun-window is now replaced by a small circular opening with an ornamental trefoil curvature, comprising the culmination of the original horse-shoe opening.

While the rock-cut monasteries of the earlier phase (as exemplified by Ajantā caves nos. 8, 12 and 13) were essentially copies of structural dwellings, consisting of cells surrounding a courtyard, those of the later phase were combined shrines and dwellings and may be briefly noticed here. They are generally single-storeyed excavations, entered through a verandah, with a large central hall having a cella in the rear. The addition of a shrine-chamber to the monastic plan and the decoration of mural surface by niches containing images were innovations brought about by the introduction of Buddha statuary in the architectural scheme. The representative examples of this class are the Ajantā caves (all with the exception of nos. 8-10 and 12-13), of which nos. 1 and 16 are the finest; they are of the same size and design, each having an outer verandah, 65 feet long; a main hall, 65 feet square, containing an aisle of twenty pillars; together with the usual group of cells and shrine-chamber. The monastic plan was developed still further at Aurangābād and Ellorā, the latter site showing some enormous triple-storeyed monasteries of elaborate design like the Tīn-thāl and Do-thāl, besides simpler ones.

BRĀHMANICAL AND JAINA EXCAVATIONS OF WESTERN INDIA (c.
A.D. 700—900)

The third or the final phase of rock-architecture, which flourished between the seventh and early tenth centuries, was devoted to Brāhmanical and Jaina forms of worship and was mainly confined to (1) Ellorā in Hyderabad State, (2) Elephanta and Salsette islands near Bombay, and (3) Mahābalipuram in Chingleput District on the eastern coast.

Of the Brāhmanical and Jaina excavations of Ellorā, the former are earlier as well as more interesting and consist of sixteen examples which fall into four groups. The first group was planned on the lines of a Buddhist cave-monastery consisting of a pillared portico with a cella beyond and is represented by the Daśavatāra cave (early seventh century) which claims the distinction of being the only two-storeyed Brāhmanical excavation at Ellorā. This temple was entered through a courtyard having a square *nandī*-pavilion and comprises a pillared hall (97 feet×50 feet) in the ground floor and a larger and finer hall (105 feet×95 feet) in the upper storey, supported on six rows of nine pillars each, with a two-pillared vestibule at the far end leading to a square cella enshrining a *linga*. The walls of the upper storey are richly carved with Śaiva and Vaishṇava sculptures in recessed panels which effectively relieve the plain surface.

The second group of cave-temples, characterized by a processional path around the shrine, is represented by the Rāvaṇa-kā-khāi and Rāmeśvara caves (late seventh century). These caves are noted for their bold figure-compositions, but the latter is also remarkable for its lofty *nandī*-pavilion and the exquisitely-modelled bracket-figures of the stunted pillars of the façade which are of the vase-and-foilage order.

The third group of rock-temples in which the shrine is isolated but stands in a cruciform hall is represented at Ellorā by the solitary Dūmar-lenā (early eighth century), which inspired the production of two similar cave-temples on two different sites, viz. at Elephanta and Jogēśvarī in Salsette. Architecturally these are extremely remarkable cave-temples as they have three portals, one in front and one in each wing, and were lighted with artistic effect from three sides. Their massive shrine with four doorways, each flanked by *dvārapālas*, is prominently placed in a large cruciform hall which is schematically divided by rows of columns into a nave, aisles and transepts. A notable feature shared by all examples of this group is the elegant form of their massive pillars with ribbed cushion-capital. The Dūmar-lenā is the grandest temple of the group,

with each of its axis measuring 150 feet, while its main hall measures 150 feet by 50 feet only. The Elephanta cave (c. A.D. 750) is smaller (130 feet $\times$ 129 feet) than the Dūmar-lenā but is distinguished by the exceptional quality of its sculptures, carved in recessed panels, of which the best known is the three-headed Śiva (pl. LVI B) facing the main entrance in the north. It is further noteworthy that its shrine is in the axis of the side-portals and not of the front gate, and that it has a subsidiary shrine to its south-west. The latest temple of the class at Jogeśvarī, dating from c. 800, is larger than the previous examples and measures 250 feet long. Its main hall is 95 feet square with an aisle of twenty pillars, containing a square *linga*-shrine in the centre. Its plan, however, lacks balance, as it comprises an ill-conceived and incoherent range of courts, porticos and hall in one axis.

The final type of Brāhmanical cave-temple at Ellorā is represented by the Kailāsa which is a replica in rock of a structural temple, not unlike the roughly contemporary Virūpāksha temple at Pattadakal (below, p. 96). Excavated in the latter half of the eighth century under the patronage of the Rāshtrakūṭas, this temple marked the supreme culmination of Indian rock-architecture which was nothing but sculpture on a grand scale. These excavations conducted on a scarp, more than 100 feet high, and covering an area of roughly 300 feet by 175 feet, consisted of (1) main temple, (2) *nandī*-shrine, (3) gateway and (4) cloisters surrounding the courtyard, the first three being planned in the same alignment from east to west. The temple proper (164 feet $\times$ 109 feet $\times$ 96 feet high) rose from a lofty plinth (ht. 25 feet) which was carved with vivid and life-size sculptures of elephants and lions. Above the plinth stood the ground superstructure, each detail of which including the projecting transepts, mouldings, pilasters and niches was chiselled with infinite patience and amazing fidelity to the structural models of the early South-Indian temple-style. The tower rose in three tiers with gable projection on the side and was crowned by a cupola (ht. 96 feet). The interior of the temple, standing high on the plinth and consisting of the usual porch, pillared hall, vestibule and cella, was approached by flights of steps from the west. The pillared hall (70 feet $\times$ 62 feet) was supported on sixteen pillars arranged in a group of four in each corner. Around the *vimāna* rose five subsidiary shrines of the same design as the main temple. The *nandī*-shrine was a square ornamented pavilion (20 feet side $\times$ 50 feet high) joined by rock-cut bridges to the temple on one side and the two-storeyed commodious gateway on the other. Two stately, carved free-standing pillars (ht. 51 feet), flanking the *nandī*-shrine, and the extensive cloisters surrounding the courtyard add to the dignity of the composition.

The magnitude of this excavation combined with the grandeur of conception and the high quality of its rich plastic embellishment render this cave-temple an unrivalled gem of Indian architecture.

Of the detached cluster of Jaina excavations at Ellorā which were the last to be undertaken between 800 and 900, the most notable are the Indra-sabhā and Jagannātha-sabhā. The former, which is earlier and superior in workmanship, shows a fine little Dravidian shrine flanked by a free-standing pillar and an impressive sculpture of elephant, all crowded into a small open court. This court is enclosed on three sides by two-storeyed wings, the storeys being divided by two richly-carved entablatures, the upper one showing shrines containing Jaina Tīrthaṅkaras and the lower elephants and lions between pilasters. The two storeys have a similar plan consisting of a porch, pillared hall and a vestibule leading to a cella. The lower storey is plain and unfinished, while the upper one is exquisitely ornamented with patterned shafts and rich figure-sculptures carved in recessed panels between pilasters on the wall-surface. The other Jaina excavation, viz., the Jagannātha-sabhā, is similar to the foregoing in its general arrangement, though it exhibits poor planning. Its ground-storey consists of three small sanctuaries, haphazardly arranged, while the upper storey has two sanctuaries of which the principal one has a fairly large pillared hall. These Jaina cave-temples, remarkable for their lavish carvings and exquisite pillars with the cushion-capital, reveal a general decadence of architecture and a reversion to the original timber-style.

PALLAVA ROCK-ARCHITECTURE (c. 600-715)

The rock-cut architecture in South India flourished under the early Pallavas during the seventh century and was expressed in two forms, one *mandapa* which was an excavation, and the other *ratha* (pl. XXVIII) which was a monolith. The *mandapa*, which consisted of a simple pillared hall with one or more cellas in the rear was initiated by Mahendravarman I (c. 600-630) who excavated fourteen examples, scattered from Undavalli in Guntur District to Trichinopoly in the Extreme South. Having plain cubical pillars with a heavy corbel-bracket, derived from a wooden prototype, his *mandapas* exhibit various stages of evolution, the earlier examples having no roll-mouldings above pillars, the middle ones showing them alone, and the later one at Mogalrājapuram in Krishnā District combining these mouldings with the *kuḍu*-motif which is but a diminutive form of the chaitya-arch. The *mandapa* at Undavalli is unique being a pyramidal construction of four tiers, which the examples at Bhairavakondā in Nellore District initiate the distinctive Pallava order with a lion-figure on the shaft.

During the succeeding reign of Narasimhavarman I (c. 630-670), also known as Mahāmalla or Māmalla, the Pallava rock-architecture attained its early adolescence and maturity, to be shortly outmoded and replaced by structural temples in the reign of Narasimhavarman II Rājasiṃha (c. A.D. 690-715). Besides continuing the *mandapas* of which he produced ten examples, he also excavated a new type of temples known as *rathas* (pl. XXVIII), all his monuments being concentrated at Mahābalipuram of which he was the founder. His *mandapas* follow the general plan and dimensions of the previous reign but are more developed. On their façade is a roll-cornice, ornamented with the *Kuḍu*-motif which is surmounted by a parapet formed of model-shrines, a long one alternating with a short one. The mural surface between the pilasters was utilized for the carving of edifying sculpture. The Pallava order with a leonine shaft and a capital consisting of a lotus-form (*ūḍaḷ*) and a square abacus (*palagai*), which characterizes all the principal Pallava monuments, first occurs in a full-fledged form in the Varāha and Mahishāsura *mandapas*.

The *rathas* (pl. XXVIII) were rock-cut models of structural temples, originally derived from wood. These are eight in number, of which five, known after the Pāṇḍava brothers and their consort, are clustered together, while three lie scattered. With the exception of the Draupadī-ratha which simulates a thatched hut, all of them are inspired by the models of either the Buddhist monastery or the chaitya-hall and fall into two broad groups. The first group is inspired by the monastic plan of a courtyard enclosed by cells and is represented by five specimens. These are two or three-storeyed monoliths, square on plan and pyramidal in elevation, with cells of alternate square and oblong shapes, occurring on the parapets of the terraces as decorative designs. The largest of them, viz. the Dharmarāja-ratha, is a pyramid, 40 feet high, of three tiers of cell-terraces crowned by an octagonal dome. The ground-floor consists of a pillared hall, 28 feet square, on a moulded plinth, with a projecting entrance-porch facing the west. The other group, represented by the *rathas* known as Bhīma, Sahadeva and Gaṇeśa, are modelled after the different types of the chaitya-hall. They are oblong on plan, but while the Sahadeva-ratha is of apsidal design, the two other *rathas* have a keel-shaped roof with gable-ends. The latter *rathas* are remarkable as being the obvious prototypes of the later *gopuram* which formed the most typical feature of the South Indian building-art (pl. XXXVI).

The *rathas* have a unique significance in the history of Indian art and architecture. Abounding in immense architectural potentialities and adorned with sculptural art of a truly classical quality,

these monuments not only laid the foundation of the South Indian architecture but influenced to a considerable extent the development of art in the islands of Indonesia.

3. TEMPLE-ARCHITECTURE

EARLIEST TEMPLES (c. 250 B.C.—A.D. 300)

The earliest known temple with a sensible plan is the original Temple 40 at Sānchī which is probably of a Mauryan date. The original structure consists of an apsidal stone plinth approached by a flight of steps on its eastern and western sides. The superstructure, which was presumably of wood, has completely disappeared and the original fabric lies hidden beneath later reconstructions dating from the second century B.C. to the eighth century A.D.

Two other temples of a comparable date existed, one dedicated to Saṅkarshana and Vāsudeva at Nagarī (ancient Madhyamikā) in Udaipur State, and the other, also a Bhāgavata (Vaishṇava) shrine, at Besnagar in Gwalior State. But the remains of these are too fragmentary to yield an idea of their plan and design.

The temple next in date was the Jandīāl (above, p. 54) at Taxila, which resembles the peristylar Greek type of shrine with a vestibule, a *pronaos* or porch, a *naos* or sanctuary and an *opisthodomos* or back-porch. It differs from the Greek type in having a wide massive platform between the sanctuary and the back-porch, obviously intended to support some kind of tower from which it is conjectured to have been a Zoroastrian shrine. The Ionic order of pillars employed in the monument indicates that it was built not later than 100 B.C. Two apsidal temples are also known from Taxila, one at Sirkap, dating from the first century A.D. and the other at the Dharmarājikā stūpa site, assignable to the second-third centuries. A contemporary temple with a similar apsidal plan also occurs at Nāgārjunikondā in Guntur District.

GUPTA TEMPLES (c. 400-600)

The above-mentioned shrines represent only initial efforts in structural temple-architecture. But the real foundation of this architecture was laid in the Gupta period when the characteristic elements of the Indian temple emerged. The main features of an Indian temple, consisting of a square sanctum (*garbha-griha*) with a pillared porch (*mandapa*) in front, are seen for the first time in Gupta temples, later examples of which also showed a covered procession-path around the sanctum. The earlier examples, invariably built of stone-masonry, are distinguished by a flat roof, while

the later ones, constructed of either brick or stone, developed a *śikhara* or spire, which became a characteristic of North Indian temple-style. But all of them share some common characteristics viz. elaborate ornamentation of the door-frames and pillars in contrast to the plain design of the whole shrine; division of jambs into several vertical bands, containing figures of river-goddesses Gaṅgā and Yamunā on their mounts, scrolls and other devices carried over the lintel which bears in a central boss a relief-figure of the presiding deity of the shrine; a rich variety of designs on pillars which are divided into different sections; and the continuation of the architrave as a string-course round the whole structure.

The first and simplest group of Gupta temples showing a single-celled shrine with a shallow portico, approached by a flight of steps, in front is represented by Temple 17 at Sānchī, the earliest Gupta example; the Vishṇu temple at Tigāwā (Jubbulpore District); and the Varāha and Vishṇu temples at Eran (Gwalior State). A notable feature of these is the intercolumniation of the four pillars with greater space in the middle than at the sides. With their flat roof, square or rectangular form, plain treatment of the walls and modest size, these temples were obviously derived from rock-cut prototypes of which Gupta examples actually exist at Udaigiri near Sānchī.

The second group of temples, characterized by the addition of a roofed cloister around the sanctum for circumambulation and otherwise following the plan of the preceding group, is represented by the so-called Pārvatī temple at Nachnā (Ajaigarh, Central India), the Śiva temple at Bhumarā (Nagod, Central India), the Lād Khān temple at Aihole (Bījāpur District) and the basement of a brick temple at Baigrām (Dinājpur District, Bengal). The covered cloister in the Bhumarā temple has now disappeared leaving it an open promenade, while in the Nachnā and Aihole examples it is lighted by trellises. The two later temples are notable for carrying an upper storey above the sanctum. The Aihole example, which is the largest temple of the type, has several other interesting features including pillars with heavy bracket-capitals, provision of stone-seats in the portico and the treatment of slabs on the principle of tile-roofing.

The next group of Gupta temples, distinguished by a conical tower or *śikhara* over the square sanctum, is represented by the Daśāvatāra temple at Deogarh (Jhānsi District), built in stone, and the brick temple at Bhītargāon (Kanpur District), both dating from c. sixth century. These temples showing *śikhara*, which became the most characteristic feature of the North Indian style

of temple-architecture, are of great significance. The Deogarh shrine stands on a wide platform approached by flights of steps on the four sides. The platform is decorated with sculptured panels between pilasters, representing scenes from the *Rāmāyana*. The plain walls on the three sides of the sanctum are relieved with recessed panels or false windows each carved with a superb figure-composition within a framework of graceful pilasters and architraves. Its *śikhara* was pyramidal in elevation and was mainly embellished with the chaitya-arch motif and angle-*āmalakas*.

The brick temple at Bhītargāon is a tall pyramidal edifice (ht. 70 feet) of diminishing tiers built on a high plinth. On plan it is square (diam. 36 feet) with doubly recessed angles and consists of a square sanctum and a square *mandapa* connected by a passage (*antarāla*). While the sanctum and the *mandapa* are roofed by domical vaults, the passage is covered by a barrel-vault. The walls are relieved with bold mouldings, carved brick-courses, and projecting and recessed panels of terracotta friezes; while the *śikhara* is decorated with superimposed tiers of chaitya-niches containing projecting busts or figures.

The brick-built Mahābodhi temple at Bodh-gayā which in its original form was roughly contemporary with the preceding temple is unfortunately encumbered now with arbitrary restorations, the four corner-towers having been presumably added by the Burmese Buddhists in the fourteenth century. The central tower, though considerably modified by later reconstructions, however, appears to be original in its essential plan and design including the repeated chaitya-arch decoration. It may, therefore, be safely presumed that the original, like the surviving structure, stood on a high plinth and had a lofty tower, pyramidal in elevation and square in section, the façade consisting of five vertical and seven horizontal bands, relieved by pilasters and chaitya-niches.

We come across yet another type of Gupta temple, which though distinctive is not very popular. This type is marked by a rectangular shrine with an apsidal rear-end and a barrel-vaulted roof showing a gable-end of the chaitya-window design. It is represented by only two Gupta examples, one at Ter (Hyderabad State) near Sholāpur and the other known as the Kapoteśvara temple at Chezralā in Krishnā District. Both are modest brick-structures, about 30 feet long, and obviously constitute the structural models of rock-cut chaitya-halls.

The last type of Gupta shrine is represented by a unique example, known as Maniyār Maṭh (above, p. 56) at Rājgir in Patna District. It consists of a hollow cylindrical brick-structure, decorated with

beautiful stucco sculptures in niches, resting on an earlier structure of the same shape with a projection at each of the cardinal points. The enclosing wall which is now square also appears to have been originally circular.

CHĀLUKYAN TEMPLES (c. 500-750)

While the Gupta temples were being built mainly in Central and northern India a brisk building-activity was going on in a part of the Deccan with principal centres at Aihole, Bādāmi and Paṭṭadakal—all in Bijāpur district. The movement started about the fifth century and lasted till the eighth and initiated several significant forms of temples which later developed into characteristic types of North and South India. The earliest temple of this region, viz., the Lād Khān at Aihole, showing a typical Gupta form has already been noticed above (p. 94). Aihole has yielded two other temples of significance, viz., the Durgā and the Huchchimalligūḍi temples, both closely following the Lād Khān in date. Though the pyramidal *śikhara* appearing over both these temples was added later, it is nevertheless of the early experimental variety which represents a prototype of the North Indian style of *śikhara*. The Durgā temple is a peripteral and apsidal-ended structure with an apsidal cella, nave, aisles, enclosing pillared verandah, and a portico approached by two lateral flights of steps—the whole raised on a high moulded plinth. The Huchchimalligūḍi temple is a rectangular structure, consisting of a square sanctum, enclosed by a covered processional passage, a vestibule (*antarāla*), a pillared hall and a projecting porch—all on a raised plinth. The façade is plain but for a frieze of vase-pattern on the portico. This is the earliest temple showing a vestibule between the cella and the *mandapa*.

Of the temples at Bādāmi, two examples, viz., the temple of Mahākūṭeśvara (c. 600) and the Malegitti Śivālaya (c. 700), are of importance, as providing early prototypes of the characteristic South Indian tower, consisting of an octagonal domical finial supported by a superimposed series of small shrines. The latter temple, containing a square cella and *mandapa* with a projecting porch, shows monolithic pillars with massive bracket-capitals, broad string-courses and overhanging roll-mouldings.

The evolution of temple-art crystallized still further at the last and latest Chālukyan centre at Paṭṭadakal, showing among other two most significant temples, of which the Pāpanātha (c. 680) represents the northern style, while the Virūpāksha (c. 740) belongs to the southern style. The temple of Pāpanātha (pl. XXIX) is a long low structure with porch, *mandapa*, *antarāla* and sanctum,

the last surmounted by a stunted northern tower which is too small in proportion to the length of the building, while the *antarāla* is disproportionately large assuming the size of a court. The main decoration on the façade is a central band of projecting niches representing a repeated shrine-motif which, though quite pleasing by itself, shows a poverty of ideas. The undeveloped and incoherent plan and design of the temple indicate that it belongs to a formative stage. A more improved example, however, is the Virūpāksha temple (pl. XXX), representing the southern building style. It is not only larger (120 feet long) than the previous example but is a more balanced and logical composition, with all essential parts of the temple including the vestibule and a detached *nandī*-pavilion harmoniously arranged. Particularly noteworthy is the well-executed junction of the sanctum with the *mandapa*. The structure is also interesting for its pyramidal tower, consisting of diminishing tiers of shrines crowned by an octagonal dome, and the 'order' of the shrine-like niches on the façade, which are in the South Indian style. The decorative treatment of the façade with mouldings, pilasters, brackets, scroll-work and figure-sculpture exhibits an admirable integration of plastic art with the architectural scheme which renders this monument a remarkable achievement. Besides, this temple is important as marking an advanced stage in the evolution of the regional temple-architecture which fully matured during the twelfth-thirteenth centuries.

POST-GUPTA TEMPLES OF NORTH INDIA

We have already seen above how the northern *śikhara* was developed during the sixth-seventh centuries. From the eighth century onwards temples with this typical *śikhara* began to be constructed in large numbers and were not confined to the North Indian plains but extended from the Himalayas to the Deccan and from Orissa to Kāthiāwād. The style had several definite regional movements and will be noticed accordingly. But before dealing with the local northern styles we shall briefly review the post-Gupta brick temples which really continued the tradition of Gupta brick-architecture.

The brick-temples of Nālandā (above, p. 63), Pahārpur (above, p. 64) and Ahichchhatrā (above, p. 66), dating from sixth to tenth centuries, form a class by themselves. They are high solid structures and in each case the shrine is placed at the top which was approached by a flight of steps. During the sixth century the largest temple at Nālandā had four corner towers which were decorated with niches containing Buddhist stuccoimages. The temples of Ahichchhatrā and Pahārpur were of the terraced variety, the

latter being remarkable for its cruciform plan and stupendous size (500 feet $\times$ 300 feet at the base).

The Lakshmana brick temple at Sirpur in Raipur District resembles the Bhītargāon temple in its general design, though it is later and more ornate than the latter. All that remains of this temple is its porch and sanctum, the latter being remarkable for its highly ornamental exterior, embellished with designs including 'false window' and chaitya-arch. Similar brick temples are also known from other places in the same district and from Pattan Munārā in Bahāwalpur State (Pakistan).

The development of the northern type of temple-architecture is best illustrated by the stone-temples of the Orissa style which, though mainly concentrated at Bhuvanesvar, Puri and Konārak—all in Puri District of Orissa, extend from the border-districts of Bihar and Bengal to Ganjam in the Madras Province. The style started during the eighth century with the Paraśurāmeśvara temple at Bhuvanesvar and culminated during the thirteenth in the Sun-temple at Konārak. The earlier Orissa examples consist of a sanctum surmounted by a high curvilinear tower and a square *mandapa* which is called in Orissa *jagmohan*, while later on were added in the same axis two other halls known as *nāṭa-mandapa* (dancing hall) and *bhoga-mandapa* (hall for offerings). These halls were single-storeyed structures raised on a plinth and the elevation of each consisted of two parts, cubical below and pyramidal above. The tower stood on a similar plinth and upright cubical base, above which its parts resolved into the tall curvilinear portion, the flat ribbed disc (*āmalaka*) and the finial (*kalāśa*) as the crowning piece. The Orissa style is characterized by its general astylar construction, plain interior and a lavishly-decorated exterior. Bhuvanesvar with thirtyfive temples was the pre-eminent centre of the style and unless otherwise specified, the examples mentioned here are from this place.

The earliest example from Orissa, viz. the Paraśurāmeśvara temple (c. eighth century) comprises a rudimentary, heavy-shouldered *śikhara* and a low rectangular *jagmohan* with a double roof and massive caves, which bespeak a formative stage (pl. XXXI). The Vaitāl Deul, closely following the preceding in date, is unique in showing a two-storeyed tower with gabled barrel-vaulted roof, allied to the southern style and, has an uncommon *jagmohan* of flat-roofed construction with a northern tower in each of its corners. The first mature production of the style was the temple of Mukteśvara (c. 975) which is notable for its *torana*-archway. But by far the finest and most majestic of the Orissan temples in the Liṅgarāja

(pl. XXXII) at Bhuvanesvar, built in c. 1000. Originally it comprised only the *vimāna* (towered sanctum) and the *jagmohan*, while the *nāṭa*- and *bhoga-maṇḍapas* were added later. The effect of the height of tower is enhanced by the vertical ribs of which two on each side bear small replicas of the tower itself. The mature planning of the whole structure, the proportionate distribution of the parts, the graceful curve of the great tower and its elegant architectural and plastic decoration together with its impressive dimensions (ht. above 120 feet) render this monument one of the sublimest creations of Indian architecture. The famous temple of Jagannātha at Puri, dating from the eleventh century, shows the same mature plan as the Liṅgarāja, but is even loftier and more enormous (310 feet×80 feet×200 feet high) and is remarkable for its hypostyle *nāṭa-maṇḍapa*. Of the latest temples of Bhuvanesvar noteworthy are the Rājārānī with its *śikhara* consisting of miniature representations of itself and Ananta Vāsudeva. But by far the grandest achievement of the Orissa school was the Sun-temple at Konārak, dating from the middle of thirteenth century. Built on a high plinth, conceived as a wheeled chariot dragged by seven rearing horses, this colossal temple originally consisted of a lofty *vimāna* (ht. c. 225 feet) with three subsidiary shrines attached, a large *jagmohan* (100 feet side×100 feet high) with a pyramidal roof and a detached *nāṭa-maṇḍapa*, of which only the *jagmohan* is now preserved in an extensive courtyard (865 feet×540 feet). It is one of the most balanced and magnificent structures marking the culmination of the Orissan architecture and is remarkable as much for its magnitude as for the rich quality and profusion of plastic decoration, often of a highly erotic nature.

The group of Hindu and Jaina temples at the old Chandella capital of Khajurāho (Chhatarpur, Central India) are only second in importance and magnificence to the Orissa temples. They were all built between 950 and 1050 and are characterized by a high basement over which stands the whole structure consisting of a cella, vestibule, hall and an entrance-portico and occasionally transepts. The finest of the Hindu temples is the Kandaryā Mahādeva (pl. XXXIII) which excels the contemporary Liṅgarāja temple in the graceful contour of the tower. The soaring effect of the tower is emphasized by vertical projections representing diminutive towers of the same design. The processional passage, which is included in the interior, is provided with balcony-windows which cast pleasing shadows on the elevation. With the exception of the tower, all parts of the temple, including the interior, are richly carved with floral and sculptural designs including erotic scenes. Of the remaining temples, notable are the Vaishṇava temple of

Chaturbhuja and the Jaina temple of Ādinātha which are built on much the same style and differ only in the nature of the figure-sculpture.

Temples of beautiful form were also built during the eighth to eleventh centuries in other parts of central India and Rajputana. Among the remarkable temples built in the eleventh century at Gwalior may be mentioned the Vaishṇava temples of Sās-bahū of which the larger one has only the *maṇḍapa* which is an interesting terraced structure of three storeys. Another Vaishṇava temple, Teli-kā-mandir, is notable as a shrine of the northern style with a barrel-vaulted roof like that of the Vaitāl Deul at Bhuvanesvar.

The village of Osia in Jodhpur State has preserved remains of a large group of small Jaina and Brāhmaṇical temples, dating from the eighth to twelfth centuries. Of these most elegant are two temples of Hairhara (c. eighth century) and one of Sūrya (c. ninth century)—all built on the *pañchāyatana* style with four subsidiary shrines of the same design at the corners. The latter temple is remarkable for the original design of its entrance-porch supported on two tall fluted pillars of considerable grace. The Jaina temple of Mahāvīra deserves special notice because of its ornate *torana*-arch.

Western India including Kāthiāwād, Gujarat and western Rajputana witnessed the development of a regional style of temple-art during the tenth to fourteenth centuries. These temples contain the usual components of a Hindu shrine but show great skill in joining the cella with the hall which is done diagonally in the later examples like the Somanātha temple at Pāṭan (Kāthiāwād) and on the plan of a parallelogram as in the Sun-temple at Muḍherā (Gujarat). Both the plans have their sides indented by projections or recesses forming either simple or foliated angles which are carried up into the elevation, producing pleasing effects of light and shade. The façade of the temples is divided horizontally into three main portions consisting of (1) the moulded basement, (2) the wall-face up to the entablature and (3) the superstructure. The second division usually carries a heavily-sculptured pantheon right round the edifice. But the third portion is the most significant and, in the case of a *maṇḍapa*, consists of a low pyramid of horizontal courses. The superstructure of a West Indian *śikhara*, however, is most distinctive and comprises a cluster of members including semi-detached turrets at the lower portion. The interior of the temples is mainly peristylar, the pillars being of a characteristic shape with elegant carvings. Many of these temples are also

characterized by the presence of a storeyed 'tower of fame' (*kīrti-stambha*), of which the best known is the late example (1440-48) in the fort at Chitor (Udaipur State).

The earliest temples dating from the tenth century are at Sunak, Kanod, Delwal and Kasara, near Pāṭan in Gujarat. The best known among the eleventh century temples are the Navlakhā temples at Ghumli and Sejakpur in Kāthiāwād, the Sun-temple at Mudherā in Gujarat, Vimala Shāh temple (pl. XXXIII) at Mount Ābu in Rajputana and the group at Karādu in Jodhpur State. Of these the Mudherā temple is remarkable for its elegant proportions and aesthetic appeal. Among the twelfth century shrines the best known are the Rudramālā at Siddhāpur (Gujarat) and the famous Somanātha temple at Pāṭan (Kāthiāwād), which is said to have been sacked by Mahmud of Ghazna in 1025, rebuilt by Kumārapāla (1143-1174), and later again destroyed and converted into a mosque. The only notable temple of the thirteenth century is Tejapāla temple at Mount Ābu. This temple like that of Vimala Shāh at the same place is built of marble and characterized by a large circular hall, supported by richly-carved columns joined by strut-brackets and covered by still more lavishly carved ceilings (pl. XXXIV) with central pendants.

Some temples were built in a variant northern style in a part of the Deccan bounded by the Tāpti on the north and the upper branch of the Krishnā on the south. These temples, dating from eleventh to thirteenth century, show a distinctive type of *śikhara* with vertical bands of turrets carried up each of its angles from the lower cornice upto the finial, the interspaces between the quoins being filled with small replicas of the tower. The larger temples are generally diagonally planned and show an intricate series of projections and recesses of the wall-surface producing a bewildering effect of light and shadow. They also employ a special 'order' of pillars and a variety of 'knife-edged' moulding, known as *kani*. Of these temples better known are the temple of Ambaranātha in Thāna District; the triple-shrined temple at Balsane in Khāndesh; Goṇḍeśvara temple at Sinnar and Mahādeva temple at Jhogda in Nāsik District; and Lakshmī-nārāyaṇa temple at Pedgāon in Ahmadnagar District.

The temple-cities of the Jainas, dating from medieval and late medieval times, are widespread over India, the main centres being the Girnār hill and Śatrunjaya hill at Palitāna in Kāthiāwād, Rānpur in Jodhpur State, Pārasnāth in Bihar and Sravana Belgolā in Mysore State, besides Mount Ābu in Rajputana. These temple-cities are not laid-out on any specific plan but are haphazard growths, and

owe their origin to the piety of the Jaina community. The most picturesque are the temple-cities on Gīrnār and Śātrunjaya hills, the latter showing a cluster of 500 temples in eleven separate enclosures. An interesting type of shrines developed in these cities is the Chaumukhā (four-faced form) laid out in such a way that the four-faced Jaina images could be seen from each of the cardinal points.

A group of Vaishnava brick temples at Vishṇupur (Bānkurā District, West Bengal), dating between the seventeenth and eighteenth century, is characterized by a simple curved roof, representing the form of the native bamboo and thatch constructions, and further by a wealth of fine moulded brickwork. Similarly the use of the typical Bengal *chhajjā* is illustrated by the Chār-banglā temple at Barānagar (Murshidābād District), while the leaf-hut is represented by the Rānī Bhavānī temple near Murshidābād. Another typical form is represented by the temple at Kāntānagar (Dinājpur District, East Bengal), modelled after the wooden chariots and built in tiers of bent cornice with miniature towers at the corners.

A local style of shrines developed at Brindāvan, near Mathurā, during the sixteenth century, represented by the Vaishnava temples of Govindadeva and Jugal-kishor. The sanctum of the latter has an octagonal plan and is attached to a rectangular *mandapa*. These temples are distinguished by some features derived from Indo-Muslim architecture.

LATER CHALUKYAN OR HOYSALA TEMPLES (c. 1050-1300)

Early in the second millennium a distinctive type of temple-architecture, chiefly employing greenish chloritic schist, developed in a part of the Deccan including Dhārwar and Mysore State. Although it is influenced by the northern as well as the southern style, it has some individual features which entitle it to be regarded as a separate style. The typical Hoysala temple stands on a high polygonal plinth, conforming in shape to the main building, which is wide enough to be used as a processional passage. The main structure in its simplest unit comprises a cella, a vestibule, a pillared hall, the last often fronted by an open pillared pavilion. But many of the temples contain from two to five such units. The stellate plan of the sanctum or other parts is another notable feature of this type. In the treatment of wall-surfaces the main principle is horizontality which is achieved by carved horizontal bands crowned by a sculptured frieze running all round the structure. The tower is stellate in plan and rises above the projecting cornice in diminishing horizontal tiers crowned by a low umbrella-shaped

finial. The tower does not produce the impression of height, although it also has vertical bands of shrines and niches. The pillars have a characteristic shape and are surmounted by a 'four square' bracket. But the most distinctive feature of this style is the lavish sculptural decoration, so much so that the temples appear to have been fashioned not by architects but by craftsmen such as ivory-carvers or jewellers.

The most typical example of this style is the Keśava temple (c. 1268) at Somnāthpur (Mysore State) which is placed in a cloistered court, (215 feet × 177 feet) and is cruciform on plan, consisting of triple shrines. The group of temples at Belur (c. 1117) and the shrine of Hoysalesvara at Halebid (c. 1150), also in Mysore State, though incompletely preserved, mark the supreme climax of the style with superbly ingenious but excessive plastic ornamentation.

SOUTH INDIAN TEMPLES

In South India temple-architecture developed along independent lines and gave rise to building-modes quite distinctive from those of North India. The southern style may be grouped into the following five broad chronological divisions corresponding to the five principal dynasties which successively ruled over the region and patronized and largely moulded the growth of architecture in South India :—

(i) Pallava	(c. 600-900)
(ii) Chōla	(c. 900-1150)
(iii) Pāṇḍya.	(c. 1100-1350)
(iv) Vijayanagara	(c. 1350-1565)
(v) Nāyaka	(from c. 1600)

(i) *Pallava style* (c. 600-900)

The Pallava style is divisible into the earlier rock-cut phase and the later structural phase, of which the earlier one has already been noticed above (p. 91). The later phase, which was wholly structural, developed under the patronage of Narasimhavaraman II (c. 690-715) and Paramēśvaravarman II (c. 715-717). Of the six principal temples built in the previous reign, the most notable are the Shore temple at Mahābalipuram and Kailāsanātha and Vairāṅṭhaperumāl at Conjeeveram (Kāñchī). The first structural Pallava building was the Shore temple at Mahābalipuram. It stands on the shore and has an unusual plan with the main cella facing the sea from which it was intended to be viewed direct. Subsequently a second but smaller shrine was put up behind the cella, facing the opposite direction, and other parts of the building

including a gateway, an entrance-corridor, and a *mandapa* were all constructed at the rear. Though built on the same principle as the monolithic Dharmarāja-ratha (p. 91), consisting of a lower square storey with a pyramidal roof rising in diminishing tiers, its tower is more slender in proportion and has a graceful soaring quality.

The Kailāsanātha temple standing in the ancient Pallava capital at Conjeeveram was built to comprise originally a sanctuary with a pyramidal tower and a pillared hall within a rectangular court, enclosed by a high wall containing cells, while the hall was a later addition of the fourteenth century. The temple is notable for its better proportions and particularly for its developed tower which is substantial but elegant. Pallava architecture at its best is seen in the temple of Vaikunṭhaperumāḷ, also at Conjeeveram. This temple is larger in size than the preceding and its principal parts, consisting of cella, vestibule pillared hall and cloisters, are all joined together and enclosed by an outer cloistered wall. The pyramidal tower rises in four storeys and is encircled by two corridors for circumambulation.

The decline of Pallava architecture in the following reign is illustrated by the temples of Mukteśvara and Mātangeśvara at Conjeeveram which lack strength and originality.

(ii) *Chola style (c. 900—1100)*

The temples of the Chola period do not exhibit a material alteration in the structural plan and arrangements but are marked by a fresh spirit and the introduction of some new elements. The Pallava lion-motif is replaced by conventional mouldings of which notable is a string-course containing a row of griffin-heads which becomes a characteristic of the South Indian style. The pillars are better proportioned now and show a change of 'order'. Their abacus (*palagai*) is considerably expanded and combined with the lotus-form (*idal*) underneath.

Of the temples of this period the most mature and majestic is the Brihadīśvara temple (pl. XXXV) at Tanjore, built by Rājarāja the Great (985-1018). The temple has stupendous dimensions and is composed of several structures such as the great tower, a large hall, a pillared portico and a *nandī*-pavilion, arranged axially in the centre of a large walled enclosure. The great tower (ht. 190 feet) is made of three simple parts, (1) square vertical base, 82 feet side × 50 feet high, (2) tall tapering body composed of thirteen diminishing storeys and (3) domical finial rising from a constricted neck which pleasingly

breaks the monotony of the elevation. The rigid vertical outline of the tower is relieved by horizontal tiers, while its soaring quality is emphasized by a bulbous dome. Cleverly balanced in volume and decoration, this lofty tower is one of the most graceful and powerful creations of Indian building-art.

Of the remaining Chōla temples the most striking is that at Gaṅgaikondachōlapuram (Trichinopoly District) built by Rājendra Chōla (1018-33). It is remarkable for its large (175 feet $\times$ 95 feet) *maṇḍapa*, supported on over 150 columns, which was a precursor of the 'thousand-pillared' *maṇḍapa* of the later South Indian temples. But the most impressive part is its tall massive tower which is characterized by rich curves instead of the straight lines which mark the façade of the Tanjore tower. Like the Tanjore example, the stylobate of this temple is decorated with large sculptures which form a striking feature of the Chōla temples.

(iii) *Pāṇḍya style* (c. 1100—1350)

The most conspicuous feature of the Pāṇḍya style was the emergence of the monumental gateway or *gopuram* (pl. XXXVI) which dwarfed the towered sanctuary and became the dominating feature of the temple-complex. The temples came to be fortified within a series of enclosing walls which were pierced at the four cardinal points with gateways of imposing size and ornamental appearance. In contrast to the plain, often battlemented, walls the gateways were treated with rich plastic decoration. They were oblong on plan and pyramidal in elevation with a cubical base. The two lower storeys were vertical and built of solid masonry, while the superstructure consisting of a series of diminishing tiers was composed of lighter material like brick and plaster. It was surmounted by a barrel-vaulted roof with gable-ends, originally derived from Buddhist chaitya-hall.

The Pāṇḍya style has its typical order. The flower-shaped *idaḷ* below the abacus is foliated and develops a scalloped edge. Further, the corbel-bracket is now transformed into a small moulded pendant.

The best examples of the *gopurams* of this period are to be found at Śrīrangam (Trichinopoly District), Chidambaram (South Arcot District), Kumbakonam (Tanjore District) and Tiruvannāmalai, (North Arcot District).

Of these the eastern gateway at Chidambaram is the most representative. A seven-storeyed structure, measuring 90 feet $\times$ 60 feet $\times$ 135 feet high, it is ornamented with architectural decoration

consisting of pillared niches and canopied pavilions. Other *gopurams* are of much the same type.

(iv) *Vijayanagara style* (c. 1350—1565)

Under the patronage of the Vijayanagara kings there was a great efflorescence of building-art in South India marked by certain well-defined features. The most striking characteristic is the design of the pillar-shaft which becomes a nucleus either for a cluster of miniature pillars or for the attachment of an intricate group of statuary in the round, including rearing horses and rampant hippogiffs. The corbel-bracket is now replaced by a fully-evolved lotus-pendant. Other features of the style are doubly curved roll-cornice and voluted chaitya antefix.

With the elaboration of the temple-rituals many new adjuncts, consisting of shrines and halls, were added to the temple, of which notable were the *amman*-shrine for the consort and the *kalyāṇa-mandapa*, a most ornate type of pillared pavilion with a raised platform for the ceremonial wedding of the deity. The pillared halls in this period were larger and more ornate than in the preceding and constitute one of its distinctive features. The best examples of the pillared halls exist in the temples at Auvadaiyar Kovil and Vellur (North Arcot District), Ekāmranātha temple at Conjeeveram and Viṭṭhala temple at Hampī (Bellary District), the site of ancient capital of Vijayanagara, which is full of remains of contemporary places and temples. The most representative temples of this style are the Viṭṭhal and Hazārā Rāma temples at Hampī.

(v) *Nāyaka style* (from c. 1600)

The South Indian architecture reached its climax under the patronage of the Nāyakas of Madurā of whom Tirumal Nāyaka (1623-1659) is famous as the author of the largest number of temples. The Nāyakas completed the work of the Pāndyas and perfected the elaborate fortification of the temples within concentric enclosing walls pierced by imposing *gopurams*. The largest temples, containing a series of enormous outer courts, looked like independent fortified towns. The interior of the temples was also elaborated to comprise two extensive flat-roofed courts, one enclosed within the other, and each containing a series of shrines and long corridors. Within the outer courts were built a series of subsidiary shrines and halls including a hypostyle hall of 'thousand pillars'.

During this period the *gopuram* (pl. XXXVI) reached its maturity and often attained a height of over 150 feet showing as many as

sixteen storeys. The decoration of pillars with rearing dragons and fanciful animals became almost an obsession. Further, this style was characterized by a profuse use of figure-sculpture and integration of contorted figures with the architectural scheme.

This style is illustrated by temples at Śrīrangam and Jambūkeśvara both near Trichinopoly, Rāmeśvaram (Ramnād District), Chidambaram, Tinnevely, Tiruvannāmalai (North Arcot District), Śrīviliputtur (Ramnād District) and Madurā, the temple at the last-named place being the finest and most representative specimen of the style.

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CHAPTER IV

INDO-ISLAMIC ARCHITECTURE

THE Indo-Islamic architecture begins with the Ghūrid occupation of India at the close of the twelfth century. Although the Semitic Arabs conquered Sind in 712 and the Caliphs retained possession of it for more than 150 years, the only architectural relics of that period are the foundations of a few inartistic small mosques unearthed in the old city of Mansūra¹. Of the Karmatians and the more cultured Ghaznavids also, who overran India subsequently, nothing is traceable in the architectural history of India. The Muslims having inherited a wealth of varied designs from the Sasanian and Byzantine empires and being themselves naturally endowed with good taste for building, never failed to adapt to their own requirements the indigenous architecture of almost every country conquered by them from Spain in the west to India in the east. Thus the fusion of the two styles in India produced a new school of architecture, called Indo-Islamic Architecture, wherein manifold ideas and concepts of both the styles are discernible. The most important factors common to both forms of architecture, specially in respect of mosques and temples, were that to both the styles ornamental decoration was very vital and that the open court was in many cases surrounded by colonnades. But the contrast was equally striking: the prayer-chamber of the mosque was spacious, whereas the shrine of the temple was comparatively small; the mosque was light and open, whereas the temple was dark and rather closed; and the Muslim style of construction was based on arches, vaults and domes, whereas the Hindu was trabeate based on columns, architraves and pyramidal towers or slender spires. To reconcile these two styles, so characteristically opposed, was not easy, but an examination of Hindu and Jaina temples converted into mosques reveals how a building could be successfully erected out of alien material. Although Muslim architecture outside India can well boast of the green and gold of mosques of Jerusalem and Damascus or the beautiful coloured tilework of Persia, etc., yet the qualities of strength and grace borrowed from the Hindu architecture by the Indo-Islamic school of building are not to be met with elsewhere. The Muslims readily adopted the trabeate system of the Hindus and the bracket-types of Hindu corbel which they frequently utilized. The influence of Hindu art is clearly perceptible not only at Delhi in the earliest mosques built on the Indian principles of construction and decoration

¹ *An. Rep. Arch. Surv. Ind.*, 1903-04 (1906), pp. 133-34.

but in the Mughul buildings at Agra and Fatehpur Sikrī. Provincial Islamic architecture also owes much to the indigenous styles: in Bengal the prevalent brick construction was adopted by the Muslim conquerors who also imitated Hindu prototypes and motifs in their structural embellishments; in Kashmir they generously appropriated to themselves the beautiful wooden architecture of that period, while in western India the old Gujarati architecture was treated almost similarly. But much as Muslim architecture was influenced by the indigenous styles of that age, the contribution of the Muslims to the Indian architecture in general is no less interesting. They emphasized the idea of breadth and spaciousness and introduced new forms and colours. Like the Romans they were also responsible for making concrete and mortar as the most important factors of construction. They spanned big spaces with arches and roofed large areas with magnificent domes. Among other architectural features introduced by them mention may be made of the *mīnār* and minaret, the pendentive, squinch arch, stalactite, honey-combing and half-domed double portal. In the field of decoration they introduced arabesque or geometric devices, inscriptions in graceful lettering, gilding and painting in variegated colours, encaustic tile-mosaics and designs in coloured stones and marbles by the artistic methods of tessellating and *pietra dura*.

PRE-MUGHUL ARCHITECTURE OF DELHI

THE SLAVE PERIOD (1206—90)

Among the Muslim monuments of India, the Delhi group rightly occupies the central position inasmuch as it comprises splendid memorials set up in the course of some seven centuries of uninterrupted Muslim rule in India. The first monument founded in Delhi, in 1191, was the Qūwwatu'l-Islām mosque (pl. XXXVII) which Qutbu'd-Dīn Aibak, the founder of the Slave dynasty (1206-1290), had built out of the spoils of many temples to commemorate his capture of Delhi. In it Hindu influence is most predominant: except the five *mīhrābs* in the back-wall the entire building with its walls, capitals, architraves, ceilings, etc., presents an essentially Hindu appearance, which, being alien to Muslim traditions, was probably instrumental in bringing about, within two years of its completion, an arched screen of Islamic design in the prayer-chamber. With the establishment of Muslim rule in India, the Islamic architecture appears to assert itself steadily and Emperor Īltutmish's extension of the Qūwwatu'l-Islām mosque in 1230 is fundamentally Islamic in character and design, although Hindu shafts, capitals and architraves are still there. The earliest tomb in Delhi is that of Sultān Ghārī built by Emperor Īltutmish for his

eldest son, Nāṣiru'd-Dīn Maḥmūd, in 1231-32. Here also the Hindu influence is predominant: the pillars, capitals, architraves and most of the decorative motifs are purely Hindu and even the arches and domes, that are symbolic of Islamic faith and architecture, are built on the principle of Hindu corbel. In the tomb of Īltutmish, built in 1235 behind the north-west corner of the Qūwwatu'l-Islām mosque, Islamic influence is marked by the presence of squinch-arches supporting a domical roof and elaborate carvings comprising religious texts executed in exquisite styles of *Naskh* and *Kūfic* (below, p. 193) and varied designs of arabesques and geometric drapers, but even there Indian features are observable which tend to show that the Indian artisans employed at the tomb had not by that time mastered the designs with which they were working.

THE KHALJĪ PERIOD (1290-1320)

A general reaction against Hindu influences started in the reign of Īltutmish (1211-36) and went on developing steadily until it resulted in revolutionizing the methods of construction and ornamentation in the Khaljī period (1290-1320). For example, the arches in the buildings of Quṭbu'd-Dīn and Īltutmish were constructed by Hindu artisans, according to their traditional methods, in corbelled horizontal courses, but the appearance of arches built on true scientific basis in the tomb of Sultān Ghayāsu'd-Dīn Balban (1266-87) marks a rational advance in construction. The earliest mosque constructed entirely according to Islamic conceptions and with materials specially quarried for the purpose is the Jamā'at Khāna Masjid at the tomb of Ḥaẓrat Nizāmu'd-Dīn Auliya, Delhi. In it the architectural peculiarities of the Khaljīs and the Tughluqs are noticeable. The central chamber is related to have been made by Khizr Khān, son of 'Alāu'd-Dīn Khaljī, and the side-chambers added to it in the early Tughluq period. The walls of the latter are made of plastered rubble instead of sand stone used in the Khaljī construction, while triangular pendentives have also been provided in the side-chambers to support their domes instead of squinches used by the Khaljīs in the central chamber. The 'Alāi Darwāza (pl. XXXVIII), which is a gem of Indo-Islamic architecture, is perfect in symmetry, beauty and grace. Its stately portals, its well-built horse-shoe arches, its wealth of lace-like decoration on the exterior, its well-proportioned linements, its pleasing effect caused by the use of red sandstone and marble, etc., speak of the refined tastes of the architects of the Khaljī period. Of the city-wall of Sirī, built by 'Alāu'd-Dīn Khaljī about 1303, only a few remnants of tapering bastions, loop-holes and battlements are available, but their value lies in providing us with an idea of the military architecture of the Khaljīs.

THE TUGHLUQ PERIOD (1320-1413).

Under the Tughluqs the Indo-Islamic architecture entered a new and austere phase partly because of a general aversion to the extravagances of the Khaljis and partly due to financial and other difficulties such as the dearth of skilled artisans consequent on the forcible transfer of the population of Delhi to Daulatābād in the Deccan in the reign of Muḥammad bin Tughluq (1325-51). Rich ornamentation and elaboration of details that characterized the Khaljī monuments gave place to severe and puritanical simplicity under the Tughluqs. Red sandstone and marble which had a pleasing effect were almost discarded and substituted by rubble and plaster; walls began to be built monotonously bare and the sense of aerial spaciousness, which to some extent compensates for the absence of decoration, became almost extinct. Other typical features of the Tughluq architecture were battered walls, squinch arches, battlemented neckings and crestings and multiplicity of small domes. But this style was not entirely devoid of virtues: its vigour and straight forwardness, its purposefulness, its intersecting vaulting and, above all, its readiness to adapt old structural features to its requirements (as it is evident from its multi-domed roofing and tapering buttresses at the quoins), are the landmarks in the domain of Indo-Islamic architecture. Of the chief monuments of the Tughluq period (1320-1413) in Delhi the fort of Tughlaqābād and the tomb of Tughluq Shāh (pl. XXXIX) are assigned to Ghayās-su'd-Dīn Tughluq Shāh I (1321-25), the fortress of 'Ādilābād, an outwork of the city of Tughlaqābād, and the city of Jahānpanāh to Muḥammad bin Tughluq (1325-51), and the Kotla Fīrūz Shāh with its Jāmi' Masjid, the Hauz Khāṣ group of monuments including the college and tomb, etc., to Fīrūz Shāh Tughluq (1351-88). Whereas the cyclopean walls and colossal bastions of the Tughlaqābād fort give an idea of its sturdy vigour and melancholy but impressive grandeur, the later Tughluq buildings at the Hauz Khāṣ, etc., are staid, work-a-day structures showing also a pleasing combination of Hindu columns and Muslim arch. The Kotla provides us with certain important features of the military architecture of the Tughluq period, viz., the machicoulis, which for the first time appeared in India then, and the absence of berms or galleries leading to the double lines of loop-holes. Another monument of considerable architectural interest is the tomb of Khān-i-Jahān Tilangānī, the prime minister of Fīrūz Shāh Tughluq, who died in 1368. It stands near the Kālī or Sanjar Masjid in the locality of Nizāmuddīn. In general form, it resembles the Dome of the Rock at Jerusalem, for, unlike other tombs of that period, its mortuary-chamber is not square but octagonal, covered by a single dome and surrounded

by a low arched verandah. Its importance lies in the fact that, being of a novel type, it served as a model for the tombs of the Sayyid and Afghān kings in the fifteenth and sixteenth centuries.

THE SAYYID PERIOD (1414-44)

During the Tughluq period mutual reaction had brought about a great change in the ideals of Muslim and Hindu artisans, and their style had become more or less laboured and self-conscious. Animation did return under the Sayyid and Lodī kings, but it could not effectively remove the deadening effect of the Tughluq period. For the royal tombs of the fifteenth and sixteenth centuries the tomb of Khān-i-Jahān Tilangānī at Delhi served as a standard pattern, but the tombs of the Sayyid kings, Mubārak Shāh (1421-34) and Muḥammad Shāh (1434-44), present marked improvements on it: the main domes of the latter have been raised higher than the one of Tilangānī, pinnacles provided at the angles of the polygonal drum, and the height of the verandah, which in Tilangānī's tomb looked too low and disproportionate, was increased, replacing the low subsidiary domes of the model tomb by graceful pillared kiosks. Other distinctive characteristics of the Sayyid style were enamelled tile-decoration, incised plaster-ornament, lotus-finials and certain other Hindu and quasi-Hindu motifs which developed further under the Lodīs.

THE LODI PERIOD (1451-1526)

The tomb of Sikandar Shāh Lodī, which is believed to have been built in 1517-18, is decorated with enamelled tiles of various colours, and its most important structural feature is the *double dome* which subsequently played an important rôle in the evolution of Mughul style. This architectural invention, designed to preserve the symmetry and relative proportions of the body of the building, owes its probable origin to Syria from where it came to India through Iraq and Persia. The monument in which it appeared for the first time is the tomb of Shihābu'd-Dīn Tāj Khān (1501), locally called Bāgh-i-'Ālam-kā-Gumbad, and it was repeated a few years later in the tomb of Sikandar Lodī which, by virtue of the spaciousness and quasi-ornamental appearance of its enclosure, is rightly regarded as a link between the fortified and austere tombs of the Tughluqs and the well-planned gardens of the Mughuls. The best specimen of the Lodī style is the Moth-kī-Masjid built by Miyān Bhoiyā, the prime minister of Sultān Sikandar Shāh (1489-1517). It is the largest mosque of that age, and its storeyed towers at the rear-corners are decidedly more suitable adjuncts than the usual slender minarets available elsewhere. Its domes are better spaced; its

arched openings are of finer proportions, and the combination of white marble, coloured tiling and red sandstone used in its construction is particularly happy.

PROVINCIAL STYLES

The provincial styles of Indo-Muslim architecture sprang up between the thirteenth and fifteenth centuries with distinctive characteristics of their own in the lesser political centres, such as Multān, Bengal, Gujarat, Mālwa, Jaunpur, Kashmir and the Deccan. The last-named is of special importance, for with the disruption of the mighty Bahmanī kingdom of the Deccan five independent principalities were established, the structural achievements of which were so varied and extensive that they also require a detailed study.

MULTĀN STYLE (NINTH-SIXTEENTH CENTURIES)

At Multān there are five monuments of pre-Mughul times, but all of them have been reconstructed and modernized. Of them, the tombs of the famous saint Shāh Bahāul-Ḥaq and Shamsu'd-Dīn, built in the thirteenth century, are similar in design, comprising a square mortuary-chamber, with walls battering on the outside, and surmounted by a high octagon with a hemispherical dome above. The tomb of Shāh Rukn-i-'Ālam, the grandson of Shāh Bahāu'l-Ḥaq, built in 1324, is not square but octagonal, with engaged and tapering minarets buttressing the outer quoins. In surface-ornament and colour-effects it is superior to the Sayyid and Lodī tombs at Delhi, while, as compared with Sher Shāh's tomb at Sahsrām, District Shāhābād (Bihar), its design is more Persian in spirit, although many features of it are undoubtedly Indian.

BENGAL STYLE (TWELFTH-SIXTEENTH CENTURIES)

In Bengal, the most important structural features of pre-Muslim times were the curvilinear roof, commonly called Bengali roof, square and stunted brick pillars and slender stone columns, while their surface-decorations were generally carved and moulded. After the conquest of Bengal by Muḥammad Bakhtiyār in 1198-99, the Muslims made use of these features and also introduced pointed arches constructed on the corbel-system, but it is disappointing to find that, unlike northern India, the fusion of the two styles of construction in Bengal did not prove successful. A close examination of the ruins of Gaur and Pānduā reveals that the resulting school of architecture was deficient in correct imagination necessary to adapt the form to the size, with the result that the component parts of its buildings are often out of proportion, the form of its Bengali roof is less appropriate in brick or stone, and its surface-decoration

in relief work or enamelled tiles shows poverty of aesthetic perception. The Dākhil Darwāza at Gaur is no doubt an excellent specimen of what can be achieved in brick and terracotta and in which structural and decorative beauty has co-ordinated so well. The reliefs in the Gunmat mosque and Chhotā Sonā Masjid at Gaur were inspired by those in an older mosque, named Ādīna Masjid at Pāṇḍuā, but the original model is far superior to its copy both technically and artistically. The mosque at Bāghā is of no particular architectural pretension, but its interest lies in illustrating the gradual decadence of building-art in Bengal.

GUJARAT STYLE (FOURTEENTH-SIXTEENTH CENTURIES)

The indigenous style of western India at the time of the conquest of Gujarat in 1297 by 'Alāu'd-Dīn Khaljī was characterized by a breadth and spaciousness combined with a chaste and graceful elegance. The Khaljī style being then at its zenith, the craftsmen who came from Delhi to Gujarat introduced that sense for symmetry and proportion which had been the distinctive feature of the imperial architecture of Delhi and helped to evolve a new school of Gujarati art of building. Though virtually founded early in the fourteenth century, the Gujarati architecture did not make much headway until the independence of Ahmad Shāh I (1411-42), to whom is assigned the foundation of the city of Ahmadābād, the construction of the forts of Songarh Dohad and Ahmadnagar and several other buildings, chief of which are the Tīn Darwāza and the Jāmi' Masjid at Ahmadābād. The architectural importance of the Tīn Darwāza lies in the perfect proportions and delicate framing of its archways set off against the ornamented buttresses, while the Jāmi' Masjid is rightly prized for its well-proportioned stately arches, its well-arranged domes built on the Hindu corbel-system, its *mīnārs* blended harmoniously with the design, its elegant carved mouldings and string-courses, its shapely battlements, its traceried windows and its exquisite arabesques. But the Gujarati style actually reached its highest perfection during the reign of Mahmūd Begarha (1458-1511) who founded the cities of Mustafābād, Mahmūdābād and Muhammadābād and erected numerous buildings of considerable architectural interest. His mosques at Chāmpānir including the Jāmi' Masjid are second to none in the east in so far as perfection of detail and decorative beauty are concerned, the only defect in them being that their minarets are rather cumbrous in relation to the rest of the structure. In Gujarat, unlike other places in India, the trabeate system was so deep-rooted that it could not make way for the arcuate and the builders, therefore, followed their old methods in constructing even the tombs except that they used structural domes instead of the older corbelled roofs.

These features are noticeable in the tombs of the fifteenth century, viz., the tomb of Maḥmūd Begarha at Sarkhej, the Rauza of Sayyid Usmān at Ahmadābād, and the Maqbara of Bibī Achut Kūkī. There are, however, a few tombs in which arch and vault have been used, e.g., the tombs of Shāh 'Ālam and Mubārak Sayyid at Maḥmūdābād, but owing to the builders' ignorance of arcuate construction they lack the desired sublimity and grandeur evidenced in the tombs of northern India and the Deccan. The mosque of Sīdī Sayyid at Ahmadābād, built about 1514, possesses elegant perforated screens, a common feature of decoration in all the architecture of Gujarat. In it the palm and parasite-motif has been treated so artistically and aesthetically that it can successfully compete with the applied art of any other country. The impressive step-wells built by Bāi Harir in 1499-1500 are a matchless production of Gujarat designed on the same lines as the older step-wells of the Hindus.

MĀLWA STEYL (FOURTEENTH-SIXTEENTH CENTURIES)

Unlike Gujarat, Mālwa possessed no particular style of architecture vigorous enough to impress its Muslim conquerors at the close of the fourteenth century and so the new-comers had to look for their structural inspiration to Delhi; hence the marked influence of the early and late Tughluq styles as well as of the Sayyid and Lodī architecture on the buildings of Dhār and Māṇḍu. At these places the battering walls and pointed arch with spear-head fringe of the early Tughluqs, the arch-lintel bracket of Fīrūz Shāh Tughluq, the dome and pyramidal roof of the Lodīs, etc., are clearly noticeable. But the Delhi craftsmen commissioned to erect buildings in Mālwa did not fail to make use of the indigenous elements and motifs and this fusion brought about a new school of architecture in which, besides the features detailed above, one comes across the clever devices of combining the two structural systems of the arch with the pillar and beam, high flights of steps leading to the entrances of buildings erected on high plinths, and colour-ornaments of encaustic tiles and glazed stones of various colours.

The Mālwa style has three phases. In the first phase, which began about the year 1401, we see the temples at Dhār and Māṇḍu converted into mosques, but in so doing the Mālwa artisans, unlike those at Delhi, introduced into the structure a sufficient amount of new work so as to produce a homogeneous whole. Instances of such skilful adjustments can be found in the pillars and arches of the outer portions of the Lāṭ-kī-Masjid at Dhār and the mosque of Malik

Mughis at Māṇḍu (pl. XLVII), the latter being the finest and the most typical of its kind. The second or the classical phase begins with the transfer of the capital from Dhār to Māṇḍu and represents buildings of an original character, sober and massive. Among the most interesting buildings of this period were the Jāmi' Masjid and the Hindola Maḥal or the darbar hall at Māṇḍu, the former being planned and commenced by the Ghūrid king Hushang Shāh (1405-35) but completed by Sultān Maḥmūd Khaljī (1436-69). The mosque is approached by a noble flight of steps and its entrance-hall bears traces of exquisitely-coloured borders and panels in glazed tiles. In its construction the builders cared more for its colourful ornamentation than for its sound structure and, as a whole, the building shows a change in the building-art probably owing to the replacement of the Ghūrid dynasty (1392-1436) by the Khaljīs (1436-1531). The third phase came during the reign of the Khaljīs in Mālwa when a fanciful type of buildings began to be commonly set up; its luxurious effects are visible in the pavilions, kiosks, pillared courts, balconied turrets and colonnaded terraces built by Ghayāsu'd-Dīn Khaljī (1469-1500) towards the close of the fifteenth century. The Jahāz Maḥal, probably built by Maḥmūd Khaljī I (1436-69), represents this last phase. Well-situated as it is, it does not possess that ponderous walling or that appearance of stolid dignity which characterize the incongruously bulky structure of the Hindola Maḥal noticed above; on the other hand, the brightly-coloured glaze of its friezes, open pavilions, light kiosks overhanging balconies—all reflected in the still waters of the lake—impart to it a very lively and entertaining appearance. At Chanderi (now in the Gwalior State), there is a group of five monuments wherein there are indications of an infiltration of the Gujarat style probably due to the recruitment of artisans from Ahmadābād for their construction. The Kushk Maḥal of Sultān Maḥmūd I of Mālwa, built about 1445, is a specimen of the Mālwa style at its most vigorous stage, while in the Jāmi' Masjid at Chanderi the external influence is noticeable in the convoluted brackets supporting the eaves along with the Mālwa characteristics displayed by the three stilted domes over the prayer-chamber and by the arches in the façade. The palace of Bāz Bahādūr with Rūpmatī's pavilion on the hill is pleasing in design and sincere in purpose, but it displays signs of the loss of the original dynamic energy of the Māṇḍu school of architecture. The monuments at Nagaur and Jalor (Jodhpur State) evince strong influence of Gujarati style in possessing sharply-tapering minarets, high narrow archway, clerestory gallery under the central dome, etc. These characteristic features are found in the mosque of Shams Khān at Nagaur built in the fifteenth century as well as in the mosque of Muẓaffar Shāh II (1511-26) and the Topkhāna Masjid in the fort at Jalor.

SHARQI OR JAUNPUR STYLE (FOURTEENTH-FIFTEENTH CENTURIES)

Jaunpur was founded by Firūz Shāh Tughluq in 1359-60, but its architectural history virtually begins with its independence under Khwāja-i-Jahān in 1394. Replete as Jaunpur was with fine monuments of the Sharqī kings, they suffered terribly at the hands of Sikandar Lodī (1489-1517) after his victory over Ḥusain Shāh in 1495. The few buildings founded in the fourteenth century which escaped destruction are the mosque and fort of Ibrāhīm Nāib Bārbak (built respectively in 1376 and 1377), the Aṭāla Masjid (erected by Khwāja Kāmil Khān in 1378 and completed by Ibrāhīm Shāh Sharqī in 1408), the Lāl Darwāza Masjid (set up by Maḥmūd Shāh—1440-56), and the Jāmi' Masjid of Ḥusain Shāh (1458-79). On plan the Aṭāla Masjid is exactly like most Indian mosques and closely resembles the mosques of the Tughluqs in certain aspects, such as the domes over the prayer-chamber, the shapely tapering minarets, the *kangura*-cornices and string-courses. It differs from them in being more ornate and in possessing the propylon-screen which are a distinctive feature of the Sharqī style. The style of the Lāl Darwāza Masjid and the Aṭāla Masjid is more markedly Hindu and the tradition that their architects were Hindus is probably correct. The Jāmi' Masjid of Ḥusain Shāh (pl. XLVIII) is decidedly an improvement on its predecessors in respect of the general planning and disposition of its parts. Notwithstanding its close resemblance to the Aṭāla Masjid, its domed *līwān* is more noble and imposing and its vaulted wings are better conceived. But like others the Jāmi' Masjid also has the usual defects of the Jaunpur school that in general it lacks rhythm and its propylon which towers abrupt above seems to be an incongruous adjunct, structurally or artistically, to the rest of the monument.

DECCAN STYLES

Unlike other Muslim rulers of India, the Deccan overlords largely ignored the indigenous art of building prevalent in their dominion with the result that the Deccan style is of a regional character consisting of the distinctive characteristics of the imperial buildings at Delhi and those of the famous monuments of Persia. The buildings of the early period (1294-1347), viz., the Jāmi' Masjid at Daulatābād and the Deval mosque at Bodhan, are of no architectural interest and being merely an adaptation of the Hindu temples to suit their new purpose they cannot be supposed to have any notable bearing on the building-art of the Deccan.

Bahmanī style (1347-1527)

In 1347 the Bahmanī dynasty was established and from that date to the beginning of the fifteenth century the Bahmanīs drew their inspiration largely from the imperial architecture of Delhi, and in this respect the forcible transportation of artisans from Delhi to Daulatābād in the reign of Muḥammad bin Tughluq (1325-51) played an important part in the evolution of the Deccan architecture. But the Bahmanī kings being great patrons of arts and sciences, their court did not fail to attract eminent scholars and expert technicians of other countries, and it was on this account that in the fifteenth century their military architecture is found much influenced by Europe and their civil architecture by Persia. During that period a great number of forts were built at Daulatābād, Gāwilgarh, Narnāla, Parenda, Nāldrug, Gulbarga, Bīdar, Warangal, Golconda, etc., of which the most remarkable perhaps are those at Bīdar and Parenda, their scarp-walls, strengthened by bastions and provided with loop-holes, battlements and projecting galleries coupled with other structural arrangements of military nature, being very similar to those available in the military architecture of medieval Europe. Among the chief civil structures of Persian nature built in the fifteenth century mention may be made of the Jāmi' Masjid at Gulbarga, the Chānd Mīnār at Daulatābād and the Madrasa or college of Maḥmūd Gāwān at Bīdar.

The Bahmanī kings established their capital first at Gulbarga and afterwards at Bīdar; hence the richness of those places in beautiful buildings of that period. At Gulbarga, there are two groups of royal tombs which in their general form and plan are very much alike, but their detailed features are expressive of the various phases of the Deccan architecture. The tomb of Ḥasan, the founder of the Bahmanī dynasty (1347-58), is typical of the Tughluq style in having battering walls and low domes, fluted turrets, tall narrow doorways and band of blue enamel tiles below the dome, while the tombs of Ghayāsu'd-Dīn (d. 1397) and Tāju'd-Dīn Firūz (1397-1422) reveal the steady growth of Hindu influence in their carvings, polished stone pilasters, eaves and brackets and of Persian ornament in the bright plaster and painted decorations of the interior resembling those traceable in the contemporary tombs of the Sayyid and Lodī kings at Delhi. The Jāmi' Masjid of Muḥammad Shāh Bahmanī (1358-75) at Gulbarga has two salient features. The broad squat arch, which is a characteristic of the Deccan style, was first used here, while the courtyard which is usually open to the sky is here covered by sixtythree small domes carried on arched bays.

Like Gulbarga, Bīdar also has two groups of royal tombs: one of the later Bahmanī kings and the other of the Barīd Shāhīs. The

former, though larger in proportions and more embellished with arched recesses or screened windows, are similar to those at Gulbarga. The finest tomb of this group is that of Aḥmad Shāh Valī (1422-36) ornamented with coloured paintings in the Persian style and adorned with inscriptions artistically executed in gold on a blue surface. The Jāmi' Masjid and Sola Khambā Masjid at Bīdar are unaffected in style and in them one notices the usual plan of the mosque as having an open courtyard, pillared prayer-chamber and nave covered by a dome. The Madrasa of Maḥmūd Gāwān, the learned Persian minister of Muḥammad Shāh III (1463-82), resembles the stately university-buildings in Persia and its façade is exquisitely overlaid with patterns of glazed tiles.

Ādil Shāhī or Bījāpur style (1490-1686)

The Persian influence which made its appearance and also substantially developed in the time of the Bahmanīs (1347-1527) became more and more marked in the reigns of their successors, viz., the 'Imād Shāhīs of Berar (1490-1574), the Barīd Shāhīs of Bīdar (1487-1619), the 'Ādil Shāhīs of Bījāpur (1490-1686), the Nizām Shāhīs of Ahmadnagar (1490-1633) and the Quṭb Shāhīs of Golconda (1512-1687). The magnificent monuments at Bījāpur, however, show a steady decline of this foreign influence and the consequential revival of Indian artistry. The *Rauza* or tomb of Ibrāhīm 'Ādil Shāh I (1534-58) is the most ornate and most perfect of its kind. In his mosque nearby the skilful disposition of the arches has provided a subtle variety in the voids while its tall *mīnār*-like turrets and beautiful bulbous dome on the battlemented upper storey contribute much to its grace and general appearance. The Gol Gumbaz at Bījāpur (pl. XLVI) is the tomb of Muḥammad 'Ādil Shāh (1627-57), a contemporary of Emperor Shāh Jahān. Tradition asserts that Muḥammad 'Ādil Shāh found it impossible to conceive a design for his mausoleum better than that of the *Rauza* of Ibrāhīm 'Ādil Shāh noticed above and so he decided to excel it in size; hence its being one of the largest buildings in India. It is a walled enclosure and comprises a mausoleum, a mosque, a *naqqārkhāna* or drum-house, a *dharma-sālā* or rest-house, a gateway and other necessary structures associated with a royal tomb. It was commenced during the latter part of the reign of its founder who did not live long enough to see its completion. It is cubical from outside, with a tower at each angle and a large plastered hemispherical dome above built of horizontal courses of brick in mortar. The big dome is like a homogeneous inverted bowl of concrete reinforced with bricks. Among its subsidiary forms, the shapely projecting cornice, closely set brackets, massive but graceful merlons breaking the skyline, shallow arches in each face of the main wall and

the larger archway in the centre, etc., deserve special notice. The method of supporting the dome by a combination of intersecting arches was not known to the dome-builders of India then, and its first appearance in the Gol Gumbaz gives great credit to the Bījāpūr artisans.

Fārūqī or Khāndesh style (1382-1601)

Khāndesh, situated in the north-west of the Deccan, was ruled by the Fārūqī Khāns for about 219 years (1382-1601). It had no independent style of its own but drew its architectural inspiration from Gujarat and Mālwa. One of the tombs at Thalner bearing an inscription of Miran Mubārak is much similar to that of Hushang Shāh at Māṇḍu except that the former has wider spacing of the doors and windows, emphasizes the parapet over the dripstones and elevates the dome by means of an octagonal drum with stilted sides. The Jāmi 'Masjid, built by 'Ādil Shāh IV (Rāja 'Alī Khān) in 1578 at Burhanpur, has fifteen pointed arches in the façade flanked by two tall minarets—a feature borrowed from the later mosques of Gujarat. The closed variety of the façade of the Bibī-kī-Masjid at Burhanpur and its large central archway between substantial minarets owe their origin to a particular type of mosques at Ahmadābād, but the originality of the Khāndesh style mainly lies in the construction of the minarets the upper portions of which have oriel windows provided with projecting balconies and the top of which is crowned by a spherical cupola.

Barīd Shāhī or Late Bīdar style (1487-1619)

Under the Barīd Shāhīs of Bīdar the tomb-architecture of the Deccan developed considerably and the finest specimen of it is the tomb of 'Alī Barīd (1542-79) which, though simple in design, is Persian in feeling. Unlike the closed tombs of the previous dynasty, it is an open structure with an archway in each of its four sides. Its dome is bulbous and besides coloured tilework its inscriptional decoration is very artistic.

Quṭb Shāhī or Golconda style (1512-1687)

Being equally rich and powerful the Quṭb Shāhī kings of Golconda (1512-1687) were not behind other provincial rulers in adorning their state with palatial buildings which comprised residential houses (now in ruins) in the once-fortified city of Golconda, elegant tombs, magnificent mosques and stately memorials. Their tombs show a marked increase in the use of involuted moulded patterns, fanciful finials and purposeless battlements, while their domes have become of a full-blown bulbous character with the addition of a massive

calyx-formation at the base. Here the dome is not double as is noticed in the Mughul monuments of northern India but the mortuary-chamber under it is covered with a carved ceiling leaving the rest of the dome a great void. The tombs of Muḥammad Qulī Qutb Shāh (1580-1612) and 'Abdullāh Qutb Shāh (1626-72) are of special architectural interest, the latter being double-storeyed with a hanging balcony elaborated with perforated panels, merlons and a number of pinnacles. The Qutb Shāhi mosque-architecture of the seventeenth century is represented at Hyderabad by the magnificent Jāmi' Masjid, the Mecca Masjid and the Mushīrābād Masjid as well as by a small well-finished mosque, known as the Tolī Masjid. Of all the monuments, however, the best specimen of the Qutb Shāhī style is a triumphal archway, called the Chār Mīnāra (or Four Pillars), built in 1591. It is of the same position and appearance as the Tin Darwāza at Ahmadābād and its entire composition together with its graceful *mīnārs* displays vigour and inventiveness.

PHASES OF KASHMIR ARCHITECTURE

The Kashmir architecture has three phases: the first represents the stone edifices of the Buddhist-Hindu period during the first millennium with which we are not concerned here, the second the wooden architecture under the Muslims in the fourteenth and fifteenth centuries and the third the Mughul style of stone architecture during the sixteenth and seventeenth centuries. Although there are indications of the indigenous wood architecture of Kashmir dating as far back as the first millennium, very few wooden monuments even of the early Muslim period have survived the ravages of fire which has been making a great havoc with such inflammable structures at frequent intervals. The superabundance of serviceable timber and the comparative scarcity of stone in the Kashmir valley are responsible for the indigenous exquisite workmanship in wood. The bridges built over the river Jhelum at Srinagar on the cantilever principle display the age-old simple method of log construction, while in the residential houses of a better type the logs are found squared with the spaces between each course filled with brickwork or glazed tiles. In short the Kashmir buildings mostly do not possess struts, trusses and other devices to produce lateral rigidity, as the keynote of their construction is to secure a deadweight bearing downwards like what one comes across in the stone temples of ancient times. The Muslim tombs and mosques in Kashmir have certain common features: they have a lower cubical hall or chamber and a pyramidal roof often in tiers with a slender spire above, the only main difference being in the latter's possessing also a square open pavilion which serves as a *mīnār* or *māzina* for the muazzin.

to call to prayers. The two-storeyed mosque of Shāh Hamadān at Srinagar is a typical specimen of the wooden architecture. It is square on plan and has a pyramidal roof over which is the *māzina* surmounted by the steeple with its pinnacle. Its tapering eight-sided pillars with foliated bases and capitals, its arched and recessed *mihrāb*, its panelled walls and painted ceiling are expressive of its artistic treatment. The Jāmi' Masjid at Srinagar is the best architectural achievement in wood of the fifteenth century. Founded by King Sikandar Butshikan (1393-94) and enlarged by his son, Zainu'l-'Ābidīn (1420-70), its interior is rich in timberwork which, though traditionally known to have been damaged by fire thrice, was reconstructed after the original by Emperor Aurangzeb (1658-1707) and again renovated a few years ago without altering its original features. In conception it is of the orthodox mosque plan comprising, as usual, a courtyard surrounded by an arched arcade, a beautiful nave and a pyramidal roof and steeple. Its elegance lies chiefly in its pillared aisles and cloisters as well as in its nave displaying the qualities of breadth and spaciousness. Among the instances of adopting the Hindu remains to Muslim use mention may be made of the tomb of Zainu'l-'Ābidīn's mother at Srinagar with a cluster of five cupolas, *ziārat* (or tomb) of Pīr Ḥājī Muḥammad Sāhib at Srinagar, *rauza* and mosque of Madanī in the suburb of Zadibal and the Jāmi' Masjid at Pampur. In these converted monuments the use of brick and glazed tile is suggestive of Persian influence which, however, could not appreciably overpower the firmly-established timber-tradition of Kashmir. The art of stone building was revived here by the Mughuls in the sixteenth and seventeenth centuries as is evident from the fort of Hari Parbat constructed by the Emperor Akbar (1556-1605), the Patthar Masjid (or stone mosque) built by Empress Nūr Jahān in 1623 and the mosque of Akhun Mullā Shāh erected in 1649—all executed in the grey limestone of Kashmir. Stately and dignified as the citadel is, Akbar is reported to have imported Indian master-builders for its construction as the Kashmiri craftsmen were deficient in the art of brick and stone building. The two above-mentioned mosques are remarkable for the simplicity of their surface-treatment without the slightest approach to being aggressive, while the graceful curves in the archways of the latter are artistic and pleasing. Finally, mention may be made of the sumptuous pleasantries or summer-resorts such as the Parī Maḥal (or Fairy Palace) overlooking the Dal lake and the *Bāradarī* in the Shālamār Garden, erected by the Mughul emperors. Architecturally they are of no particular significance, but the latter may be rightly proud of the pleasing proportions of its various parts and of the happy arrangement of its black stone pillars and ornamented brackets.

MUGHUL ARCHITECTURE

With the establishment of the Mughul empire in India in 1526 dawned a new era of architecture. Of all the figures that move across the pages of Indian history Bābur, the founder of the Mughul dynasty (1526-30), was one of the most dynamic, for, besides being a great general, he was a great patron of art and learning and never failed to appreciate the beautiful in its widest sense. His memorable *Memoirs* speak of a good many ornamental gardens, pleasantries, mosques and wells constructed under his orders in the short course of his reign, but unfortunately only a few of them have escaped the ravages of time. After a brief and much disturbed reign of 10 years his son, Humāyūn, was driven out of India in 1540 by an Afghān usurper, Sher Shāh Sūr (1540-45), to spend about 15 years in exile and died soon after the reconquest of his lost throne of Delhi in 1555; hence his structural contributions are of no greater consequence than those of his imperial father. In fact, the florid Mughul architecture known for its surpassing exuberance and perfection in details did not take concrete form until Akbar's reign (1556-1605), and for the sake of convenience it may be taken to resolve itself into three main phases, viz., Early Mughul relating to the buildings principally constructed of red sandstone during the reigns of Akbar (1556-1605) and his son Jahāngīr (1605-27), Late Mughul or Shāh Jahān's period (1627-58) when white marble was extensively used to suit the fastidious taste of that monarch and the art of construction reached its zenith, and Later Mughul when decadence set in during the reigns of Aurangzīb (1658-1707) and his successors down to Bahādur Shāh II (1837-57). But before taking it up at some length it is desirable to sketch in a few words the Sūrī style noticed above, which had a short-lived glory of only fifteen years (1540-55) during the reigns of Sher Shāh and his successors Islām Shāh and others.

THE SŪRĪ STYLE (1540-55)

The Sūrī architecture begins in great sobriety and elegance and ends in exuberance of decoration and, on account of its close similarity with the Early Mughul style of Akbar, scholars are inclined to think that the history of Mughul architecture really begins with Sher Shāh's monuments. The most perfect of Sher Shāh's buildings is his mosque (pl. XL) built in 1541 in the Purānā Qila' at Delhi. It is one bay deep with five openings in front through pointed arches of Tudor form and the prayer-chamber including the *mīhrābs* embellished in good taste. The brackets are of the type used by Akbar in his fort at Agra and the pendentines below the dome are very impressive. The tomb of Sher Shāh at Sahsrām,

in District Shāhābād, Bihar (*circa* 1540), called a masterpiece of architecture, resembles the tomb of Muḥammad Ghaus to a considerable extent and is a happy improvement on a Lodī tomb of octagonal type. In style it is severe and simple. Its bold octagonal pavilions at the four corners of the terrace, its magnificent central dome, its small bracketed kiosks designed to break pleasingly the outline, its octagonal kiosks artistically placed round the dome with a view to relieve the monotony of the composition without impairing its solidity or solemnity and, above all, its unrivalled setting in the entire unique composition are expressive of the most imaginative architectural conceptions of that age. In regard to the mosques in general of that period, the façades were more ornamental than those of the Tughluqs; inscriptional decorations were richer and more artistic; small kiosks supported by richly-bracketed pillars graced the corners in place of minarets; the prayer-chamber was oblong with a central dome above; and the pendentives were more elaborate in detail than the arches.

EARLY MUGHUL STYLE (1556-1627)

To return, however, to the Mughul architecture. Leaving aside the few mosques of no distinctive architectural merit set up by Bābur and Humāyūn during the formative years of the Mughul empire, the first monument of Early Mughul style is the tomb of Humāyūn (pl. XLI) which is rightly regarded as a landmark in the development of that architecture. It was built by Sharfu'n-Nisā Begam, better known as Hājji Begam, the devoted wife of Humāyūn, in 1565-66, over the remains of her sovereign-lord and, by an irony of fate, it served as a model for the tomb of Mumtāz Maḥal, wife of Shāh Jahān, when the latter monarch wanted to create a noble memorial to his beloved queen, the lady of the Tāj, in 1631. Its architect is said to have been a Persian, named Mirak Mīrzā Ghayās, and this fact is amply borne out by a number of outstanding Persian conceptions in its construction. For instance, a dome of this particular form, an arched alcove like this in the façade, the interior arrangement of corridors and the complex of rooms exhibited in this tomb were until then foreign to India but known in Persia. But that the mausoleum is a successful result of the blending of the Persian and Indian styles is apparent from several indigenous elements in its composition such as elegant kiosks with cupolas, excellent stone masonry artistically combined with marble, etc. Although the grouping of the kiosks on the roof is not artistic, yet the interplay of its surfaces and planes, the proper distribution of the voids, the admirable blending of red sandstone and white marble as well as the graceful but bold curves of the arches contribute greatly to the superb effect of the mausoleum as a whole.

Another monument, much of the same character, is the tomb of Atgah Khān, a minister of Akbar killed in 1562. Although smaller in dimension, the latter, built in 1566-67, is decidedly an improvement on its model inasmuch as the detailed treatment of its façade with inlaid coloured marbles and its low relief-carvings are superior to those in the former.

An indefatigable builder as Akbar was, there are scores of buildings to his credit at Agra, Allahabad and elsewhere and more particularly at his newly-founded capital of Fatehpur Sīkrī, 24 miles from Agra, but it is not possible to examine every one of them critically in these pages. Unlike most Muslim rulers of India including the Mughul emperors, Akbar's building policy was to encourage the indigenous systems of construction and to borrow those of other countries only when the former proved ineffective. His buildings are mostly of red sandstone easily procurable, with insertions of white marble here and there for the sake of emphasis. His architecture was of the trabeate order but the use of the Tudor arch in decorating his arcades tends to suggest that his style was arcuate and trabeate almost equally. The domes were usually hollow like those of the Lodī period, the pillar-shafts often many-sided and the capitals invariably in the form of brackets. His ornamental devices consisted of carvings of bold inlay-work, pierced traceries, etc., while the interior walls and ceilings were artistically painted in gold and colours.

At Fatehpur Sīkrī there is a great complex of magnificent residential, official and religious buildings that amply speak of the most spectacular structural achievements of Akbar. The architecture of Fatehpur Sīkrī is in every respect a matured style. The Jāmi' Masjid (pl. XLII) with its ornate central prayer-chamber, spacious courtyard surrounded by arched cloisters and entered by majestic gateways is second to none in India. It is more arcuate in structure than the secular buildings which are mainly trabeate. In its spacious court stand the tombs of Shaikh Salīm Chishtī and his grandson, Islām Khān. The former, which on account of its beauty, elegance and exquisite workmanship is rightly regarded as a gem set in a ring of sandstone, is of white marble with its pierced tracery of excellent geometric patterns and a deep cornice of marble supported by fantastic serpentine brackets like those found in the temples of Gujarat, but the latter, which is soberer and in excellent taste, has been eclipsed by its surroundings. The palace of Jodh Bāi is complete in its design and arrangements and its carved decoration, the general form of its niches and brackets being similar to those found in the temple-architecture of western India, it has been thought that the craftsmen responsible for this work were

probably brought from Gujarat. Among the official edifices at Fatehpur Sikrī the Dīwān-i-Khāṣ is the most distinctive. Although not dissimilar to the other secular buildings externally, the Dīwān-i-Khāṣ possesses unique interior arrangements in having a massive central column exquisitely carved with its expanding capital supporting a circular stone platform from which bridge-like passages radiate right up to the hanging galleries. Among the richest and most ornate buildings erected by Akbar at Fatehpur Sikrī mention may be made of the Turkish Sultānā's House and the so-called Bīrbal's House which, though small, are exceedingly picturesque in outline and despite their profusely carved ornamentation they are without the slightest approach to being overdone or being in bad taste. The Agra Fort, built in 1565-73, is one of the most outstanding structural achievements of Akbar who displayed in it an originality and spontaneity of a new era of architecture. It is important not only in providing us with the military architecture of the Early Mughuls but in proving that aesthetic taste and artistic feeling of its builders had been brought to bear all along on the construction of even such rough elements of a fortress as battlements, embrasures, machicolations, string-courses, etc.

The reign of Jahāngīr (1605-27), although known for the development of fine arts and the introduction of a new school of miniature-painting under the royal patronage, is relatively uneventful in the field of architecture. The style of his construction is almost similar to that of his father, Akbar, the only difference being that the former's style of building shows signs of assuming a pretty, rather than a forceful, character. Among the garden-houses and other fabrics erected by Jahāngīr at Agra, Lahore and Kashmir, the three-storeyed tomb of Akbar, built 1613-14, stands most conspicuous, wherein a departure has been made from the conventional domed structure then prevalent. Curious as its design is for a royal tomb, its idea seems to have been borrowed from some ancient Buddhist *vihāra*, and Fergusson thinks that probably the original design provided a domical chamber over the tomb-stone now exposed to the air and that without it the tomb presents the appearance of a pyramid, truncated and unmeaning. Its carvings are exquisite and paintings in gold and colours artistic. Its inlay-work, both geometric and floral, is bold but pleasing. Its minarets are of a new type that had not been introduced in northern India until then, and the plan of its gardens suggests how cleverly the designs of this huge fabric and its vast gardens were worked out in order to produce a unified composition.

Another interesting building which belongs to his reign is the tomb of 'Itimādu'd-Daulah at Agra (pl. XLIII) built by his favourite

wife, Nūr Jahān, in 1627-28 over the remains of her father, Mīrzā Ghayās. Situated on the left bank of the Jamna, it stands, like other Mughul tombs, on a raised platform in the midst of a walled garden and has a broad octagonal tower, rather squat in proportion, at each of its angles. It really marks the stage of transition and serves as a connecting link between the styles of Akbar and Shāh Jahān. So far, the inlaid decoration had been of a particular kind, known as *opus sectile*, but this monument marks the epoch when the art assumed the form of *pietra dura* which reached its perfection at the Tāj in the reign of Shāh Jahān (1627-58). It does not possess much ornamentation in relief and its inlaid work helps to subdue the undue brilliance of the chaste, white marble of which it is made. Being designed as the last resting place of a distinguished Persian nobleman, a strong Persian influence pervades the whole building as the familiar Persian motifs—rose-water vessels, grapes, wine-goblets, the cypress, etc.—tend to show. The delicate tracery of the pierced marble slabs of its windows and balcony resembles that of Shaikh Salīm Chishtī's tomb at Fatehpur Sikrī and the entire expression of its style in its refined aspect seems to have been aimed at exquisite finish in disregard of its size.

Up to 1614 when the main gate of Akbar's tomb at Sikandara was built, infinite varieties of mosaics of coloured marble, but few of inlay, are available, whereas in 'Itimādu'd-Daulah's tomb perfect specimens of both systems are present. In the reign of Shāh Jahān (1627-68) the mosaic disappears and is supplanted by inlay in precious stones—*pietra dura*—which is wrongly supposed to have come to India from Florence. Although there were European artists in the service of Emperors Jahāngīr and Shāh Jahān, there is no definite evidence to show that they held responsible positions. The only European artist of note employed by Shāh Jahān was Austin de Bordeaux, a renegade French jeweller, who is reported to have worked at the throne-room in the Delhi Fort in executing the *pietra dura* work depicting Orpheus playing to the beasts and birds, while eminent artists from Shiraz, Turkey, Baghdad, Samarkand, Kanauj, etc., are mentioned to have held high posts and enjoyed royal favour. In fact, the Indian artists had a developed style of their own and they did not *adopt* any foreign process but did *adapt* it skilfully to their own requirements.

SHĀH JAHĀN'S STYLE (1627-58)

The reign of Emperor Shāh Jahān (1627-58) is characterized by the introduction of a new style of building-art of exceptional elegance and splendour. In the annals of architecture in general no greater and more sudden contrast is traceable than that which is

noticed between the styles of Akbar and Shāh Jahān, the former being robust and exuberant and the latter elegant and effeminate. The monument wherein the contrast appears most marked is the Agra Fort where passing through the red sandstone palaces of Akbar and Jahāngīr one enters the Khāṣ Maḥal of Shāh Jahān built of white marble in the typical elegant style of his period. A critical study of Shāh Jahān's buildings reveals a marked change in the arch which became multifoil, usually containing nine cusps, so that arcades of engrailed arches came to be the order of the day. His dome, which is of the Persian type, is bulbous but high-drummed and constricted at its neck with the result that double-doming was generally considered necessary to conceal its hideous void below. His pillars have foliated bases, tapering shafts and voluted capitals and the introduction of double columns in some of his monuments has added much to their grace. He also built vaulted ceilings, Bengali pavilions and semi-circular arches with fine scroll-work in their spandrels. An artistic treatment of marble inlaid with semi-precious stones exquisitely blended in colour to represent the petals and curving tendrils of conventional flowers is a characteristic feature of his decorative art. His was an age of marble and so the change of technique in the plastic decoration of his buildings was largely due to the textural quality of that stone which, on account of its delicate graining, had to be inlaid with semi-precious coloured stones rather than treated conventionally like the red sandstone of Akbar's structures.

Like his grandfather Akbar, Shāh Jahān was the author of numerous elegant buildings at Agra, Delhi, Lahore, Srīnagar, Ajmer, etc., only a few of which are noticed here.

Of all the structural feats of Shāh Jahān, the Tāj at Agra (pl. XLIV) is the most perfect materialized vision of rare and silent beauty and ranks amongst the finest tombs of the world. It was built for his favourite wife, Arjumand Bānū Begam, better known as Mumtāzu'z-Zamānī or Mumtāz Maḥal, but he also was buried there in 1666. The marble mausoleum was commenced in 1631 and together with its appertenances—the mosque on the west, the Jawāb or Mihmānkhāna on the east, the main gateway on the south, the outer court and its cloisters—it was completed in 1653. A Persian epigraph recently discovered shows that it was designed by Ustā Ahmad of Lahore and so the belief of Austin de Bordeaux or Geromino Veroneo having been the designers of the Tāj falls to the ground. The dome was constructed by Ismā'il Khān of Turkey, the inscriptions executed by Amānat Khān of Shiraz, and the superintendence of the entire construction was entrusted to Makramat Khān and Mīr 'Abdu'l Karīm. The white marble

of which it is built came from the Makrāna and Raiwāla quarries in Jaipur State, the red sandstone from the neighbourhood of Agra and the jewels and precious stones with which it is inlaid from Persia and various other parts of the world. The designer of the Tāj seems to have derived his inspiration from the above-mentioned tombs of Humāyūn and Khān-i-Khānān which it resembles in certain structural aspects specially in the arrangement of its interior compartments. Its general character of femininity apparent in its chaste appearance, plastic delicacy, pleasing contours, etc., is regarded as an intentional tribute to the lady of the Tāj but, in fact, it was also the leading spirit of that period. Its domes are of two different types, the large central one being Persian, while the smaller ones, unconstricted at their base, Indian. The chaste white marble used in its construction possesses a natural quality of varying in tint and tone with the hard and soft lights to which it is exposed; hence the peculiar grace and loveliness of the Tāj at all hours of the day and under all weather-conditions.

The Motī Masjid (or Pearl mosque) in the Agra Fort ranks high among the typical creations of Shāh Jahān. Built of white marble in the course of seven years (1648-55), the mosque is second to no mosque in India in refinement, purity and elegance. Although constructed on a high stylobate, it does not look so grand from outside as the Jāmi' Masjid, Delhi, yet the moment one enters the main gateway the cumulative effect of the domed prayer-chamber in front with a spacious court surrounded by arched cloisters, all in marble, looks unsurpassingly impressive. It is remarkable for its engrailed arches shaded by a deep dripstone, groined vaults, well-proportioned arcades in the façade, graceful arched entrances and colonnaded cloisters, delicate kiosks over the parapet and, above all, for its high-drummed bulbous domes which impart to it a melodious, but impressive, elegance when viewed from a distance.

In 1648 Shāh Jahān transferred his capital from Agra to Delhi where he built a new city, called Shāhjahānābād. In his new capital he erected the majestic Jāmi' Masjid and the magnificent Red Fort which latter, being virtually the fortified residence of the Emperor, gives us an idea of the arrangements of a complete Mughul palace built on one uniform plan. Of all the buildings in it the Dīwān-i-Khāṣ is the most highly ornamented and typical of the style in its opulent mood. It is larger and more richly embellished than his Dīwān-i-Khāṣ in the Agra Fort, though by no means so elegant in design. Engrailed arches supported on square marble piers divide it into fifteen bays. Its inlaid flowers on the piers, its elegant perforated tracery and its graceful multifoil arches picked out in gold and colours speak of the aesthetic taste of its builder.

The Jāmi' Masjid, Delhi, built in 1650, stands on a lofty plinth so as to look imposing and graceful with its three gateways towering above the surroundings. It is bigger and more artistic than the Jāmi' Masjid, Agra, built in 1648 by Jahānārā, the eldest daughter of Shāh Jahān. Its chief structural peculiarities are its bold treatment in red sandstone inlaid with black and white marble which impart to it a pleasing appearance, the spaciousness of its court which magnifies its qualities of breadth and mass, its massive piers supporting engrailed arches, its tall minarets and elegant bulbous domes and, above all, its well-proportioned structural and decorative manipulations producing a happy effect of substance and void.

LATER MUGHUL STYLE (1658-1858)

The accession of Emperor Aurangzīb (1658-1707) marks the decline of the Mughul architecture which, as stated above, had reached its perfection in the time of his father, Shāh Jahān. This decadence was due not only to the political reasons that brought about a speedy downfall of the Mughul empire but to Aurangzīb's indifference towards the art of building. The deterioration of taste is perceptible more and more as we study the later Mughul or post-Shāh Jahān monuments in chronological sequence. For instance, the tomb of the Emperor's wife Rābi'a Daurānī, built in 1678 at Aurangābād (Deccan), shows clearly the decline in architectural ideals for having been built on the concrete model of the Tāj, it appears stiff and lifeless in comparison with it. The Bād-shāhī Masjid at Lahore, built in 1674, does retain some of the strength, solidity and grace of the Mughul style of Shāh Jahān's period but it lacks that fine touch of vitality, that aesthetic sense of proportion, that graceful play of surface and that sharp contrast of light and shade which generally characterized perfect buildings of Shāh Jahān. The Motī Masjid or Pearl mosque (pl. XLV), built by Aurangzīb in the Delhi Fort possesses a chaste well-ornamented interior, but when studied as a whole it is not found free from defects, *e.g.*, the contours of its three cupolas are too rounded and lack the usual suavity of form while the finials crowning the domes look apparently out of proportion. This decadence gradually increased and one notices with great disappointment the hideous productions of Bahādur Shāh II, the last titular king of the Mughul dynasty (1837-57) in the Delhi Fort.

ODDH STYLE (EIGHTEENTH-NINETEENTH CENTURIES)

Before closing this chapter it seems desirable to say something about the architecture of the Oudh and Mysore dynasties as well.

In the early Nawābī style of Oudh, during the latter half of the eighteenth century, over-elaboration of ornamental detail with a lack of restraint in its application is most marked while its later phase, ending in 1856, when the last Nawāb of Lucknow was deposed by the British, shows the bastard style caused by the increasing influence of the quasi-European architecture of the nineteenth century. Instances of these may be seen in the great Imāmbāra of Nawāb Āḡafu'd-Daulah (1775-95) notable only for its grandiose proportions, the larger and smaller Ghahatar Manzils of Nawāb Naṣīru'd-Dīn Haider (1827-37), the gateways of Sikandar Bāgh and Qaisar Bāgh of Nawāb Wājid 'Alī Shāh (1847-56), etc., all of which consist of a debased Mughul framework largely embellished with inappropriate classical motifs.

MYSORE STYLE (1760-99)

The architecture of Mysore which lasted only for forty years (1760-99) was not influenced by European style but retained its traditional structural character in being rather feeble and less ornamental. The pavilion, known as the Dayā Daulat, at Seringāpaṭam bears some resemblance in style to the palace at Dig, while the tomb of Haider 'Alī and other surrounding mausolea, though expressive of their former greatness, are no match to the grand royal tombs of northern India.

MOHD. ASHRAF HUSAIN

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CHAPTER V

SCULPTURE AND PAINTING

STONE SCULPTURE

SCULPTURE may truly be regarded as the characteristic national art of the country in which the genius of the people found its most concrete, lasting and full expression. Stone sculpture in India took the form of images in the round or carved slabs. The images either stood in the open as in the case of colossal statues like the Yaksha-figure, from Pārkhām, which was an early feature, or later on enshrined in temples and chaityas. The cave-shrines (above, p. 84) as well as the free-built temples possess abundant sculpture of great variety and beauty, often marked by monumental quality.

Material

Indian sculpture bears its distinguishing stamp in the stone, generally quarried locally, of which it is made. In the Harappā culture (above, p. 32) the statuary, very limited in number, is made of limestone or steatite obtained from the mountain-quarries in Sind. The Mauryan sculpture of the time of Aśoka (third century B.C.) is made of buff-coloured sandstone from Chunār in Mirzāpur District, capable of taking a mirror-like polish on the surface, of which the secret was lost after about 200 B.C. The sculpture on the railings of the great stūpas at Sānchī and Bharhut (second-first century B.C.) is distinguished by its darkish red sandstone obtained locally in Central India. The sculptors of the Mathurā school made use of spotted red sandstone obtained from the quarries at Tāntpur and Bayāna in Bharatpur. In the Kushan period (first-third centuries), the stone was comparatively soft and the speckle in stone were of grey colour. During the Gupta period the deeper layers of the rock were tapped and the stone generally employed was of hard grain with minute black spots. The sculpture in Gandhāra had a distinctive stone of blue slate and schist—a kind of foliated rock abundant in the Swāt valley. North Indian sculpture from about the seventh century onwards shows whitish sandstone. The sculpture in Bihar and Bengal belonging to the Pāla school (eighth century onwards) is in basalt of black colour. The sculpture from the Deccan is again generally of basalt.

Chronology

The earliest sculpture is obtained from the urban culture of the Indus valley datable to the third millennium B.C. (above, p. 32). This is followed by a gap of about 2000 years during which the intellectual contents of Hinduism, as embodied in the Vedas and the epic literature, and of Buddhism, as found in the Pāli literature, were perfected, but they are not backed by any sculptural forms. The empire of Magadha founded by Chandragupta about 322 B.C. is the period of the earliest historical stone sculpture in India. The Yaksha figures from Pārkhām (Mathurā District) and Patna and the monolithic pillars with animal-capitals belong to the Maurya period (c. 322-185 B.C.). The next phase is that of the monumental gateways and decorated railings of Bharhut and Sānchī raised in the time of the Śuṅgas and their successors (second-first century B.C.). The rise of the Gandhāra school of sculpture synchronizes with the age of the Kushan emperors (first and second centuries). This was also the golden age of the indigenous school of sculpture at Mathurā and is marked by the appearance of the Buddha image. The great sculptured stūpas at Amarāvātī and Nāgarjunīkondā dated from 150-300 and were made of marble. The age of the imperial Guptas (fourth-fifth centuries) was the Golden Age of Indian history, in which Mathurā, Sārnāth, Deogarh, Udaigiri, Bhūmarā, Bhītargāon, and Ajanṭā, etc., were flourishing centres of sculpture and art.

The sculpture of the early medieval period had four main centres, namely (1) the Chālukya monuments of Bādāmi and Aihole (550-642, above, p. 96); (2) the rock-cut shrines and sculptures at Mahābalipuram (above, p. 92) executed under the patronage of the Pallavas of Kāñchī (600-700); (3) the rock-cut cave temples of Śiva at Ellora and Elephanta (pp. 89-90) founded during the time of the Rāshtrakūṭas (eighth-ninth centuries); and (4) the Mahāyāna Buddhist sculpture of Bihar and Bengal of the time of the Pāla kings (c. 750-1100). In the late medieval period (ninth-twelfth centuries) the structural temple had attained its greatest development and whatever complexity of architectural design and mystic symbolism had gone into its making, from the point of view of sculpture the age was remarkable for its carved slabs in high relief, ornate decoration and bold execution. Sculpture then had almost lost its independent character and had become subservient to temple-architecture. The great temples at Khajurāho in Bundelkhand (above, p. 99) are monuments of Chandella art (c. 1100), and their sculpture, though overloaded, represents great vigour and mastery in the rendering of difficult poses. The temples at Bhuvaneshvar (c. 1100, p. 98) and the Sun-temple at Konārak (thirteenth

century, p. 99) show extreme profusion of sculptured forms, both human and animal, enriched with endless patterns of decoration. The Jaina temples at Mount Ābu (p. 101) and Gīrnār and Śatrunjaya (both in Gujarat) built under the Solanki kings (tenth-twelfth centuries) display an efflorescence of sculptured forms integrated to the purpose of architecture and achieved by the single-minded devotion of the sculptors revelling in deep-cut work.

In South India Tanjore was a great centre of temple construction in South India, where under the benevolent rule of the Chōlas, the great Rājarāja (985-1018) and his son Rājendra (1018-1035), the temple-architecture reached its zenith (p. 104) and sculpture similarly bold and majestic came into existence in the form of temple-figures. The craze for colossal size is best seen in the Jaina statue of Gommateśvara at Śravaṇa-Belgola in Mysore, cut out of solid rock in 983. 57 feet in height, it is one of the largest free-standing images in the world. The temples at Belūr and Halebīd (p. 103), built under the patronage of Viṣṇuvardhana, the first Hoysala king (1111-1141), are richly embellished with images of Brāhmanical gods and goddesses and done in an ornate style, which partakes of metal-like carving. This was the last glow of the lamp of Indian sculpture. From c. 1300 onwards Indian sculpture lost its vitality and degenerated into mere craftsmanship catering to routine requirements.

Contents of the art

The contents of Indian sculpture, although most varied, revolve mainly round three things: (1) the story of Buddhism; (2) Brāhmanical pantheon with images and legendary scenes of gods and goddesses; and (3) decorative figures, motifs and designs. The life of the Buddha as a subject in plastic art occupied an important place in early Indian sculpture. From the point of religious history, it may be said that nothing else illustrates so well the extent of popularity and the depth of devotion enjoyed by Buddhism amongst the masses as do the monuments of Buddhist art, mainly in North India and the Deccan. The earliest Buddhist art begins with the reign of the Mauryan emperor Aśoka and the monumental columns and capitals that survive from his age are distinctive both in style and contents in the history of Indian art. This was followed in the second century B.C. by an age of great stūpas adorned with gateways and railings of magnificent effect, *e.g.* those at Bharhut and Sānchī (above, pp. 80-81) in Central India. The railing at Bharhut was pulled down and has been re-erected in the Indian Museum, Calcutta (below, p. 173). The subjects of representation relate mainly to events in Buddha's life in his latest birth and to the Jātaka stories

of his previous lives as recorded in the Pāli collection. But a special feature of this art consists in the importance given to the folk-cults of *yakshas* and *yakshīs*, tutelary local deities of forest- and village-life, and that of the worship of trees (*vr̥ksha-devatās*) and serpents (*nāgas* and *nāgīs*). The inspiration of these folk-cults was rooted in the soil. It is a joyous and spontaneous homage through the forms of art to the deities that had a luxuriant growth in the folk-mind. The art, although primitive, is direct and effective in its statement. These reliefs represent a philosophy older than the Great Enlightenment and there is no evident connexion with the philosophical doctrine of Buddhism. The artists look upon the Buddha as a perfect being, whose influence permeates the atmosphere, but whose human presence is only expressed by a symbol. Although it may seem paradoxical, Buddha is never represented in human form in the early Buddhist art at Bharhut, Sānchī and Bodh-gayā. The image of the Buddha makes its first appearance about the beginning of the Christian era, and archaeological evidence firmly shows that in the third year of Kanishka the indigenous sculptors of Mathurā had arrived at a formula of Buddha image derived from older plastic forms like the Pārkhām Yaksha (p. 134). The new image seems to have satisfied the religious needs of the age to a remarkable degree, so that within a hundred years of its formulation it had altogether ousted the earlier practice of representing the Master through symbols like the foot-print (*pāḍukā*), *bodhi*-tree, *bodhimāṇḍa*, *dharmachakra*, stūpa, etc. The emergence of the image, in itself a result of the new changes that had crept into the religious outlook of Buddhism due to the influence of the Bhakti (devotional) school of philosophy, must have exercised profound influence both on the art of sculpture as applied to images and on the religious approach of the masses towards Buddhism. The image becomes henceforth the main element of sculpture and worship. The impulse to worship the Buddha in image-form became stronger and the practical ethical eight-fold path of early Buddhism yielded in attraction to the worship of the Buddha in the visible sign of the image. The Buddhist images are, first, those of Buddha dressed as a royal prince with turban and costly ornaments prior to the attainment of enlightenment, designated as Bodhisattva; and secondly those portraying the Master after his enlightenment. In this latter form he is dressed like a monk. As convention ruled it, a great man must show some bodily signs (*māhapuruṣa-lakṣaṇa*) and so the Buddha image shows some of them, for example, the protuberance on the skull (*uṣhṇīṣa*), the hair-dot between the eye-brows (*ūrṇā*), elongated ears (*lamba-karṇapāśa*), webbed fingers (*jālāṅguli*) and the *chakra*-symbol on the palms of the hands and soles of the feet. The images are either standing or seated,

the first ones being conceived as colossal in size. Of the details of Buddha's life the four great events, namely birth (*jāti*) at Lumbinī, enlightenment (*sambodhi*) at Bodh-gayā, first sermon or the 'turning of the wheel of law' (*dharmachakra-pravartana*) at Sārnāth and death (*parinirvāṇa*) at Kusinārā, are subjects of frequent representation in the early Buddhist art.

Stūpa-worship was an ancient form of honouring the great dead and Buddhism seems to have borrowed it from folk-religion. But it played a considerable part in the evolution of Buddhist architecture and sculpture, specially in the form of the enclosing gateways and railings. The Buddhist pantheon as evidenced in sculpture is limited to the image of the Buddha and the representation of his life-scenes and the Jātaka stories, as seen specially in the art of the Śūṅga and Kushan periods. With the passage of time, however, it tended to become elaborate and at Sārnāth we see signs of this growing complexity in the forms of several Bodhisattvas like Maitreya and Avalokiteśvara and the Dhyāni-Buddhas. In the Pāla art of Bihar and Bengal the Buddhist pantheon attains its maximum elaboration, and sculpture degenerates into iconographical pastime.

The place of Jainism in early Indian sculpture is practically confined to the material from Mathurā in the form of sculptured slabs, railing-pillars, gateways and images of Tīrthaṅkaras which are mostly inscribed and throw light on the history of the Jaina religious church in the early centuries of the Christian era. Except for images the other motifs of sculpture and architecture are the same as those in early Buddhist art. Later on, with the growth of the Brāhmanical structural temple, Jaina art spread in central and western India, and both in architectural patterns and the elements of decoration, the art of temple-building, although harnessed to the needs of Jainism and Brāhmanism, remained an undivided Indian art. The rich Jaina devotees from the ninth century onwards were great builders to whose munificence we owe the famous Dilwārā temples of Mount Ābu (above, p. 101), built by Vimala Shāh and Tejapāla respectively (c. 1032 and 1232); and the great temple-cities built not for human but for divine habitation, picturesquely situated on the hills of Gīrnār in Kāthiāwād and Śatrunjaya and Pālītāna in Gujarat (p. 101). In the Dilwārā temples, the white marble sculpture is of the most delicate kind. As Cousens remarks: 'The amount of beautiful ornamental detail spread over these temples in the minutely carved decoration of ceilings, pillars, doorways, panels, and niches is simply marvellous; the crisp, thin, translucent, shell-like treatment of the marble surpasses anything seen elsewhere, and some of the designs are of veritable beauty.'

The work is so delicate that ordinary chiselling would have been disastrous. It is said that much of it was produced by scrapping the marble away, and that the masons were paid by the amount of marble dust so removed'. The figure-sculpture, deeply under-cut, is in harmony with the rest of the architecture of the temple and looks beautiful in spite of the exuberance of detailed ornamentation.

The family of Brāhmanical gods and goddesses, although formidable in size, can be conveniently grouped round the personality of the three major deities, namely Brahmā, the Creator; Viṣṇu, the Preserver; and Śiva, the Destroyer. They are represented singly or attended by their consorts, respectively Sarasvatī, Lakṣmī and Pārvatī. Each is attended by a number of celestial beings, and in sculpture much attention has been paid to the life-exploits of each deity in various incarnations showing his victory over a number of demons. Elaborate accounts of these divine deeds, technically known as *līlā*, are given at length in the epics and the Purāṇas, and the sculptured contents of such great temples as the Kailāsa temple at Ellora (p. 90) offer a visual commentary to the Purāṇic documentation. The pantheon, although posed on the simple core of the trinity—Brahmā, Viṣṇu and Śiva—tended to become more and more elaborate with the admission of many subsidiary gods and goddesses and ultimately the element of true sculpture petered out into iconographic formulae. Some of the greatest and finest Indian sculpture is no doubt preserved in the Brāhmanical temples as indicated above.

Survey of different schools

Among the noteworthy specimens of the Indus Valley sculpture may be mentioned a fine bearded male figure wearing a shawl with three-petalled ornamentation from Mohenjo-daro (pl. VI A) and two small nude torsos of male figures from Harappā. The former shows skilful portraiture, whereas the Harappā torsos with their remarkable modelling and naturalistic pose would rank with the first-rate pieces of Greek sculpture.

Tall and polished monolithic pillars surmounted by animal-capitals, raised by Aśoka in the third century B.C., are monuments of great beauty. The most remarkable of them all is the large lion-capital found at Sārnāth (pl. XLIX), which once surmounted a column bearing an imperial edict against creating schism in the Buddhist church. The capital consists of four figures of stately lions seated back to back and facing the four directions. The round abacus is decorated with four *dharmachakras* each with twentyfour spokes and four animals—an elephant, a bull, a horse and a lion. The base consists of a lotus with inverted petals. On

the head of the lions was once supported a stone wheel or *dharmachakra* of thirtytwo spokes, a few fragments of which have been found. Apparently the symbolism was intended to represent the victory of the 'wheel of the law' over physical force. The lion-capital constitutes a triumph of Indian sculpture for its vigorous representation, monumental quality and symbolic character. The bull-capital of Rampurwā (District Champāran, Bihar), consisting of a sturdy well-built bull-figure delicately poised above a round abacus with honeysuckle and palmette decoration and a base of inverted lotus-design is another masterpiece of Aśokan sculpture (pl. L).

The stone railing and gateways of the Bharhut stūpa date from about 150 B.C. (p. 81) and contain vivid figures in relief of *yakshas* and *yakshīs*, *nāgas* and *devatās* (pl. LI A) and Jātaka-stories and scenes from Buddha's life conceived in an atmosphere of natural freedom. The wealth of floral and animal-designs is also infinite. As Fergusson remarks: 'Some animals, such as elephants, deer and monkeys, are better represented there than in any sculpture known in any part of the world, so too are some trees'. The great stūpa of Sānchī, a massive hemisphere veneered with plain stone slabs (p. 79), is surrounded by a high stone railing (*vedikā*) and four monumental gateways (*toranas*), the latter entirely covered with sculpture. The sculptures are crowded with figures and, in spite of their primitive treatment, convey an extraordinary sense of decorative design. The whole approach of early Indian art is realistic. Its main interest is neither spiritual nor ethical, but altogether directed to human life; luxury and pleasure are represented as practical facts, endorsed by the inherently sensual qualities of the plastic language.

The art of the Āndhras is exemplified in the cave-shrines of Kārle, Bhājā, Kanheri, etc., in Mahārāshṭra in Bombay (above, p. 84) and in the valley of the Krishnā towards the east. The sculpture in the Kārle and Kanheri caves showing robust-bodied male and female figures at the entrance of the excavated chaitya-halls (pl. LI B) vividly illustrates the sensuous quality of early Indian plastic art. The stūpas at Amarāvātī and Nāgarjunikondā (p. 81) on the bank of the Krishnā (150-300) were remarkable monuments, furnished with numerous bas-reliefs crowded with figures showing great movement, freedom and grouping skill (pl. LII).

The centre of art was now shifting to North India. Two schools of sculpture distinguished alike by remarkable creative activity came into existence at Mathurā and Taxila during the reign of the Kushan emperors Kanishka, Huvishka and Vāsudeva (first-second centuries). The school of Mathurā shows great originality, richness

and beauty in its sculpture, characterized by free-standing images carved slabs and portrait-figures of emperors and noblemen. In its architectural patterns this art continues the tradition of the old railings and gateways decorated with sculpture in relief. Some of the most perfect specimens of female beauty ever carved in Indian sculpture are found on the railing-pillars of Mathurā showing women enjoying scenes of toilet, dance and music and pastimes with birds (pl. LI C) and garden-sports under *aśoka* and *kadamba* trees. The noteworthy contribution of the Mathurā school, however, which introduced a revolution in Indian plastic art, centred round the Buddha image. The image was fashioned in accordance with the traditions of the Yoga and Bhakti schools by putting together the elements of figural representation already known to the early masters of the Pārkhām Yaksha type. Besides Buddha the Jaina Tīrthāṅkaras and Brāhmanical gods and goddesses also began to be carved in typical yogic postures. The priority of the Buddha image is a matter of dispute between the schools of Gandhāra and Mathurā but the admitted fact is that the Mathurā Buddha bears independent features derived from the preceding colossal statues like the Pārkhām Yaksha (p. 134). The only point of contact with the Gandhāra school was in the case of the seated Buddha figures wrapped in a folded robe with a rather meek and insipid form. The Mathurā school, although developed from the early sculpture of Central India, freely borrowed motifs from the flourishing Gandhāra school of the North-west; this is evident in the Bacchanalian groups with corpulent Silenus as one of the figures, and such Hellenistic subjects as Hercules fighting the Nemean lion. But the borrowed elements of form and decoration are only a small part of the repertoire of Mathurā sculptors whose true genius is seen in the treatment of Indian motifs and subjects.

The Graeco-Buddhist art of Gandhāra is a product of the combination of foreign and Indian elements. Although in their first enthusiasm foreign experts over-rated its artistic value, the Gandhāra school was nevertheless both extensive and vital, consisting of an earlier phase (first-third centuries) in which the stone images of Buddhas and Bodhisattvas, carved slabs of scenes from Buddha's life and Jātakas predominated, and a later phase (fourth-fifth century) confined to plastic art in stucco. The stucco art represents figures and heads of Buddhas, Bodhisattvas, secular types of men and women, demons and divine figures (pl. LIII A), etc.; once richly coloured, they are of great artistic value and show a genuine aesthetic fervour.

Indian plastic art reaches its greatest refinement in the Gupta period. The figures are more slender, the poses more gracefully

executed and the elements of drapery and ornamentation more restrained than in Kushan art. The difference between the products of the two schools becomes evident by looking closely at the Buddha images of the two periods (pls. LIII B and LIV). The Kushan halo is plain with scalloped margin; the Gupta halo is more elaborate and covered with lotus-design and concentric bands of decoration amongst which beaded border is usually one. The Kushan image has a simple background of seated figures; the Gupta one has a high-backed throne supported by a horizontal architrave and prancing bracket-figures (*vyāla-torana*). The Kushan image shows the muscular body, shaven hair, *bodhi*-tree carved on the back-slab, drapery partly plain and partly folded covering the left shoulder with a *saṃghāti* that shows engraved folds and plain border; the Gupta image on the other hand shows elegance of form, head covered with short curls, absence of the *bodhi*-tree and drapery entirely consisting of stylized folds shown in relief and with a frilled edge. In the seated Kushan images there are two flywhisk-bearing attendants which are absent in the Gupta images; similar is the case with the *ūrṇā* mark between the eyebrows usually present in the former and absent in the latter. The fully-open round eyes of the Kushan images are replaced by elongated half-open eyes, and the equal division of the upper and lower eye-lids in the Kushan figures is replaced by eyelids becoming broader with the gaze fixed at the tip of nose. The spiritual quality of Gupta sculpture is its most patent feature which is so clear in the Buddha images from Sārnāth (pl. LIV) and Mathurā.

But much more original were the developments of Brāhmaṇical sculpture which witnessed an unusual expansion of the pantheon, the growth of the structural temple and a new emphasis placed on the image. This is seen in the examples found at Deogarh (above, p. 94) in the Daśāvatāra temple (pl. LV) and at Udaigiri in the colossal image of Ādivarāha temple and at Bhūmarā in the Śiva temple (p. 94). The deep-cut foliated scroll (*patralatā*) and figures of gnomes and couples (*dāmpatis*) become a regular feature of Gupta decorative motifs.

The groups of temples at Bādāmi and Aihole (p. 96) executed under the early Chālukyas (sixth-seventh centuries) show some very remarkable sculpture with a greater tendency towards freer movement than that of North India. The Pallava sculpture of the Far South carries the tradition of vigorous movement still further. It is represented at its best at Mahābalipuram on the sea-coast accompanied by a wealth of magnificent reliefs in the rock-cut shrines (above, p. 92). For example, the Mahishamaṇḍapam group of Durgā (pl. LVI A), Kṛishṇa lifting the mountain Govardhana,

the milking of cows in the Kṛishṇa cave-shrine and the open-air rock-cut sculpture representing the scene of the descent of the Gaṅgā (*Gaṅgāvataraṇa*) are some of the most vivid sculptured reliefs done in this country. In the works of Coomaraswamy, 'Seventh century Pallava sculpture is of a very high order; it differs chiefly from that of the Gupta period in the greater slenderness and freer movement of the forms, a more oval face and higher cheek bones. The divine and human figures are infinitely gracious and in the representation of animals this school excels all others'.

The Rāshtrakūṭas were the cultural successors of the Chālukyas in the Deccan and in the eighth century kept the torch burning in the domains of art and literature. The Kailāsa temple at Ellora (p. 90) cut out of live rock in the time of Kṛishṇa II (757-787) contains some very bold sculpture. The figures are tall, powerfully built, reflecting and informed with spiritual and physical poise. The scene of Rāvaṇa shaking Mount Kailāsa with Śiva and Pārvatī seated above is not only magnificent but shows great energy. The cave-shrine of Elephanta (p. 90) is a prototype of that at Ellora, which contains the deservedly famous Maheśamūrti (popularly known as Trimūrti) (pl. LVI B). Such works and buildings cut into the solid rock created a sort of heavenly retreat, a divine world, where men could associate for a while with the greatness and glory of their gods. The subject-matter of early medieval sculpture is rooted in the Purāṇic stories of the lives of gods and goddesses.

In the late medieval period (tenth-thirteenth centuries) Indian sculpture entered upon a new phase of activity. Its main centres were at Khajurāho in the north, Mount Ābu, Gīrnār and Pālitānā in the west, Halebid in the south and Bhuvanēsvar and Konārak in the east. The structural temples were enriched with sculptured forms in high relief with an exuberance of detail which in itself accounts for beauty (pl. LVII A). It will be found that the later medieval sculpture is overladen with a multiplicity of iconographic forms. Another feature which has attracted frequent notice is the presence in the temples at Khajurāho and Konārak of a series of erotic posture-figures (*ratabandhas*) influenced by the prevailing religious conception of Tantra-worship. The traditions of the marble sculpture of Gujarat continued also in Rajputana as is seen in the beautiful Sarasvatī image from Bikaner (pl. LVII B).

In South India, Indian sculpture attained a new maturity during the Chola period (tenth-eleventh centuries). The Hoysala art of Mysore (twelfth-thirteenth century) is executed in a fine-grained dark schist which lends itself to unlimited elaboration of detailed

carving, more appropriate to metal than stone. The stream of Indian sculpture dries up during the Muslim period but only after transmitting its tradition as it were to extensive and vital schools of pictorial art. The feeling for volume and vivid representation were qualities about which Indian sculptors cared more than either anatomical truth or perspective. The Indians took a keen interest in their sculptures and temples and enjoyed their plastic creations at leisure almost as a perpetual routine of life.

TERRACOTTAS

Figurines of burnt clay or terracotta have been regarded with special favour in Indian plastic art. They have a long history behind them and the material comes from historic and protohistoric sites. The clay specimens from the Harappā culture (above, p. 32) far outnumber all other forms of its statuary. They are hand-made and the modelling, although effective, is crude, specially in the case of human figurines which are less successful than the figurines of birds and animals. The female figurines represent a type of mother-goddess with prominent breasts and broad hips, adorned profusely with appliqué ornaments (pl. LVIII A).

The plastic tradition in clay, as yet unsupported by material evidence for the next two thousand years, becomes abundant again from the Mauryan period, and numerous specimens have been unearthed in the excavations of historical sites in North India from Taxila to Pāṭaliputra. Technically the earliest specimens show archaic features and are modelled by hand. Amongst them the female figurines seem to represent the mother-goddess type and those from Mathurā in grey colour show links with older traditions. In the Śuṅga period, about the second century B.C., the mould makes its appearance. A period of transition is witnessed by the use of moulds for pressing out the head and joining it to a bust modelled by hand, the figures being still in the round. With the discovery of the mould the coroplasts made rapid progress with this art, and not only did its use become exclusive but objects of true art began to be produced. The early figurines from about first century B.C. from Mathurā, Ahichchhatrā, Kosam, Patna, etc., are made completely by mould and consequently are in the nature of flat plaques. Another far-reaching revolution took place in the sphere of subject-matter, for religious figurines were being gradually replaced by secular ones. Single figures of men and women and of couples (*dampati*) engaged in toilet, music or dance, formed topics of representation in Śuṅga terracotta art (pl. LVIII C). Special

mention should be made of the numerous female plaques of great beauty found at Kosam near Allahabad, including a limited group of erotic ones. The female figure from that place, representing probably the goddess of beauty, Śrī, now deposited at the Indian Institute at Oxford, is one of the most charming figures equally in facial features and its ornamentation. Another prolific school during the Śunga period, of which exquisite figurines of laughing boy and girl are typical instances, flourished at Pāṭaliputra (pl. LVIII B).

During the Kushan period terracotta art seems to have received a setback. The available specimens from the datable layers at Ahichchhatrā are of crude workmanship showing a neglect in the use of mould and a reversal to hand-made form. But with the advent of the Gupta age new possibilities opened out for terracotta art, and it was soon found to be the most convenient and handy medium to convey the message of art to the rich and the poor. The clay-modeller's art was soon established on a footing of equality with sculpture, and big structural brick temples decorated with ornamental freezes of terracotta plaques and large-size figures became the order of the day. Even the architectural elements of the buildings were conceived in terms of terracottas, as is witnessed in the use of moulded bricks in the surviving brick temples of Bhītargāon, District Kanpur (p. 95), and the Lakshmaṇa temple of Sīrpur, District Raipur (p. 98). They are of all sizes, from about 6 to 18 inches in length, and the variety of patterns is infinite, some of them being very effective, specially the diaper, the fretwork and the floral ones. The Gupta terracottas consist mostly of plaques pressed out of moulds with shallow relief, but large panels for temple and domestic buildings with deep relief are also found, as the plaques and figures of Śiva and Pārvatī from Ahichchhatrā (pl. LIX).

The Gupta tradition of the clay-modeller's art survived into the early and late medieval periods, both in India and Greater India. The brick temples of Pahārpur and Mahāsthān and at other places in Bengal show the continued tradition of terracotta art up to the eighteenth century. As objects of social history Indian clay figurines acquaint us with many a domestic subject and present an inventory of social types.

BRONZES

Indian bronzes and metallic images are cast by the *cire perdue* or 'lost-wax' process, so called from the fact that the wax-model which serves as the core of operation is lost or drained out before actual casting takes place. The subject first modelled in wax is

coated with clay. Next the wax is melted out leaving behind a mould into which liquid metal is poured to cast a solid image. In Nepal, however, hollow images were in vogue: the subject was first modelled in clay and this core was coated with wax and the wax in turn was covered with a coat of clay. After draining the wax out by heating, the mould was used for casting.

The earliest Indian bronzes cast by this process come from the Harappā culture. The most interesting of them is the figure of a dancing girl with slender and elongated arms and legs, wearing profuse bangles (pl. VII A). The figure, although primitive, is still very effective. Much later in time are the Kushan bronzes available from Taxila, but they are not very impressive. During the Gupta period the casting of almost life-size metal images was practised with consummate skill as is evident in the copper Buddha image from Sultānganj (District Bhāgalpur), at present in the Birmingham Museum. The Brahmā in the Karachi Museum is also a remarkable specimen both for its plastic form and facial expression. The Gupta bronzes exhibit the characteristic features of graceful poses, wet drapery and sparse ornamentation seen in the art of stone sculpture. From about the eighth century the vogue of metal images in portable size increased. The bronzes from Kurkihār (District Gayā) and Nālandā of the Pāla period (p. 63) are distinguished by elegance of form, spiritual expression and superior workmanship.

The finest examples of Indian bronzes were made during the Chōla period between the tenth and thirteenth centuries. They are at once solid, dignified, restrained and expressive of great power. The bearing is most naturalistic and the elements of decoration are kept within proper limits. A most outstanding example is that of Śiva Natarāja (pl. LX), illustrating the process of world-creation and dissolution in terms of a rhythmic dance. Encircled with a halo of flames, the deity sounds the small drum (*damaru*) with one hand and bears the consuming fire in the other. The two other hands are held in the pose of *abhaya* (protection) and *gajahasta* symbolizing energy (*kriyā*). His right foot tramples upon the demon of ignorance and the left swings in the air as a mark of deliverance. The figure of Rāma as Kodāṇḍadhārī, 'wielder of the bow', in the Madras Museum (pl. LXI A) is a magnificent specimen of Indian bronze, tall in stature, dignified and gracefully posed with triumphant expression on the face.

The South Indian bronzes are mostly portable specimens representing Brāhmanical gods and goddesses. Śiva, Viṣṇu and their wives Pārvatī and Śrī Devī constitute typical specimens. The royal figures of the Chōla period are also subjects of art (pl. LXI B-C). The Buddhist images from Negapaṭam (District Tanjore) are

equally chaste and elegant specimens of bronze art. The images depicting Śaiva saints are marked by intense spiritual expression; that of Sundaramūrtisvāmī from Polannāruvā in Ceylon is deservedly famous. The group showing King Krishnadevarāya of Vijayanagara (1509-29) and his two queens is an extremely successful example of secular portraiture rendered with exquisite realism. The art of bronzes in South India continued to flourish up to the eighteenth century, although the age of glory ended with the Chola period. Bronze-casting was popular in Gujarat also, but the available specimens belong to the category of domestic objects rather than of sculpture. Hanging temple-lamps were artistically adorned with dancing dolls in graceful poses. The specimens of the Gujarat Dīpa-lakshmī sometimes exhibit grace and pleasant expression.

PAINTING

The antiquity of Indian painting is attested by continuous literary tradition from the time of the epics and the Jātakas, which make reference to painted halls or chambers (*chitraśālā*) in palaces. Kālidāsa, of Gupta age, refers to master-painters as *chitrāchārya* and to painted halls as *chitraśālā* or *chitrasadma*. While describing Pārvatī's first bloom of maidenhood the poet observes that she looked like a painting on which the final outline had been carefully drawn to mark the modelling of the different limbs of the body by the master-painter Kāmadeva (*Kumārasambhava*, I, 32). Both miniature painting on cloth and board and wall-paintings are referred to in classical Sanskrit literature and the pictorial motif of the hero or the heroine engaged in painting the portrait of the beloved or the lover is constantly employed in dramas to serve the ends of the plot. The Yaksha in the *Meghadūta* poem paints the portrait of his beloved in outline with red ochre on stone. Bhavabhūti, of the eighth century, in his *Uttararāmacharita* refers to a gallery with the *Rāmāyana*-paintings executed on its walls. Bāṇabhaṭṭa, in the seventh century, makes a significant reference that the wall-paintings in the city of Ujjain were crowded with the figures of gods and demons, Siddhas, Gandharvas, Vidyādharas and Nāgas, showing as it were the denizens of the whole universe entering into the composition of the pictures. Technical details about the preparation of surface for fresco-painting and of the different kinds of colours, together with the process of stippling and shading, are preserved in the *Chitrasūtra*, a special section of the *Vishṇudharmottara-purāṇa* devoted to painting (III, xxxvi-xliii).

Early mural paintings

The actual remains of Indian painting begin with the earliest specimens in Caves IX and X at Ajantā (above, p. 85) with

figures resembling those at Bharhut and Sānchī and datable to about the second-first century B.C. The *Chhaddanta-Jātaka* composition is a replica of the technique of Bharhut. The pillars of the chaitya-hall at Bedsā were originally painted and similarly the Jogimārā cave in Sargujā State (Central Provinces) had painting of the comparable date showing figures, *makaras*, etc., drawn with vigour and decision, but obscured by a medieval paint-pest.

Later mural painting : Ajantā and Bāgh

The next stage in the history of Indian painting comprises the painting of the Gupta period in the wall-paintings of the Ajantā caves, the Bāgh caves in Gwalior State and the Śittannavāsai caves in Pudukkottai State, ranging in date from the fifth to the seventh century. The subjects of the paintings relate to portraiture of the Buddha and Bodhisattvas, narrative scenes from the Jātakas and decorative elements including figures of animals, flowers, trees, geometrical patterns and scroll-work. Their variety, according to Griffiths, is infinite and is carried into smallest details so that repetition is very rare. Of the portraits the central figures are those of the Buddhas and Bodhisattvas. Incidents in the life of Gautama Buddha are freely painted. The great Bodhisattva Padmapāni Avalokiteśvara in Cave I shows the highest attainment of Indian pictorial art in the way of figure-painting. The scene of the 'Dying Princess' in Cave XVI is thus praised by Griffiths: 'For pathos and sentiment and the unmistakable way of telling its story, this picture, I consider, cannot be surpassed in the history of art. The Florentine could have put better drawing and the Venetian better colour, but neither could have thrown greater expression into it'. The charming Mother-and-Child group in Cave XVII showing Yaśodharā, the wife of Buddha, presenting Rāhula, his son, to Buddha at her door is the most attractive specimen of Ajantā art. The paintings of Cave I and II are dated to about the early seventh century. A large picture in Cave I probably shows the Indian king Pulakeśin II receiving an embassy from the Persian king Khusro Parvez (626-628). In the drinking groups in Cave I, the faces, the drapery and other articles show clear Persian influence. According to Rothenstein, 'On the hundred walls and pillars of these rock-carved temples a vast drama moves before our eyes, a drama played by princes and sages and heroes, by men and women of every condition, against a marvellously varied scene, among forests and gardens, in courts and cities, on wide plain and in deep jungles; while above the messengers of heaven move swiftly across the sky. From all these emanates a great joy in the surpassing radiance of the face of the world, in the physical nobility of men and

women, in the strength and grace of animals and the loveliness and purity of men and flowers; and woven into this fabric of material beauty we see the ordered pattern of the spiritual realities of the universe. It is this perfect combination of material and spiritual energy which marks the great periods of arts'. In the words of Lady Herringham we have the best general description of the paintings: 'The outline is in its final state firm, but modulated and realistic, and not often like the calligraphic, sweeping curves of the Chinese and Japanese. The artists had a complete command of posture. Their knowledge of types and positions, gestures and beauties of hands is amazing. Many racial types are rendered; the features are often elaborately studied and of high breeding In some pictures considerable impetus of movement of different kinds is well suggested. Some of the schemes of colour composition are most remarkable and interesting, and there is great variety'. It is impossible for him who has not seen the paintings with his own eyes to realize how wonderful in their simplicity and religious fervour the paintings are. For a time the visitor to the caves finds himself transported to a dreamland of beauty.

The paintings at Bāgh represent only an extension of the Ajantā school and in variety of design and vigorous execution rank as high as those of Ajantā. The surviving scenes are of a secular nature. A group illustrating the performance of *hallisaka* dance, showing a troupe of women led by a man, is extremely gay. The art of Ajantā and Bāgh, informed as it is with a feeling of buoyant and pulsating life, captures in itself the best traditions of the art-renaissance at home and set up traditions which travelled to far-off countries. The frescoes at Bāmiyān in Afghanistan of which the earliest specimens go back to the fifth or sixth century A.D. exhibit a strange medley of Indian, Iranian and Chinese influences. Similarly mural paintings of predominantly Indian type recalling Gupta and Pāla models were found in the Buddhist monastery at Fōndukistan, east of Bāmiyān. Aurel Stein discovered Buddhist wall-paintings from a number of sites in Central Asia—Miran, Dandan Oilīq, Niya, etc.—in which Indian influences have mingled with those from China, Iran and the classical world. The art of Ajantā became the cosmopolitan art of the Buddhist world and seems to have gone with Buddhism wherever it went.

Medieval mural painting

Traces of Pallava painting in the Jaina cave of Śittannavāsai and at Conjeeveram have been found. Wall-paintings also occur in the Kailāsa temple at Ellora (above, p. 90) in two layers, the lower one contemporaneous with the temple and the upper one

added after about a century. The group of Vishṇu and Lakshmī on Garuḍa stands stylistically midway between the later paintings of Ajantā and the Chola period. Paintings of the Chola period have been recently discovered on the walls of the Brihadiśvara temple at Tanjore executed probably in the beginning of the eleventh century under Rājarāja the Great (p. 104). South India preserves on her temple-walls an almost continuous tradition of mural paintings; those of the Vijayanagara period occurring in the Lepākshi temple, Anantpur District, and in the Vishṇu temple at Somapalle, Chittur District, of the sixteenth century, provide links with the early Rājasthānī or Akbar style, in the forms of the eyes and the head-dresses.

The painting tradition in North India is to be traced in the paintings on the ceiling of the Madanpur temple in Jhānsi District (twelfth century) which show in their angular features and projecting eyes affinities with the school of western India. The palace-walls of Fatehpur Sikrī and those in Kāngrā, Bundelkhand and Rājasthān exhibit paintings in the vigorous local styles of their miniatures.

Miniature painting: the Pāla school

The reaction to the large-scale paintings made itself manifest in the growth of miniature painting as evident in the Pāla school of Bengal (tenth-twelfth centuries) and in the Western Indian school of Gujarat (eleventh-sixteenth centuries), both specializing in the art of illuminated manuscripts. The subject of the Pāla miniatures is Buddhist gods and goddesses and the art is characterized by sinuous lines, subdued tones and simple composition. The number of figures is very limited, generally about half a dozen. The art is best represented in the manuscripts of the famous Buddhist work the *Prajñāpāramitā*, the earliest specimens of which go back to the reign of the Pāla king Mahendrapāla (894) and Rāmapāladeva (1093).

The Gujarat school

The Gujarat school of miniature painting, embodying a continuous history for five centuries (1100-1600), consists of illuminated Jaina manuscripts, the earlier ones on palm-leaf and the later ones on paper. The earlier miniatures show the use of brick-red background and the latter ones from the fifteenth century onwards the use of blue and gold on a lavish scale. The most notable features of these paintings are angular faces in three-fourths profile, pointed nose, eyes protruding beyond the facial line and an abundance of accessory details and ornamentation. The subject-matter is

three-fold: (i) Jaina sacred texts (the *Kalpasūtra* by far exceeds all others) in the early stage; (ii) later on Vaishnava subjects like the *Gītagovinda*, *Bhāgavata*, *Kṛishṇalīlā* scenes and manuscripts of *Bālagopālastuti*; and (iii) secular paintings mainly dealing with the theme of love (pl. LXII A). Of the last the most notable example is the *Vasanta-vilāsa* with seventy nine miniatures on a roll of cloth (*kunḍalita chitrapata*) of great lyrical charm, illustrating the glory and hilarity of spring.

The Rājasthānī school

The pictorial art of Rajputana (sixteenth-eighteenth centuries) shows the Indian genius in its pure inspiration and therefore has a more intimate appeal than its contemporary idiom of Mughul art. Combined with the art of the west Himalayas (seventeenth-eighteenth centuries), the Rājasthānī art shows all that is best and of universal appeal in the emotional side of the Indian people. In the words of Coomaraswamy, 'the work of the Rajput painters deserves to be given an honourable place amongst the great arts of the world'. Its inspiration is rooted in the people's hearts, keeping close to their poetry, music and drama. Its central theme is love. 'What Chinese art achieved for landscape is here accomplished for human love. Love is conceived as the means and symbol of all Union'. The lovers represented are always Rādhā and Kṛishṇa typifying the eternal motif of Man and Woman, and revealing in every day events the image of the events in heaven. 'The typical examples of Rājasthānī painting have for us this lesson that what we cannot discover at home and in the familiar events, we cannot discover anywhere. The Holy Land is the land of our own experience—and if beauty is not apparent to us in the well-known, we shall not find it in things that are strange and far away'.

The women of these paintings are true to the ideals of feminine beauty—large lotus-eyes, flowing tresses, firm breasts, slender waists and rosy hands. The heart of a Hindu woman with all its devotional and emotional intensity is fully reflected in these paintings.

The artists make use of brilliant colours rendered with tempera effect and display an unusual understanding of the secret of colour-harmony. The themes of Rājasthānī miniatures are as varied as the medieval literature of Hindu India, in which the sentiments of love and devotion are mingled with an exuberant joy of life. An entire world of folk-lore stands documented in the paintings of Rajputana and the sub-Himalayan regions. Their common subject-matter appertains to the cycle of Kṛishṇa legends; to *śṛīngāra* or

sentiment of love expressing itself in the erotic motifs of 'Heroes and Heroines'; union of Śiva and Pārvatī; scenes from the *Rāmāyaṇa* and the *Mahābhārata*; ballads and romantic poems like the *Hammīra-haṭha* and *Nala-Damayantī*, seasons (*Bārāmāsā*), portraiture, and the *Rāgamālās*.

The *Rāgamālas* ('Garlands of Musical Modes') as expressed in painting provide a group of subjects giving unlimited opportunities for artistic treatment. They are derived from the inexhaustible fountain of Hindu religious and lyrical imagination. The best examples belong to the seventeenth century and are characterized by singular tenderness and lyrical grace giving them a title to be reckoned amongst the best pictorial works ever produced in India.

The idea of associating music with painting, although unique to Indian art, should not be made the subject of needless mystery. Each *rāga* and *rāginī* (musical tune) has for its burden an emotional situation based on some phase of love, either in union or in separation. The picture of a *rāga* is a visual representation of this emotional state of mind treating the material world and nature as mirrors of the same mood. The names of the *rāgas* are partly derived from the geographical distribution of the different tunes which were selected for the expression of particular sentiments. For example, the *Tōḍi rāginī* takes its name from South India (ancient *Tōḍi*). Its pictorial representation usually consists of a charming woman playing the *vīṇā*, the characteristic South Indian instrument, and attracting bright-coloured deer. The imagery is quite transparent, corresponding to that of a maiden whose blossoming youth has just begun to inspire the strains of love, and listening to whose melody the herd of deer, symbolizing young lovers, gets bewildered and flocks round her. Similarly we can understand the emotional conception of other *rāgas*, e.g., *Khambāvatī* worshipping *Brahmā* illustrates an old idea making the Creator fall in love with the charming beauty of his own creation; *Bilāvala* corresponding to the type of a heroine in whom pangs of love are awakened by a vision of her own beauty in a mirror; or *Malkaus* typifying lovers in dalliance; or *Desākh* corresponding to a heroine with extreme passionate intensity rubbing her body against a post, symbolizing the hero; or the most favourite of the *rāginīs*, the *Bhairavī*, representing the young heroine, who, delighted, like *Pārvatī*, by the vision of a union with her lover, gets absorbed in worshipping him.

The different *rāgas* were appropriated to different seasons connecting certain strains with certain ideas. According to the exposition of William Jones, 'the artists were able to recall the memory of autumnal merriment at the close of the harvest; of

reviving hilarity on the revival of blossoms and complete vernal delight in the month of Vasanta; of languor during the dry heats and refreshment by the first rains which cause in the Indian climate a second spring. The inventive talents of the Greeks never suggested a more charming allegory than the lovely families of the six *rāgas* named in the order of seasons—Bhairava, Mālava, Śrī-Rāga, Hīṇḍola or Vasanta, Dīpaka and Megha; each of whom is wedded to five *rāginīs* or nymphs—presenting wonderfully diversified images for the play of the artist's genius'. A *rāga*-painting is represented in pl. LXIII B.

The Pahārī school

The same inspiration and subject-matter gave birth to the paintings of the west Himalayan schools, popularly known as Pahārī, and produced in the bee-hive of the sub-Himalayan states of Jammu, Basohli, Chambā, Nurpur, Kāngrā, Kullu, Mandī, Suket, etc. Tehri-Garhwal, the southernmost centre of this group, shows in its paintings a family-resemblance to Kāngrā where some excellent finished work was produced in the late eighteenth and early nineteenth centuries. The eternal theme of the Himalayan art is the figure of Krishna both in his boyhood pranks and his love-episodes with Rādhā (pl. LXIII A). Dance and music in sylvan surroundings form a recurrent motif of this school. The paintings produced at Basohli show unusual brilliance of colour and animated expression. Their vigorous quality, spacious composition and brilliant colours entitle these pictures to a very high place amongst the Pahārī masterpieces. The paintings of Kāngrā proper exhibit fine workmanship as in Mughul miniatures. Their tones are subdued and the line is exquisitely fine, rhythmic and racy, specially in the delicate rendering of female figures.

The Mughul school

The Mughuls in India were enlightened patrons of art, under whom architecture, painting, textiles and carving burst into a new efflorescence. As a boy Akbar had himself taken lessons in drawing, and to his personal interest and patronage of painting is due the great impulse that this art received during his reign. He invited hundreds of painters from all over India including Gujarat-Rajputana and entrusted them with the work of producing illustrated masterpieces of Sanskrit and Persian literatures. Amongst these was the history of the house of Timūr, now preserved in original at Patna, the *Mahābhārata* of which Akbar's own copy under the name of *Razmnāmā* with 169 pictures is preserved at Jaipur, the *Hamzanāmā*, a book of romantic tales for which the emperor had great

fondness and of which 1375 paintings were executed on cloth (only about a hundred are now preserved, of which four are in India), the *Rāmāyana*, the *Akbarnāmā* (life of Akbar by Abu'l Fazl) the *Iyar-i-Dānish* and others, each of which a number of painters combined to illustrate. It was an eclectic school that Akbar built up, taking the best elements of the Rājasthānī and the Persian schools and imparting to it a genuine Indian feeling. As the Mughuls gradually became rooted in the soil, so also did the pictorial art fostered by them, develop its essentially Indian character and the Mughul school soon spread throughout the country. It was an art primarily of book-illustration and individual portraiture including varied scenes of court- and palace-life depicting the emperors, their family and nobles. Whereas in the Gujarati and Rājasthānī schools the same idealized type of human face was nearly repeated again and again like the types in sculpture, the facial type in Mughul art was meant to represent with all the mastery of line and colour real persons endowed with character and individuality.

Jahāngīr, a generous patron of painting and artists, used to pride himself on the critical powers of appreciation: 'I am very fond of pictures and have such discrimination in judging them that I can tell the name of the artist. If there are similar portraits finished by several artists, I could point out the painter of each'. The beauty of line and the delicacy of soft colours melting into one another mark the beautiful paintings executed in his reign, which are mostly concerned with the episodes of his own life. He was extremely fond of animal (pl. LXII B) and bird drawings of which many masterpieces by Ustād Manṣūr have been preserved.

The name of Shāh Jahān is associated with tremendous building-activity (p.128). The art of painting did not receive the same attention as architecture, but the painters spared no pains in the careful treatment of lines, selection of colours and highly-finished decorative details, although the pictures are marked by a certain amount of stiffness. Individual portraits, *darbār*-scenes and paintings of *darveshes* are numerous. In the time of Aurangzeb painting received a setback as imperial patronage was withdrawn and painters were obliged to fall back upon the precarious patronage of local courts. The subject-matter of later Mughul paintings was now confined mainly to harem-scenes with kings and grandees indulging in drink and music in the company of women. The *Rāgamālā* subjects also were adopted by the painters of the Delhi school but with poor results.

The art of the Mughuls was aristocratic, distinguished by realism, careful and refined draughtsmanship, and a high intellectual quality.

In addition to their historical value, its finest products are aesthetic gems which have elicited the appreciation of discriminating art-critics.

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CHAPTER VI

CONSERVATION

THE foregoing pages will have given the reader an idea of the immense archaeological wealth of India. To save for posterity this cultural heritage, which had suffered from age-long neglect and devastation from a variety of causes, is one of the chief functions of the Archaeological Survey of India and of the similar organizations in what were till recently known as the Native States of India. The heavy tropical rainfall, particularly in the eastern regions and the west coast of India, which induces luxuriant growth of vegetation, has led to the somewhat rapid disintegration of many a monument. Unlike the western countries, where a monument can be left to itself after thorough repairs, in India after the initial treatment a monument needs constant attention by way of 'annual repairs', which include jungle clearance after the monsoon, re-setting of stones and bricks rendered loose by the rains or by the sprouting root of a tree. A thick growth of moss or lichen may disfigure a monument and, in acute cases, completely hide from view its carved or sculptured surface.

The destructive action of salt is particularly noticeable on monuments standing by or within a few miles of the sea, as the salt-laden air penetrates into the permeable surface of rock-cut masonry or brick monuments and wears it out. Inland, particularly in the north-west, the presence of saltpetre in the soil, left unutilized by the absence of plant-life, wears out structures and reduces bricks to dust.

Another cause, sometimes very acute, of injury to monuments has been the occurrence of earthquakes in the submontane regions of India. When we take into account the injury done to monuments by some recent earthquakes, such as the Kāngrā earthquake of 1905, the Assam earthquakes of 1918 and 1945 and the Bihar earthquake of 1934, we can easily imagine that the many unrecorded earthquakes in old days must have been responsible for damage to and the ultimate destruction of many a monument.

Human agency as a destructive factor can take and has taken in India many a form. There are recorded cases of the bigotry of one religious community injuring and disfiguring monuments of a rival community. The iconoclastic zeal of the invaders from the north-west in the eleventh and subsequent centuries has been

particularly offensive in this respect. Quarrying for bricks and stone has also contributed greatly to the destruction of monuments. Of the cases on record, the most glaring ones are the rifling of the Dharmarājikā stūpa at Sārnāth (above, p. 61), of the Bharhut stūpa (p. 81) by the local people for building purposes, of the Amarāvati stūpa (p. 81) by a landlord for the stones to be burnt into lime and of considerable parts of the ruins at Harappā by a Government contractor for ballast required for laying rail. In 1828, under the Governor Generalship of Lord Bentinck, a Government-sponsored proposal was set afoot to demolish the Tāj Maḥal for the value of its marbles and was indeed seriously considered for the next seven years. The utilization of Mughul forts for housing troops in the eighteenth and nineteenth centuries led to extensive alterations, and sometimes the demolition, of monuments, and it was not without difficulty that the military area could later on be separated from the archaeological area in some of the forts. More innocent, but not less disfiguring, have been the later accretions to and alterations of ancient temples and mosques, intended to make them conform to current taste and requirements. Lastly, agriculture has been responsible for the progressive denudation and, in some cases, complete levelling down of ancient sites.

Although a systematic survey of ancient monuments was started by Alexander Cunningham in 1861, it was not until twenty years later that any organized attempt was made to preserve the monuments from decay. The appointment of H. H. Cole as Curator of Ancient Monuments 'to superintend, under the Supreme Government, the conservation of the most celebrated and important examples of national archaeology and architecture throughout India' was a notable event, as it carried with it the recognition of the fact that the preservation of monuments was a permanent responsibility of the State. Prior to this, the conservation-activities of the Government had only been sporadic, the chief among them being the repairs to the Tāj Maḥal in 1808, to Fatehpur Sikrī and Sikandara (near Agra) in 1815 and the following years, Quṭb Minār (Delhi) in 1826, the monuments at Thatta (District Karachi) in 1885 and Ahmadnagar (Bombay) in 1867.

During the four years or so that Cole held office, he visited a few important monuments all over India and advised the local administrations about their repairs, some of which were actually carried out. Of the monuments that received his care mention may be made of those at Bijāpur, Ahmadnagar and Kārle in West India; Mahābalipuram, Trichinopoly, Madurā, Tanjore, Conjeeveram and Kumbhakonam in South India; Sānchī and Gwalior in Central India; Mount Ābu, Ajmer, Mewār, Agra and Delhi in

North India; and Lahore and the Buddhist remains in Yusufzai land in the North-West¹.

The central organization for conservation broke up in 1885, and conservation, like exploration, virtually came to a standstill. However, the listing of monuments, started in 1883 with a view to taking stock of the existing material, continued at a slow pace under the local administrations.

Following the declaration by Lord Curzon in 1901 that it was 'equally our duty to dig and discover, to classify, reproduce and describe, to copy and decipher, and to cherish and conserve' and the appointment of a Director General of Archaeology in 1902 (above, p. 6), the Ancient Monuments Preservation Act was passed in 1904 'to provide for the preservation of ancient monuments . . . and for the protection and acquisition in certain cases of ancient monuments and of objects of archaeological, historical and artistic interest'. Despite the moderate nature of the provisions of the Act, it gave a legal basis to the conservation-activities of the Archaeological Survey of India and has been the mainstay of the protection of ancient monuments from deliberate damage. Large-scale repairs to monuments standing badly in need of attention were soon undertaken. The rules governing such repairs were formulated, the underlying principle being that 'our first duty is not to renew but to preserve'².

Throughout the period of its existence from 1902 the Archaeological Survey of India has been devoting itself, *inter alia*, to the task of preserving the national monuments of India and saving them from further decay. All categories of monuments—ruined stūpas, temples, mosques, tombs and forts, rock-cut monuments, excavated remains, paintings, etc.—have received their due share of attention. The problems of each category have been different. In ruined standing monuments the chief tasks have been the clearance of their plans by rescuing them from heaps of fallen debris; the preservation of the core of masonry or brickwork exposed by the facing having fallen off; filling up and grouting cracks; underpinning worn-out bases of walls; re-setting perilously out-of-plumb walls; making ruined wall-tops watertight; pointing open joints; eradication of vegetation, etc. In Muslim monuments additional complications are often introduced by the presence of damaged arches and domes. In the rock-cut caves and temples of West and South

¹ Cole's reports comprise sixteen volumes of the *Preservation of National Monuments* series (Simla-Calcutta, 1881-85).

² J. Marshall, *Conservation Manual* (Calcutta, 1923), p. 10; cf. *Indian Archaeological Policy*, 1915 (Calcutta, 1916,) p. 18.

India the gradual wearing out of the rock has been the chief problem. While chemical preservation is called for in some cases, in the majority of them the percolation of water from one or more sources, which may be at a considerable distance from the monument, is generally hard to detect and check. In excavated remains with buildings of more than one period¹ the problems are necessarily different: the preservation is concerned with the overhanging later structures, often resting on nothing more than loose earth or débris, and sometimes with the drainage of rain-water from the lower levels much deeper than the adjoining surface. In the excavated areas of Mohenjo-daro and Harappā (above, p. 32) salt starts disintegrating the brickwork immediately after it has been exposed. The use of over-burnt bricks was found to be nothing more than a palliative and the practice has now been stopped. The above categories of work do not by any means exhaust the numerous problems the conservator has to face in preserving ancient monuments but conveys some idea of their variety and wide range.

It is neither possible nor necessary to detail here the numerous measures of conservation carried out by the Archaeological Survey of India and similar organizations in Indian States for the preservation of protected monuments. Clearing jungle, repairing a cracked wall, making good broken or missing components—items of conservation like these, vital as they are for the preservation of a monument, are essentially of the nature of annual routine. It will do to mention here only a few of the large-scale programmes of conservation undertaken from time to time².

One of the most important works done by the Archaeological Survey of India in its earlier days was the conservation of the group of monuments at Sānchī in Bhopāl State (pp. 79 and 139). These had suffered as much from the ravages of time as from the activities of previous explorers, one of whom, Captain Johnston, had opened up the Great Stūpa from top to bottom on one side and left a wide breach in it, while Cunningham himself had done much

¹It has often been said that the excavated areas should be filled up after the necessary records have been made, but this is not always suitable for Indian conditions which require at least parts of selected excavated sites to be left open for public education, and the advantages of visual education are admitted on all hands.

²See *An. Rep. Arch. Surv. India*, 1902-03 to 1936-37. Annual Reports of the Archaeological Departments of the following States are also available: Mysore (1900-01 onwards), Jammu and Kashmir (1911 onwards), Hyderabad (1914-15 onwards), Travancore (1924-25 onwards), Gwalior (1924-25 onwards), Cochin (1926-27 onwards), Jodhpur (1928 onwards) and Baroda (1936 onwards).

damage by indiscriminate digging. The monuments engaged the attention of the Survey, working in collaboration with Bhopāl State, for seven years from 1912. In the Great Stūpa itself, the whole of the south-western quadrant, which was about to collapse and threatened to bring down with it the south and west gates, was dismantled and reconstructed. The dome, balustrades and crowning umbrellas of the Third Stūpa were restored and the whole site was levelled and turfed. These measures have now restored something of the original dignity of the group which is at once one of the most important and magnificent monuments in India.

Of the other Buddhist monuments, the ruins at Takht-i-bāhī (above, pp. 54 and 82) and the excavated remains at and around Taxila (above, p. 50), Kasiā, Saheth-Maheth (p. 69) and Sār-nāth (p. 61) were conserved and saved from further destruction. At the last place the lofty Dhamekh stūpa was partially refaced with stone to save its core, of which the upper part has recently been underpinned on a large scale. The inherent problems of conserving excavated remains referred to above (p. 158) were successfully tackled at Nālandā (above, p. 62), where, even according to a not very friendly critic of the Archaeological Survey, 'the Great Stūpa has been dealt with very successfully and in some of the monasteries the method adopted for preserving high-lying walls by underpinning with reinforced concrete and with set-back brickwork is very good and the conspectus of different levels so given is most clear'¹.

The dilapidated Hindu temples too received their due share of attention. The elegant stone Muṇdeśvarī temple at Chainpur (District Shāhābād, Bihar), the brick temples at Bahūa and Bhītargāon (Districts Fatehpur and Kanpur, U. P., above, p. 95), the large groups of temples in the Almora Hills (U. P.), the small but exquisite shrine at Tigāwā (District Jubbulpore, above, p. 94), the Lakshmaṇa temple at Sirpur (District Raipur, C. P., above, p. 98) and the Mahādeva temple at Pāli (District Saugor, C. P.) were preserved by necessary repairs. The well-known temples at Khajurāho (above, p. 99) were attended to with the help of the Chatarpur State (now integrated with the Vindhya Pradesh Union). The work in the lavishly-ornamented Jaina temple (p. 101) on Mount Ābu (Sirohi State, now in Bombay Presidency) was particularly difficult owing to the presence of broken marble lintels with extremely fragile traceries. In Mayūrbhanj State (now merged with Orissa) the State archaeologists reconstructed from

¹ C. L. Woolley, *A Report on the Work of the Archaeological Survey of India* (1939).

the foundation to the finial, mostly with old material, three early medieval temples at Khiching,—a task which was successfully accomplished but the principle of which may be questioned.

In South India the problem of conservation is complicated by the fact that most of the temples are even now used as places of worship, and it is neither expedient nor possible to assume complete responsibility for the maintenance of such monuments. A Religious Endowment Board has been constituted by the Government of Madras to look after the preservation of 'living' temples and to see that their ancient character is not destroyed by modern additions and alterations. The all-important group of temples at Bhuvanesvar (District Puri, above, p. 98), some of which are under worship, were once declared protected and taken over for repairs, but had subsequently to be given up due to local hostility. Recent efforts, however, have succeeded in retrieving many of these temples once more, and a comprehensive programme of conservation is now being carried out to preserve these remarkable temples.

Much attention was paid to the Muslim monuments at Delhi in 1910 and the following years, as the planning of the new capital necessitated a thorough conservation of most of the monuments to bring them into accord with the new set-up. The unsightly villages round the Old Fort of Sher Shāh (1542-45, above, p. 124) were removed, its walls and gateways cleared of débris and a new approach-road through an old gate provided. In the Red Fort of Shāh Jahān (1627-59, above, p. 130), apart from normal repairs to fort-walls and monuments inside, the buried causeways, water-channels and fountains were excavated, restored and made to function. At the Quṭb Minār the old levels of buildings were restored, all modern accretions removed and new roads not conforming to the lay-out of the monuments diverted. Equally far-reaching measures were adopted on other monuments such as the Khirkī Masjid, Moṭh-kī-Masjid, Tughlaqābād (above, pp. 112 and 113) etc.

Of the other Muslim buildings that received attention, mention may be made of the fort and tomb of Akbar (1556-1605), the early seventeenth-century tomb of 'Itimādu'd-Daulah and the Tāj Maḥal, all at Agra (above, pp. 127 and 129). At the last monument the approach-road was cleared of all modern excrescences, the colonnades of the forecourt were re-built and the forecourt itself was laid out with lawns and trees. The inner garden was re-laid on ancient lines and the normal functioning of the old water-channels and fountains restored. At Lahore the Shīsh Maḥal in the Fort, of the second half of the eighteenth century, and the Bādshāhi

mosque, of the reign of Aurangzeb, received much care. The Pearl mosque of the time of Jahāngir was rescued from being used as the Government Treasury and divested of the extraneous modern brickwork.

In Bihar, the fort of Rohtās (District Shāhābād), containing buildings of the time of Sher Shāh and later periods, had been lying in utter disrepair. The palace-buildings inside the fort, the gateways and parts of the fort-wall were saved from further decay by timely repairs. The magnificent tomb of Sher Shāh at Sassaram (District Shāhābād, p. 124) and the lesser tombs of two succeeding members of his dynasty were thoroughly overhauled. The problem of arresting the decay in brickwork in the damp climate of East India was particularly difficult in the early Muslim buildings at Gaur and Pānduā (now partly in West and partly in East Bengal). Of the medieval forts that were attended to, mention may be made of the ones at Burhanpur (District Nimar, C. P.), Daulatābād (Hyderabad State), Vijayanagara (Hampi, District Bellary, Madras), Kālinjar (District, Bāndā U. P.) and Māndū (Dhār State, now in Madhya-Bharat Union), the grandest of all fortresses in India (above, p. 117).

Some of the more important works done in recent years may be recorded here. No proper attention could till recently be paid to the rock-cut Buddhist caves at Kanheri, ranging in date from the first century B. C. to sixth century A. D. (above, p. 86), as the monuments were privately owned and the property on which they were situated changed hands frequently. The Government of Bombay has now acquired the whole area for the laying out of a national park and the caves can now be given the treatment they stand in need of. Some of the pillars and pilasters supporting the roof-rock have been repaired with cement-concrete. The courtyards have been levelled up and approach-roads laid. The work is not yet complete; among the problems that still remain to be tackled is the progressive deterioration of the cave-walls and sculptures which needs check by intensive chemical treatment.

The famous rock-cut temples on the island of Elephanta (above, p. 90) present some acute problems of conservation, all of which have their genesis in the disintegration of the rock caused by the presence of injurious salts in the atmosphere and the percolation of water into the caves. In 1935 three fragments of appreciable size fell off from the Trimūrti figure. Following the report of a committee of experts, extensive measures of conservation have been carried out here. All earth and vegetation have been removed from the top of the cave. Visible cracks have been grouted and the entire

rock-surface covered with a coat of gunite. Thirty holes, about 2 inches in diameter, ranging in depth from 40 to 70 feet and spaced 6 feet apart, have been bored in the southern fringe of the rock-roof and filled up with cement-grout. Another group of about 50 suitably-spaced holes have been made and filled up in the entire surface of the roof-rock. To prevent rain-water from finding its way into the main cave a deep trench with an angular flank on either side has been sunk behind it and filled with an impervious cement-barrier by the Francois cementation-process. In one of the caves columns of plain ashlar-masonry have been constructed to hold the ceiling. The loose or cracked parts of all sculptures have been internally secured with non-rusting metal dowels and cracks in the panels have been neatly filled up with suitably-coloured mortar. A constant vigilance is now maintained over this monument to detect any traces of deterioration.

The Shore temple at Mahābalipuram (District Chingleput, above, p. 103), standing at the edge of the sea-coast, is constantly subjected not only to salt-laden draft from the sea but to the beating of waves and spray. The deterioration of the masonry due to the former cause is too far advanced and too persistent to be amenable to any chemical treatment, but in order to check the direct action of water a semicircular groyne-wall of pre-cast concrete blocks, 290 feet long, was constructed between the temple and the sea in 1944-45. Two years later the wall was further strengthened by underpinning the gaps between the slabs, and last year its height was raised with mass cement-concrete. Data about the level of the sea during the rough weather are being collected, and the wall will, if necessary, be further reinforced next year.

The stupendous Sun-temple at Konārak (District Puri, above, p. 99) on the east coast was exhumed out of sand in 1893 when its architectural wealth was brought to light. While the pyramidal roof of the front porch was found to be almost intact, the *śikhara* of the sanctum was entirely missing. As a measure of holding the former in position, all the entrances to the porch were blocked up and the interior reinforced with a 15 feet wide dry-stone wall and filled up with sand in 1902. This step has proved to be of dubious value, as rain-water percolating from the top moistens the sand inside. Besides, the air charged with salt from the sea and the dampness of the atmosphere have been responsible for a weathering of the monument and for a thick growth of moss and lichen on its walls.

During the last decade the monument has received persistent attention. An extensive programme of structural repairs, including

grouting wide gaps in the masonry-joints and replacing fallen and worn-out members has been and is being carried out. The large-scale chemical treatment given to the monument is dealt with below (p. 166). It is obvious that due to the adverse atmospheric conditions prevailing round the monument both the structural and chemical treatment must be carefully planned and executed in accordance with the recommendations of an expert committee which is being appointed shortly to tackle, as far as possible, the problem of preserving this great and unique temple.

A rare specimen of pre-Muslim irrigation-system, the Anangpur dam (District Gurgāon, East Punjab), consisting of a high masonry wall with sluices for letting in water, has been thoroughly exposed and made good. The wall has been excavated down to a depth of 20 feet and its undermined parts restored. During the work, in order to obviate the possibility of any settlement of the new foundations due to the percolation of water from the highland on the outer side of the wall, water was constantly pumped out. The new masonry was laid in a mortar with a high proportion of cement and was further reinforced by a new arch hidden inside the hearting of the wall to take the weight of the masonry above.

The Gol Gumbaz at Bijāpur (above, p. 120) is at present one of the major items of conservation. The dome-masonry developed a number of cracks and patches of plaster from the inner side of the dome began to give way. This interfered with the well-known acoustic properties of the monument and called for attention. In 1937 the dome was rendered watertight by a shell of gunite. Steps are now being taken to treat the dome from inside with a doubly-reinforced gunite shell which will rest on a tapering ring-beam of reinforced cement-concrete.

At Fatehpur Sikrī, the deserted capital of Akbar (above, p. 126), the complex of buildings containing the tomb of Akbar's spiritual guide, Shaikh Salīm Chishtī, was found to have developed cracks and the lofty walls on the south and east had tilted outwards due to the soakage of rain-water, as the original network of drains became choked and ceased to function. The 134 feet high Buland Darwāza and the wall flanking it threatened to fall and thus cause a major archaeological catastrophe. The monument has now been thoroughly overhauled from the underground cells to the roofs and parapets, and the drains at varying levels together with the *birkha* (underground reservoir) have been attended to. The entire southern terrace in several storeys has been dug out and re-laid with fresh lime-concrete involving the use of six hundred tons each of rubble and concrete. Some of the cracks in the

buildings were found to be very deep-rooted with large ramifications inside. These have been grouted; in three of them as many as about two hundred bags of cement had to be pumped in.

In 1936 the Archaeological Survey became apprehensive of the deteriorating condition of the Tāj Mahal. In view of the international reputation of the monument a committee of experts was asked to report on the necessary measures of conservation, and its recommendations have been implemented. The main items of conservation carried out consist of making the dome and drum of the monument watertight by grouting, raking out joints in the marble facing and filling them up with special lime-mortar, resetting all bulged-out stones, replacing cracked members and substituting wrought iron clamps and dowels by those of gunmetal thoroughly embedded in cement-grout. In order to draw out hygroscopic salt from the inner brickwork of the dome a weak plaster, to be repeated at suitable intervals, has been coated over the drum from inside. The inlay-work at the necking has also been made good. The split pillars and broken lintels of the four octagonal pavilions round the main dome have been replaced after properly cribbing the superstructure. The terrace round the main dome is now being rendered watertight; and the cracks in the vaulting of the first and second storeys will also receive due attention. All these measures will give the 'dream in marbles' a fresh lease of life.

MADHO SARUP VATS

A. GHOSH

Chemical Preservation

The Chemical Branch of the Archaeological Survey of India came into being in 1917 with the appointment of an Archaeological Chemist, whose principal duty was the chemical treatment and preservation of museum-exhibits and other antiquities. However, with the expansion of the Survey the scope and sphere of the activities of the Archaeological Chemist also increased rapidly, and since the problems of chemical conservation of monuments required urgent solution the preservation of ancient monuments—rock-cut caves, temples, sculptures and inscriptions etc.—soon became an important function of the Chemical Branch. Some ancient monuments are embellished with mural paintings and their scientific preservation also became, at a later stage, an important charge of the Chemical Branch. Besides this important work of preservation, the Branch has been engaged in the interpretation of ancient

India ntechniques through chenical analysis and scientific exami nation of such specimens as mortars and plasters, glasses and glazes, metals and alloys, terracotta and faïence, pigments and painted stuccos from mural paintings, besides other specimens of archaeological interest. It is desirable to discuss the activities of the Branch in relation to all these problems.

Analysis of specimens.—Chemical examination and analysis of a large number of archaeological specimens have been carried out by the Archaeological Chemist. The results of such investigations have been fruitful and of great significance. The examination of specimens recovered in the archaeological excavations at Harappā and Mohenjo-daro (p. 32) have thrown much light on the development of the material civilization of protohistoric India. Similarly the specimens of glass and glaze unearthed at Taxila and other Buddhist sites have been analysed and much information obtained on the state of technical knowledge that existed in India during the historical period. A large number of glass specimens from Nālandā, Arikamedu and Ahichchhatrā (above, pp. 62, 73 and 95) have been examined for the determination of their composition and the raw materials used in their manufacture. Analysis of glazed tiles from Chīnī-kā-Rauza at Agra has shown that the composition of the glaze differs from that of Chinese glaze, and the tiles were, therefore, manufactured not by Chinese artisans, as was supposed in certain quarters, but by Persian artisans or their Indian pupils. Glazed tiles of different colours from Sher Shāh's tomb, Sassaram (p. 124), have also been analysed with interesting results.

Investigation of ancient Indian ceramics has not been confined to glass and glaze but has been extended to ordinary terracotta and pottery. In order to elucidate the technique of fabrication of 'northern black polished ware,' (p. 68) the analysis of a number of specimens was undertaken. The results of this preliminary investigation have already been published.¹ Similarly some bright red ware recovered at Arikamedu has been found to carry a superficial layer of a glaze, which appears to be some sort of salt-glaze. The chemical analysis of a number of glazed celadon ware specimens unearthed at Arikamedu has established the date of fabrication of this ware on internal evidence.² It is proposed to systematize the investigation on ancient glass, glaze and pottery and carry out a complete statistical analysis of as many specimens of known date as possible.

¹ *Ancient India*, no. 1 (1946), p. 58.

² *Ibid.*, no. 2 (1946), pp. 93ff.

The chemical analysis of metal - and alloy-specimens from Mohenjodaro and Harappā has led to important and interesting results, in that it showed that the ancient craftsman had attained a very high degree of skill in metallurgy. Bronze was known and used on a fairly large scale, while the technique of casting and working had also been developed. The chemical composition of the Nālandā bronzes has been studied and the analysis of a large number of coins from Ahichchhatrā has also been carried out. Most of these coins have been found to contain appreciable amounts of antimony and some show the presence of lead. A number of metallic objects from Brahmagiri (pp. 39 and 74) have also been analysed and found to be composed of bronze and copper. It is desirable to study the micro-structure of these specimens in order to determine the technique of their manufacture. It is also proposed to carry out a thorough chemical and metallographic examination of datable metal - and alloy-specimens from known sites in India in order to assess the extent of technical development and metallurgical skill of the ancients. The Chemical Branch has been seriously handicapped in carrying out such investigations because of the lack of adequate laboratory and research facilities.

Ancient monuments.—Chemical treatment of ancient monuments has been carried out by the Chemical Branch in various parts of India, particularly at Elephanta, Kārle, Bhājā and Jogesvarī in Bombay Province; Konārāk, Bhuvanesvar, Udaigiri and Khandagiri and Dhāuli in Orissa; Nālandā, Lauriya-Ararāj, Lauriya-Nandangarh and Sassaram in Bihar; and Agra and Fatehpur Sīkrī in the United Provinces. Important work of conservation has been carried out with considerable success at Elephanta, where a group of priceless sculptures has been rescued from decay which once assumed alarming proportions. On analysis these sculptures were found to be impregnated with injurious soluble salts derived from the sea, and the rock above the cave was also found to be porous and spongy. The chemical treatment consisted of the application of wet paper-pulp to the affected sculptures for the elimination of injurious salts and subsequent preservation with a thin solution of 'Gelva'-polymerized vinyl acetate resin.

Chemical conservation has also been undertaken at Bhuvanesvar (above, p. 160) where a number of sculptures belonging to Paraśurāmesvara and Mukteśvara temples have been subjected to paper-pulp treatment and freed from moss and vegetation.

The gigantic Sun-temple at Konārāk (p. 162), where intensive chemical work has been carried out for a number of years, presents very difficult problems of chemical conservation. This monument is

built of a highly ferruginous sandstone. The rock has weathered considerably and its proximity to the sea is detrimental to its lasting preservation. The attrition caused by dust-laden winds and the disintegration brought about by the crystallization and solution of soluble salts, partly derived from the soil and partly from the sea-breeze, have reduced most of the sculptures to mere skeletons and the highly ferruginous sandstone is now in the grips of rapid decay. A large number of sculptures have been freed from soluble salts by the paper-pulp method. The surface has been consolidated with thin solutions of vinyl acetate resin and the solvent action of meteoric water minimized by the application of hard paraffin-wax to treated sculptures. The entire Nāṭ Mandir has been chemically treated in the above manner, and the measures have also been extended to front porch. However, the measures have not been wholly satisfactory and the treatment has to be repeated periodically. It may be stated that so far no rock-preservative has been evolved which can consolidate and strengthen huge stone monuments that are exposed to sun and rain and protect them from the elemental forces indefinitely. The problem of providing suitable drainage of rain-water at Konārak has still to be tackled, because at present a considerable part of the plinth of the temple remains submerged under water during the monsoon. The sand-filling inside the front porch also continues to give out, long after the rains, considerable quantities of moisture which keeps portions of the temple wet almost throughout the year. The growth of moss and lichen is, therefore, difficult to eradicate. A considerable measure of success had, however, been achieved in checking the growth of moss and lichen with zinc silicofluoride, and it may be noted that dry parts of the monument are now almost free from vegetation.

The famous Shore temple at Mahābalipuram (above, p. 162) presents extremely difficult problems of conservation. The temple is virtually saturated with sea-salts due to the direct beating of sea-waves which has been going on for centuries. The coarse-grained rock of the temple is being reduced to powder bit by bit, and since the supply of soluble salts is perennial because of the close proximity to the sea and of the salt-laden winds and sprays which continue to deposit sea-salt on the temple, all attempts at the chemical conservation of this unique monument have been abandoned. In fact a chemical treatment is likely to do more damage than good because of the environmental conditions and the salts.

The stucco images on the main stūpa at Nālandā (above, p. 63) were found to be impregnated with injurious soluble salts. For the preservation of these images the entire brickwork of the stūpa

has been rendered watertight by pointing and grouting open joints and using a waterproofing agent on the terrace. The images have been treated with wet paper-pulp and after the elimination of soluble salts they have been preserved with 5 p.c. vinyl acetate solution. The treatment has proved quite effective and it is proposed to extend these measures to the other images.

The treatment of the famous Hāthigumphā inscription of Khāravela at Udaigiri (above, p. 87) and the preservation of the Aśokan inscription at Dhauri, both near Bhuvanesvar, have been successfully carried out by the Chemical Branch. Chemical treatment of inscribed *mihirāb* in the Sher Shāh's tomb at Sassaram (p. 124) and the preservation of some sculptures at Jogeśvarī, Kārlā and Bhajā (p. 85) has also been carried out.

In this connexion it is desirable to discuss the various problems of decay of ancient monuments and the measures that have to be adopted for their scientific conservation. Generally speaking, the more important causes of decay of rock-monuments in India are injurious soluble salts, considerable fluctuations in temperature and heavy rainfall. Some of the monuments are of colossal dimensions and it is a problem to check the solvent action of rain water and the attrition caused by dust-laden winds. The fluctuations of temperature bring about flaking and cracking of the rock, and the soluble salts cause enormous damage due to repeated solution and crystallization under suitable conditions.

The choice of a suitable stone-preservative is extremely limited. Some of the reagents which have been recommended for use on rock monuments have been found to exert deleterious effect on the rock itself; others cause flaking and exfoliation of the rock. So far no suitable stone-preservative has been found which can offer permanent protection to the surface and also consolidate the rock as a whole. On experimentation some preservatives have been found to possess little adhesion, as they are washed off by the first few showers of rain; other show very little penetrability and form a superficial skin on the surface of the rock. We are not aware of a preservative which has been tried and tested and then found suitable for the preservation of exposed monuments in any part of the world. The quest for a suitable preservative for such monuments is going on, and it is desirable to conduct some research on this problem in India in order to evolve a suitable reagent or formula for the preservation of rock monuments. The use of synthetic resins, vinyl acetate, polymethylmethacrylate, Tornesite, hard paraffin-wax etc. has not yet been based on proper scientific basis in this country for want of research facilities, but most of them

are being used in India on the lines adopted in the West with such modifications as seem necessary.

Although zinc silicofluoride has been used with success for the eradication of moss, it is necessary to find out efficient tree-killers and weedicides for the eradication of trees, weeds and other vegetation which are a peculiar feature of this country.

Reference may also be made in this connexion to the important work of structural conservation in which the use of a suitable waterproofing agent is called for for rendering terrace etc. watertight. Most of the waterproofing agents of commerce are found to contain soap, oil or wax and some contain large quantities of metallic powder. All these are known to exert injurious effect on delicate structures such as marble monuments. It is therefore necessary to conduct research on the modern synthetic resins in order to evolve a suitable waterproofing material for use on such monuments as the Tāj Mahal. The problems of waterproofing the terrace of the Tāj requires much research and experimentation.

Mural paintings.—Some of the ancient monuments are embellished with mural paintings which stand in need of chemical treatment and preservation. Considerable work on this problem has been carried out by the Chemical Branch and the wall-paintings at Asar Mahal and Kumutgi in Bijāpur District, as well as the mural paintings at Bādāmi and Hoshangābād have been chemically treated and preserved. The preliminary chemical treatment of the wall-paintings at Madanpur in Jhānsi District was carried out several years ago and it is now desired to carry out the preservation of these paintings systematically. There are a large number of monuments in South India with mural paintings, such as those at Śittannavāśal Conjeevaram, Tirumalaipuram, Tirumali, Tanjore, Lepākshī and Somapalle. The Chemical Branch is at present engaged in extensive chemical work on the mural paintings at Tanjore. The problem of these murals is a complex one due to the existence of two layers of paintings. The upper layer of paintings of the Nāyaka period (sixteenth century) is to be transferred and mounted and the underlying layer of paintings of the Chōla period (eleventh century) to be exposed and preserved *in situ*. These and other problems of preservation of these paintings are being systematically dealt with by the Chemical Branch.

Extensive mural paintings are also found in many Mughul buildings in North India. The Chemical Branch has carried out on a restricted scale, the treatment of some paintings in the Agra Fort and at Fatehpur Sikrī.

It may be stated here that the mural paintings at Ajantā were subjected to elaborate chemical treatment nearly a quarter of a century ago by Signor Cecconi, whose services were secured for this special work by Hyderabad State. These measures checked the decay and deterioration of the paintings, but it is now necessary to treat the paintings again as the decay of the paintings is reported to be increasing gradually. Modern science has placed at our disposal a number of synthetic resins, some of which are admirably suited to the work of preservation. For instance, the vinyl and methacrylate resins have been found in recent years to be very useful as surface-preservatives of mural paintings as well as good adhesives for securing loose plaster and for preventing the flaking of colours. The methods of Signor Cecconi, who used casein and lime-plaster and shellac in spirit for filling wide cavities and beeswax in turpentine as a surface-preservative, have become out of date, as natural resins are now considered harmful to mural paintings.

It may be emphasized that the treatment of mural paintings in India has been carried out on the lines adopted in the West with such modifications as seemed necessary. However, this, like stone-preservatives mentioned above (p. 168), lacks at present a proper scientific basis. It is not yet known how polymerized vinyl acetate behaves in a tropical country like India. We do not know with any degree of precision what is the penetrability of such a preservative solution in the case of mud-plaster and compact lime-plaster and we are not aware of its behaviour under conditions of high humidity. It is therefore essential to carry out systematic research on such preservatives as Polystyrene, vinyl acetate, methylmethacrylate etc., in order to establish the best conditions for their use in India. Eminent experts in Europe, and the United States of America have been consulted and their opinion sought on the methods and technique of preservation of wall paintings, and it is proposed to adopt some of the methods suggested by them for conservation of mural painting in India.

B. B. LAL.

CHAPTER VII

ARCHAEOLOGICAL MUSEUMS

The Development of Indian Museums

The first museum in India was established by the Asiatic Society of Bengal in the year 1814 on its own premises. This collection provided the nucleus of the Indian Museum founded under the Indian Museum Act of 1866, although it was not till 1875 that the present museum-building in Chowringhee became available for housing the museum. The Madras Literary Society, a branch of the Royal Asiatic Society of London, was the next to establish a museum and in 1854 the present museum on Pantheon Road in Madras was completed to receive the collection which had previously been located in the College of Fort St. George. The Calcutta and Madras examples proved so encouraging that between 1850 and 1900 more than twentyfive museums sprang up in various parts of the country, of which those at Lahore, Lucknow, Mathurā, Nāgpur, Karachi, Udaipur, Rājkoṭ, Bombay, Baroda, Faizābād, Bhāvnagar, Bangalore, Trichur and Trivandrum had notable archaeological or historical collections. The opening years of the twentieth century during the viceroyalty of Lord Curzon witnessed the organization of the Archaeological Survey of India (above, p. 6) and the great impetus thus given to the study of archaeology, followed by the progressive expansion of archaeological enterprise throughout the country, gave rise to the growth of archaeological museums, and the officers of the Archaeological Survey of India have been since advising on the archaeological collections in the Provincial and local museums. In pursuance of the policy of the Department of Archaeology to establish museums on important excavated sites for the purpose of safeguarding movable antiquities and exhibiting them to their best advantage amidst their natural surroundings, museums sprang up at Nālandā, Sārnāth, Taxila, Harappā, Mohenjo-daro and Nāgārjunikondā, and museums of Mughul antiquities were established at the Tāj at Agra and Delhi and Lahore Forts. To place the museums maintained directly by the Department of Archaeology on a sound footing a Museums Branch of the Department was established in 1945 to control the site-museums besides being in direct charge of the Central Asian Antiquities Museums, New Delhi (below, p. 176). Other museums with notable archaeological collections were founded in Bombay, Bījāpur (Bombay Province), Bāripadā and Khiching (Mayūrbhanj

State), Chambā (Himachal Pradesh), Cuttack (Orissa), Dacca (East Bengal), Gauhāṭī (Assam), Gwalior (Madhya-Bharat), Himatnagar (Idar State), Jaipur, Hyderabad, Jodhpur, Khajurāho (Vindhya Pradesh), Mysore, Patna, Peshawar, Poona, Quetta, Sānchī (Bhopal) and Udaipur. Today there are in India, excluding Pakistan, ninety-six museums, of which more than half have archaeology represented in them and it would be no exaggeration to say that more than half of the entire museum-collections consists of archaeological and historical material.¹

The reason for this bias in favour of archaeology is not far to seek. During the medieval period immeasurable damage had been done to temples and other religious establishments, resulting in the dismemberment of carved architectural pieces and disfigurement of sculptures and the bulk of the *disjecta membra* of ancient shrines now found their way into the museums. The worth of these objects of antiquarian value and historical interest was recognized early in the nineteenth century and the drive for their collection, available with little expense and labour and with no hindrance, was greatly accelerated by the activities of Alexander Cunningham and his associates (above, p. 2), who in their exploratory tours and sporadic excavations spared no pains in gathering objects for display in museums. The proceeds of the subsequent systematic excavations conducted by the Archaeological Survey of India on ancient sites (above, Chapter II) have gone to enrich the museums of India. The excavations of the Archaeological Departments of the States have also augmented the collections in the respective States. Standing as a class by themselves are the archaeological collections recovered by Aurel Stein in his expeditions into the Chinese Turkistan (below, p. 20) now housed in a special museum in New Delhi known as the Central Asian Antiquities Museum. The museum-collections have been further augmented by finds acquired under the Treasure Trove Act and by purchase.

It is, therefore, in no way surprising that the custodianship of our cultural heritage preserved in a large number of museums is vested in the hands of the Department of Archaeology, which both directly and indirectly is playing an important rôle in the development of the museum-movement in the country. The latest activity of the Department in the field of museums is the establishment of the Archaeological Section of the National Museum of India in a part of the Government House, New Delhi, opened on the second anniversary of the Indian Independence Day (below, p. 177).

¹ For a survey of Indian museums, see S. F. Markham and H. Hargreaves, *The Museums of India* (London, 1936).

The recent division of museum-collections between India and Pakistan has been carried out in an accommodating spirit, the interests of museums in both the countries having been kept in view, and although the rich archaeological fields of the Indus and Peshawar valleys have gone to Pakistan, the Indian museums possess a fairly representative collection of the Mohenjo-daro, Harappā and Taxila antiquities. But nowhere in India, except in the Indian Museum, Calcutta, is there a good collection of Gandhāra sculpture in spite of its cultural interest to India.

With a fairly adequate and developed archaeological collection, it is time that greater stress were laid on the educative and cultural aspects of the museums. At present we are handicapped everywhere for lack of trained personnel and proper museum-buildings but it is hoped that in the near future both these hurdles would be crossed and, besides Government help, public munificence to a larger degree will be forthcoming by way of collections and donations, examples of which have set by Sir Ratan Tata and Sir Dorab Tata of Bombay making over their invaluable collections to the Prince of Wales Museum, Bombay.

Museums of the Department of Archaeology

A brief description of the salient features of the museums under the charge of the Department of Archaeology is all that can be given here. Detailed information can be obtained by a reference to guide-books and other publications where available.

Archaeological Section, Indian Museum, Calcutta. Although the archaeological exhibits in the museum had been receiving attention from its commencement in 1814 under the Asiatic Society of Bengal, it was not till after the passage of the Indian Museum Act of 1910 that the Director General of Archaeology was made one of the Trustees and placed in a position to have direct charge of the archaeological collection. For lack of funds eleven years passed before a whole-time Superintendent of the Archaeological Section was appointed in 1921 and from thence onward the Department of Archaeology has taken up the re-arrangement, labelling, proper display and publication of catalogues etc. The limited space available for the Section is a great hindrance to the development of the growing collections on modern lines.

The most striking feature of the unrivalled collection of antiquities in the Indian Museum is the stūpa-railings and one of the four gateways of the Bharhut stūpa (above, p. 81), brought in by Alexander Cunningham and now on view in an exclusive gallery.

These carved and inscribed architectural pieces of Kaimur sandstone, consisting of pillars, cross-bars and copings of the second century B.C., give a place of pride and distinction to the Indian Museum to which the student must turn for the study of the early indigenous school of art. No less important is the Gandhāra gallery where representations of the Graeco-Buddhist art-school of the north-west (above, p. 140) collected from ancient sites of Taxila (above, p. 50) Jamālgarhi, Sahri-bahlol, Takht-i-bāhī, Peshawar, Swat valley, and Chārsada (p. 54) are exhibited, and the value of this collection has been enhanced after the partition of India, as this is the only representative collection of Gandhāra sculpture now left in India. The collection of Indian coins is indeed the one of most varied and extensive in the world and includes numerous rare coins.

The Piprāwa relics of the third century B.C., containing among other objects an inscribed relic-casket and a unique crystal bowl (above, p. 79), the prehistoric and historical antiquities from excavated sites, chronologically-arranged sculptures from Mathurā, Amarāvati, Bhumarā, Sārnāth, places in Bihar and Bengal, Bhuvaneshvar, Konārak etc., Arabic and Persian inscriptions and Indo-Muslim architectural pieces, illuminated manuscripts and glazed tiles are among the other items of the collection. The group of South Indian bronzes, though not fully representative, is the best in North India.

Nālandā Museum.—The museum on the excavated site of Nālandā (above, p. 62) is arranged in four rooms and the verandah of a building which was originally designed as a combined store for antiquities, office and rest-house and is wholly unsuited for the purpose. Within this limitation the collection has been arranged and labelled to their best advantage. Antiquities from Rājgir (above, p. 55) have also been assigned a separate portion in the museum. The most interesting feature of the museum is the collection of stone and bronze images of the Buddhist gods and goddesses and a few images of the Hindu pantheon, all representing the Pāla school of art at its best, and a few stucco heads of the late Gupta period, mostly recovered from the main stūpa. Lithic inscriptions of the time of Yaśovarmadeva of the eighth century and of Vipulaśrimitra of the twelfth century are important historical records. The sealings of royalties of the Gupta and Maukhari dynasties and a vast number of official and personal sealings and many specimens of the official sealings of the Nālandā monastery form a notable series. Other interesting objects on view are a bronze votive stūpa, an ivory sandle, iron door-fittings, padlocks, bells, spoons, ladles etc., carved bricks, stone architectural fragments,

pottery, some decorated with animal and floral designs, and steatite objects. The museum and the excavations attract large number of visitors including parties of Buddhist pilgrims; to the archaeologist they are invaluable for the study of antiquities dating from the fifth to twelfth century.

Sarnath Museum.—The museum at Sārnāth, established in 1910, was the first sitemuseum of the Archaeological Survey for housing amidst their natural surroundings the antiquities recovered in the excavation. The building is planned after a Buddhist monastery, and though in its present state is only half of the complete plan, it is equipped with such museum-facilities as store-rooms, ware-rooms, office etc., and is capable of further extension if and when necessary.

The collection of antiquities in the museum cover a wide period of the history of Sārnāth from the third century B.C., to the twelfth century A.D., representing the works of art of the Maurya, Śuṅga, Kushan, Gupta and medieval periods. The place of pride is occupied by the 7-feet high lion-capital of Aśoka which represents four life-size, life-like lions standing back to back and once crowned the Aśokan pillar pl. XLIX. A 9-feet high standing Bodhisttava of the Mathurā school (above, p. 139), once protected by a stone umbrella of a diameter of 10 feet, belongs to the reign of Kanishka. Some masterpieces of Gupta art can be seen in the images of Buddha and the Bodhisattvas, upwards of three hundred in number, all of Chunār sandstone, which, along with the bas-reliefs depicting scenes from Buddha's life and architectural pieces, give the museum a unique status for the study of Gupta art (above, pp. 62 and 140). Other miscellaneous antiquities consist of stone and terracotta domestic objects, pottery, plaques, figurines, moulded bricks, miniature votive stūpas and sealings.

The exhibits are arranged chronologically as far as possible, and duplicates and spare-collection are arranged in a room for the use of the student.

Sārnāth being one of the four holy places of the Buddhists is visited annually by pilgrims from all parts of the Buddhist world and its nearness to Banaras attracts a stream of visitors every day.

Nāgārjunikondā Museum.—This small museum houses on the spot the antiquities recovered in the excavations of the stūpas, monasteries, temples, etc., at Nāgārjunikondā (above, pp. 72 and 81). The collection consists of inscriptions, coins, relics, pottery, statues and over four hundred magnificent bas-reliefs in the Amarāvati style belonging to the second-third century and either depicting

the leading scenes of the life of the Buddha or illustrating Jātaka stories and representations of stūpas (above, p. 139).

Tāj Museum, Agra.—This small museum is of purely local interest. On view in two rooms of the gateway to the Tāj Mahal are old plans of the Tāj and Agra Fort, old charters and some objects discovered in the course of clearance in the Agra Fort. Samples of stones used in the Tāj and tools employed for doing inlay-work, old bricks, sculptures and stone images together with an album of photographs of the Tāj and other monuments taken more than a century ago are other objects of interest on display.

Red Fort Museum, Delhi.—The Delhi Museum of Archaeology, established in 1909, is housed in an ancient apartment of the Red Fort. The collection, mostly of sculptures and inscriptions of the Muslim period found in the course of clearance of Qutb, Old Fort and other monuments in and around Delhi, contains a few Hindu images, carved friezes and architectural pieces, also locally found. A few pieces of furniture, copper utensils, jewellery, articles of clothing and other miscellaneous articles either found in the Delhi palace after its capture in 1857 or said to have belonged to the palace are of interest. The collection of charters, Mughul paintings, coins, manuscripts and printed books and specimens of calligraphy afford material for the student of Mughul art and crafts.

Central Asian Antiquities Museum, New Delhi.—The museum-building was specially built to house the collection of wall-paintings brought to India by Aurel Stein from his Central Asian expeditions (above, p. 148). The paintings had been removed from the walls of Buddhist monasteries in slabs of varying sizes, each about 2 inches thick, and after an elaborate process of treatment and mounting on aluminium frames they were fixed on to the walls of three rooms of the museum. The paintings, all executed in tempera, range from about the fourth to the tenth or eleventh century. This unique treasure, the only one in India and the largest of its class in the world, is invaluable to the student of art and art-history.

In addition to wall-paintings Stein recovered during the same expeditions a very large and varied collection of antiquities consisting of stone implements, pottery, beads, metallic objects such as mirrors, arrow-heads, finger-rings, seals, images, etc. woolen, stucco and glass objects, textiles of types hitherto unknown to the modern world, shoes and sandals, horn, bone, shell, coral and leather objects, documents on wood in the Kharoshthī script, drawings and blockprints and painted temple-banners and hangings, mostly of silk, discovered in one of the cave-shrines in 1907 at Chien-fo-tung ('Cave of the Thousand Buddhas') in the Tun-huang oasis dating

from the seventh to tenth century. The painting depicting the pictorial conception of 'the Paradise of the West', and Jātaka and legendary scenes are of the highest importance for the study of Chinese painting. Some important fragments of paintings were found in a grave at Astana where the cemeteries also yielded a very large collection of miscellaneous objects.

Want of space has forced the Department to close down part of the collection to the public.

National Museum, New Delhi. Till such times as a specially designed building to house the National Museum of Archaeology Art and Anthropology is built in the metropolis of India, the front State Rooms in the Government House, New Delhi, have been placed at the disposal of the Department of Archaeology for being set up as the nucleus of the comprehensive scheme of the establishment of the Museum, the principle of which has been accepted by the Government of India. In these rooms the choicest archaeological exhibits from the museums under the Department, the Provincial and State museums and private collections from all over India, obtained on loan, have been exhibited. The presentation of the sculptures is as far as possible both by schools and periods; terracottas from various sites have been arranged in a show-case; and Indus Valley finds, Central Asian antiquities and bronzes from South India have each been given a room to themselves. Paintings, of the Pāla, Western, Rājasthāni, Pahārī, Mughul and Deccani schools, have been arranged in a long room and manuscripts and arms and armours are displayed in another similar room.

The museum was thrown open to the public on the 15th August, 1949.

Other museums

In addition to the purely archaeological museums maintained by the Department, some museums run by Provincial Governments, States, municipalities or private bodies possess valuable archaeological collections. The more important of them are mentioned below.

Prince of Wales Museum, Bombay. Established 1921. A very large archaeological collection is exhibited in galleries and classified as Brāhmanical, Buddhist and Jaina sculptures, miscellaneous antiquities, epigraphical and numismatic material and prehistoric remains. A special gallery is devoted to non-Indian antiquities. The bas-reliefs from the Bādāmi temples (above, p. 95) in the Brāhmanical gallery and antiquities, including carved bricks and plaques, from Mīrpurkhās (p. 82) and Brāhmanābād in Sind in the Buddhist gallery, together with a collection of coloured tiles from different Muslim monuments in Sind, dating from the

sixteenth to the nineteenth centuries, are of exceptional interest. In the Art Section there is a good collection of Indian paintings.

Government Museum, Madras. Established 1851. The place of pride in the sculpture-collection is occupied by the bas-reliefs from Amarāvati (above, pp. 81 and 139). and Jaina and Brāhmanical stone images form other important groups. The large and varied collection of South Indian bronzes is probably the richest in the world. There is also a huge collection of copper-plates. Noteworthy also are the prehistoric antiquities from Ādichanallūr (above, p. 43) and other sites and the Foote collection of stone implements (p. 16).

Provincial Museum, Lucknow. Established 1863. The Jaina sculptures from Kankālī-tilā, Mathurā (above, p. 70), consisting of *āyāgapatas* (tablets of homage), images, capitals, pillars, decorative bas-reliefs, railing-pillars, bracket-figures etc., are of special interest. Images, from various sites in the provinces, are of Buddhist and Brāhmanical origin. The terracotta-collection from various sites and the *Rāmāyana*-tablets from Saheth-Maheth (above, p. 69) form important groups. The numismatic collection is rich in the punch-marked, Gupta and Mughul series. There is also a rich collection of Indian paintings, drawings and manuscripts.

Patna Museum. Established 1917. Antiquities from Kumrāhār, Bulandibāgh, Kauśāmbī, Vaiśālī (above, pp. 57, 71 and 68) Belwā, Bodh-gayā, Buxar and from the Patna sewerage excavations (p. 59) are very valuable. For the collection of terracotta figurines the museum occupies a unique position. Prehistoric antiquities from Chota Nagpur, bronzes from Kurkihār (p. 145), Tibetan paintings and stone sculptures from the Mauryan period to the twelfth century lend a distinction to the museum. There is also a small collection of Indian paintings.

Curzon Museum of Archaeology, Mathurā. Established 1874. This archaeological museum ranks foremost for the study of the history and art of the Kushan period (p. 139.) Images and other sculptures of the Kushan period, including inscribed royal statues, from Mathurā and its neighbourhood occupy the place of distinction in the museum. Other objects mainly consist of terracottas of pre-Kushan, Kushan, post-Kushan, Gupta and later dates, Jaina and Hindu images and coins.

Central Museum, Nagpur. Established 1863. The archaeological collection comprises antiquities from megalithic sites, part of the Copper Age implements from the Gungeria hoard (above, p. 36), Hindu, Buddhist and Jaina images, mostly of post-Gupta date and stone and copper plate inscriptions.

Provincial Museum, Bhuvanesvar (Orissa). The museum was started at Cuttack with the nucleus of the Ravenshaw College collection and was shifted to Bhuvanesvar in 1947. Neolithic implements, stone sculptures, bronzes, inscriptions, and palm-leaf manuscripts form the important items of the collection.

Provincial Museum, Gauhati (Assam). Established in 1937 with the incorporation of the collection made by the Assam Research Society. The exhibits consist of inscribed and carved stones, images, pottery, manuscripts and coins.

Asutosh Museum, University of Calcutta. Established 1937. The museum has a varied collection of stone and bronze sculptures from Bengal (particularly Sunderbans) and Orissa, terracottas, folk-art and *kānthās*, a form of local embroidery.

Municipal Museum, Allahabad. Established 1931. The archaeological section of the museum contains a most valuable collection of terracottas, coins and other antiquities from Kauśāmbī (above, p. 71), in addition to some pieces of Bharhut sculpture (pp. 81 and 139) and other antiquities from various places.

Bhārat Kalā Bhavan, Banaras. Established 1929. It contains a select collection of Indian paintings and terracottas, beads and sculptures from different places in North India. The terracottas and seals from the Railway excavation at Rājghāṭ (above, p. 71) form a valuable series.

Hyderabad Museum, Hyderabad. Established 1931. The archaeological collection is formed of prehistoric and protohistoric antiquities from Māski (above, pp. 27 and 75) and other places within Hyderabad State, images, architectural pieces, inscriptions and China and household wares used by the past rulers. Textiles, paintings and some rare illuminated manuscripts are also notable as also copies of the Ajantā paintings (above, p. 147).

Archaeological Museum, Gwalior. Established 1922. The museum is housed in a fifteenth-century building and contains sculptures found within the State and covering a period from the second century B.C. to the seventeenth century. A palm-leaf capital, carved railing-pillars and other sculptures from Besnagar are of special interest. There is also a collection of Indian paintings.

Rajputana Museum, Ajmere. Established in 1908. Hindu and Jaina sculptures, stone inscriptions, Rājasthānī paintings and coins are exhibited in the museum.

Archaeological Museum, Jaipur. Established 1942. The museum contains antiquities excavated at Bairāt, Sāmbhar and Rairh (above, p. 70), *yūpa-stambhas* from Barnālā and sculptures from Abaveri temple and Amber. The only garden-carpet in India, together with a few other carpets, is also on view. The palace-collection of paintings, carpets and arms can be seen by special appointment.

Bhuri Singh Museum, Chambā (Himachal Pradesh). Established 1908. The archaeological collection consists of images, inscriptions, sculptured fountain-stones, copper-plates, wood-carvings and a large group of paintings from within the State.

Mysore Government Museum, Bangalore. Established 1865. The archaeological section is notable for the images and sculptural fragments from Halebid and Belur temples (above, p. 103) of the ninth to eleventh centuries.

State Museum and Picture Gallery, Baroda. Established 1894. A large number of medieval sculptures and of Indian paintings form the bulk of the collection.

Museum of Archaeology, Sānchī. (Bhopal). Established 1919. All antiquities ranging from the Mauryan to the medieval period excavated at Sānchī (above, pp. 80 and 139) are housed in this museum. Of particular interest is an Aśokan pillar-capital and relic-caskets.

It will be seen from the foregoing that the archaeological material in the Indian museums is vast and varied, but in most cases it remains to make the material available in ways suitable for the average visitor and the serious student. One of the main needs of an archaeological museum is almost unrestricted space for the proper display of exhibits showing their relation to each other, and for the accommodation of the large material that turns up as a result of exploration and acquisition. This essential requirement cannot be met by any existing museum where room for expansion does not exist. To make any series comprehensive the display should not necessarily be restricted to objects of artistic merit, but lack of space often forces the Indian museums to eschew objects not sufficiently attractive. In one or more museums representative sets of different categories of antiquities from all parts of the world, either in original or in copies, should be made available for comparative study. Above all, periodical exhibitions and the system of exchanges among the museums of India and, later on, among outside museums should be organized and placed on a sound footing.

The establishment of the National Museum at New Delhi is fraught with immense possibilities of organizing an efficient museum-service in India. It can act as the receiving agent of foreign objects,

effectively house the best representative and rare specimens and distribute the rest to the local museums. It can also advise the latter about exchange, keeping in view the requirements of the different museums, and organize travelling exhibitions. Lastly, it can serve as the store-house of antiquities to which the student of all aspects of India's material culture can turn for intensive and comparative study.

K. N. PURI

CHAPTER VIII

EPIGRAPHICAL RESEARCH

1. *Prākṛit and Sanskrit inscriptions*

EPIGRAPHY enjoys a unique position in India. Nowhere else has it served history so well as it has done here. It constitutes the most substantial part of all the varied data afforded by archaeology as sources of history. It is no exaggeration to say that without epigraphy our knowledge of the ancient history of India would have been next to nothing. Happily, India has inherited a vast legacy of epigraphical material, as if under the dictates of the law of compensation; for she can otherwise boast of no regular archives of historical records, annals or chronicles, relating to the early period. The number of old inscriptions so far discovered runs literally into thousands, and it is gratifying that this wealth is being augmented by hundreds of fresh discoveries every year. Besides, the numerous ancient sites that await excavation always hold out a great promise. It is well to remember here that in most cases the inscriptions from which we deduce so much history were originally not intended to be so exploited. This circumstance has both an advantage and a disadvantage: advantage, because the contents of such a casual record are sure to be free of bias; disadvantage, because an inscription would have been more informative were it meant to be a chronicle in the true sense. As it is, we are often left with the laborious task of gleaning bits of information, scattered as incidental details in a variety of inscriptions, and piecing them together into a narrative. The labour involved is rewarded with the reliability achieved. Information imparted by an inscription is generally accepted as more trustworthy than any other. It seldom needs corroboration. On the contrary, it often authenticates a literary text, lends authority to a tradition, or confirms an inference. This, however, does not imply that whatever is related in an inscription must necessarily pass as a proved fact. Opinions may differ as to the decipherment of a particular passage; it may lend itself to more than one interpretation; conflicting versions of one and the same event may be found in different inscriptions; or an inscription may after all turn out to be a spurious one. Such exceptional cases apart, inscriptional evidence on the whole is unimpeachable.

Inscriptions are found engraved on all sorts of objects, but more commonly on those of metal and stone. The latter includes rock-surfaces, walls of natural or artificial caves, pavements, pillars,

slabs, statues, reliquaries, and other objects. As regards metal, while instances of inscriptions occurring on a gold leaf or on a silver scroll are known, it is brass, bronze and copper that are more in evidence in the shape of utensils, images, plates, etc. Iron, too, is represented, though on a modest scale, a conspicuous example being the iron pillar at Mehrauli near Delhi, which contains a beautifully engraved inscription, recounting the victories of Chandra, generally identified with the Gupta monarch Chandragupta II (c. 375-413). Besides, bricks, earthenware, clay tablets, terracotta plaques, and even woodwork and crystal occasionally come into play. An inscription, as the term implies, is usually *incised*. There are, however, a few sporadic exceptions to this rule, where an inscription is either painted or written in ink. A copper-plate, discovered at Kasiā (District Gorakhpur, above, p. 69), containing a Buddhist text in thirteen lines of writing in the characters of the fifth century, is of unusual interest inasmuch as its first line is *engraved* and the remaining ones *written* in ink. It thereby 'reveals how copper-plates were inscribed. The inscription was first written out in ink on the plate, and when the ink dried the plate was given to the engraver to cut the written letters into the metal'.

As to the language of the inscriptions, the earliest ones so far discovered are written in Prākṛit. Later on, Sanskrit dominates the field, and still later provincial dialects also have their share. Some Sanskrit inscriptions are composed entirely in verse, some in prose and verse mixed, and others only in prose. The style ranges from the very simple to the highly ornate. In fact, certain inscriptions possess real poetic merit and can easily rank among the best of literary productions. Many inscriptions contain peculiar terms and expressions that are linguistically as interesting as they are valuable for an understanding of the administrative systems that prevailed in different parts of India in ancient days.

Ancient inscriptions would have remained a sealed book to us but for the tremendous efforts on the part of the pioneers in the field. Special credit is due to James Prinsep, p. 1), who did marvellous work in deciphering the edicts of Aśoka and thereby supplying the key to the forgotten Brāhmī, the earliest historical script of India. This in due course stimulated a new line of research, namely, the study of Indian palaeography, tracing the origin and development of various Indian scripts. A large assortment of inscriptions, which in the meantime had become available, supplied the requisite data, with the help of which the evolution of each individual letter was minutely studied. The results are embodied in the two standard works on the subject: *Indische Palaeographie* (in

German, Strassburg, 1896) by G. Bühler, and *Bhāratīya Prāchīna Lipimālā* (in Hindī, Oodeypore, 1894) by G. H. Ojha. Since the publication of these works, thousands of new inscriptions have been discovered, which have been or are being dealt with by the Epigraphical Branch of the Department of Archaeology, which is responsible for a large number of epigraphical publications, and by scholars, both Indian and foreign. In the light of this additional material, those works can now be revised and vastly improved upon. The researches in this line have proved that the modern scripts in India, such as Devanāgarī, Gujarātī, Bengali, Oriya, Telugu, Tamil, Kannaḍa, Malayālam, etc., as well as those of Tibet, Burma, Indo-China, Indonesia, Ceylon, etc., have all sprung from that Brāhmī character typified by the edicts of Aśoka. Drāviḍī, an offshoot of Brāhmī, which was sometimes employed both for Prākṛit and Tamil inscriptions in South India, appears to have separated from the main stock of Brāhmī long before the time of Aśoka. It seems to have had an independent and slow development as can be seen from the fact that it continued to preserve many archaic forms of the parent script long after the latter had evolved more developed forms. The intermediary stages in the development of Brāhmī, in different times and different climes, have been demonstrated through the wide range of inscriptions at our disposal. It may also be observed that the two north-western versions of Aśoka's rock-edicts employ Kharoshthī characters of Semitic origin. Unlike Brāhmī and its derivations, Kharoshthī was written from right to left. Its use was restricted to the northern regions including Chinese Turkistan. It altogether disappeared from India by fifth century, without leaving a descendant behind.

One important feature of epigraphy is the mention of various eras like the Kṛita (Vikrama), Śaka, Gupta, Kalachuri and Gaṅga, which were in use in different parts of India. Some of these are current even at the present day. Sometimes the dates cited in inscriptions give astronomical details, which have enabled scholars to fix the starting points of these eras. Invaluable service has been rendered to the cause of Indian epigraphy and chronology by L. D. Swamikannu Pillai whose *Indian Ephemeris* (7 vols., Madras, 1922) is a monumental work, with the help of which the equivalents in the Christian era of any date cited in the inscriptions may be calculated with great ease.

Anything like a review of the contents being beyond the pale of this chapter, the following barest outline may convey some idea of the diverse nature of our epigraphical wealth. The place of honour naturally goes to the world-famous seals of Harappā and Mohenjo-daro (above, p. 32). The short inscriptions of these on

unique relics still remain an enigma in spite of persistent attempts at unravelling their mystery. The most comprehensive analysis of them is perhaps that by G. R. Hunter (*Script of Harappā and Mohenjo-daro and its connection with other scripts*, London, 1934). He calls the script Proto-Indian and holds it to be the fountain-head of Brāhmī.

Decipherable epigraphy begins with a series of inscriptions, in Brāhmī and Kharoshthī, of the Mauryan emperor Aśoka (c. 273-232 B. C.). His known inscriptions, totalling over a hundred and fifty, are dotted all over the country. They comprise a set of fourteen rock-edicts in seven versions (five Brāhmī and two Kharoshthī) and a set of six pillar-edicts in six versions (all Brāhmī), the rest forming a miscellany (also Brāhmī). They show the emperor's solicitude for the moral well-being of his subjects and the charitable deeds done by him for both man and animal. Politically speaking, standing as they do on the frontiers of his dominions, they indicate the vast extent and the proud position of the Indian empire under Aśoka, maintaining friendly relations with the Hellenic states of those days. The language of Aśoka's inscriptions is Prākṛit, the different versions exhibiting a measure of local influence. The most outstanding of his minor inscriptions is the pillar inscription at Rummindei in the Nepal *terai* which settles the exact location of the Buddha's birth-place, as the inscription expressly states that 'here the blessed one was born'; it is obvious that the place-name Rummindei is derived from of Lumbinīdāva of the Buddhist scriptures. The Māskī (Hyderabad State) edict of Aśoka is important inasmuch as it couples the name Aśoka with the king's title Devānāmpīya, thus corroborating the conjectural view held till the discovery of this inscription that the author of the series of edicts issued under the name of Devānāmpīya was no other than Aśoka.

According to the Purāṇas, the Mauryas were succeeded by the Śuṅgas of whom Pushyamitra is stated to have destroyed the last of the Mauryas. At Ayodhyā (United Provinces) has been discovered the only inscription mentioning this famous Śuṅga king who is therein styled *Senāpati* (chief of the army). The services rendered by epigraphy to the elucidation of the history of the various dynasties like the Āndhras, which, according to the Purāṇas, ruled in India after the Mauryas, are well-known. The Indo-Greek king Menander of the second century B. C., who was a follower of the Buddhist faith, was known to historians from the Buddhist work called *Mibindapañho* and a few coins. Epigraphy, too, has furnished evidence of his rule in the north-west. A stone casket discovered at Bajaur (North-West Frontier Province) refers to the establishment or consecration of a relic of the Buddha in the reign of Mahārāja

Minadra, i.e., Menander. This inscription, in Prākṛit, is written in Kharoshthī which was the script of the locality.

In the South, the Ikhākus (Ikshvākus) who ruled the Āndhra country in the third century have left a large number of inscriptions in the Krishnā valley. Apparently they succeeded the Sātavāhanas in this part of the country. Three generations of kings of this family are known, viz., Vāsīthiputa Siri Chāntamūla, Mādharīputa Siri Virapurisadata and Vāsīthiputa Siri Ehuṇula Chāntamūla. They seem to have been very powerful and had matrimonial alliances with the ruler of Vanavāsi and probably also with the Western Kshatrapas of Ujjain. An interesting fact revealed by their inscriptions is the catholicity of these rulers in matters of religion. While the kings are described as the performers of Vedic sacrifices, their queens were ardent Buddhists. Prominent among the successors of the Ikhākus were the Pallavas and the Śālaṅkāyanas of whom the early rulers used Prākṛit for writing their official documents. This fact is significant as the language of the inscriptions of the later members of these families who came about the fourth century changes into pure Sanskrit, though in the transition period a kind of mixed dialect is noticeable. This phenomenon occurs in other parts of India also where the replacement of Prākṛit by Sanskrit as the language of official documents starts earlier; for example, the records of the Kushans, which were entirely in Prākṛit upto about 250, gradually change over to a mixture of Prākṛit and Sanskrit. The same feature is noticeable in the inscriptions of the early rulers of Kalinga (Orissa), in the cave-inscriptions of the Kshatrapas of western India and in Vākāṭaka records of central India. Though this is generally the rule in all parts of India, there are a few exceptions. At Nagari and Ghosundi in Udaipur State are found inscriptions of about 150 B. C. which are entirely in Sanskrit. Plate LXIV illustrates two sides of a typical Śālaṅkāyana record engraved on copper-plates. The inscription is composed in Prākṛit except for two imprecatory verses at the end which are in Sanskrit. It is dated in the fourteenth year of the reign of Mahārāja Nandivarman and registers a pious donation for ensuring longevity and prosperity not only for himself but also for his grandson Skandavarman who was then a mere child, *bālaka-mahārāja*.

In recent years a number of inscriptions of some dynasties like the Maghas, the Nalas, the kings of Mekalā and the Śūravamśī kings, which were known only from the Purāṇas, have come to light and they add much to our knowledge of the history of the period in which they held sway. Of the families noted above, the inscriptions of the Maghas (third-fourth century) have been found at

Bandogarh in Rewa State and Kosam (near Allahabad) and other places. The value of these inscriptions lies in the fact that practically all of them are dated in a particular era, which makes it possible to draw up a succession list of these rulers whose number is about seven. Among them, Mahārāja Vaiśravaṇa seems to have been prominent as he bore the titles *Rājan* and *Mahārāja*. While the language of the records of this family is mostly Sanskrit it is noteworthy that their diction exhibits the persistence of several Prākṛit expressions. It may, however, be noted that a class of inscriptions of this period engraved on *yūpa*-pillars commemorating the performance of Vedic sacrifices is written entirely in Sanskrit. A recent addition to this class is the Nāndsā *yūpa* inscriptions which record that Nandisoma, son of Jayasoma, performed the *ekashashthi-rātra* sacrifice. With the renaissance of classical Sanskrit in the Gupta age Prākṛit disappears altogether as the language of official documents. From this period onwards we find that Sanskrit was exclusively used in inscriptions, both royal and private. Many of them are written in excellent poetry and bear testimony to the mastery of the language possessed by the authors, some of whose names like Harishena (Allahabad inscription of Samudragupta) and Ravikīrti (Aihole inscription of Pulakēśin II) are disclosed by inscriptions.

The wealth of epigraphical material pertaining to the Gupta period is so abundant that it is hardly possible to estimate its importance in this small compass. Nevertheless a few recent finds may be reviewed here. An inscription of the Gupta monarch Skandagupta at Supiā (Rewa State) refers to the family as Ghatotkacha-vaṁśa, a rare appellation. An inscribed seal of the Gupta emperor Vishnugupta carries the genealogy of the Gupta sovereigns a generation further than was hitherto known. In Assam, a record of Bhūti-varman of about the sixth century is the earliest Sanskrit inscription of that area so far discovered. The kings of Mekalā, unknown from any source other than the Purāṇas, are brought to light by a set of copper-plates of the fifth century found at Bamhanī in Rewa State. The lineage of this family for four generations from Jayabala to Bharatabala is given in it. Welcome light on the little-known history of the Nala dynasty of the Central Provinces is thrown by the Kesaribēḍa plates of King Arthapati Bhaṭṭāraka. In the south, the Śāsanakoṭa plates of Mādhava I of the Western Gaṅga family of Talakāḍ (Mysore State) are the earliest genuine charter not only of the king but also of the Western Gaṅga dynasty. The Bādāmi (District Bījāpur) inscription of Chālukya Vallabheśvara (Pulakēśin I), which is dated Śaka 465 (A. D. 543), furnishes the earliest authentic instance of the use of the Śaka era in inscriptions.

A unique feature of the Sanskrit records of the eastern branch of the Chālukya family is the minute care with which the duration of the reign of each successive sovereign is recorded. It is not possible to over-estimate the utility of this laudable practice to the cause of chronology, the credit for which must go to its initiator, the Veṅgī ruler Guṇaga Vijayāditya III of the ninth century.

Coming to later times a copper-plate inscription of the Chola king Vīra-Rājendradeva (early eleventh century), which may be regarded as a specimen of historical charters, traces the genealogy of the family from the Sun down to the king and describes at length the exploits of the various rulers. The Koni inscription of Kalachuri Prithvīdeva II of 1147-8 recounts the extensive conquests of several members of the family of the Kalachuris of Ratanpur (Central Provinces). An interesting piece of historical information is afforded by a copper-plate inscription of Prolaya Nāyaka of the fourteenth century from which we learn that the Kākatīya ruler Pratāparudra, while being taken prisoner to Delhi by the Muslims, committed suicide by drowning himself in the river Narmadā, preferring death to ignominy. Besides furnishing valuable information on political history Indian inscriptions, Prākṛit as well as Sanskrit, throw a flood of light on the religious, social and economic life of the country.

Although literary evidence is profuse on the religious persuasions and rules of worship in India, inscriptions furnish evidence about the actual practice of particular forms of religion and modes of worship. The Sanskrit inscriptions at Nagari and Ghosundi noticed above (p. 187) testify to the prevalence, about 150 B. C., of the worship of Saṁkarshana and Vāsudeva, i.e., the two brothers Balārāma and Kṛishṇa. That a few other members of the Vṛishṇi family were similarly deified and worshipped is attested to by an inscription (first century B. C.) at Morā near Mathurā which records the installation of the images of, and the erection of a temple to, the 'five divine heroes of the Vṛishṇis'.

The sublimity and vitality of the religions of India had an intense spiritual appeal even to foreigners who professed diverse faiths. Reference has already been made (p. 186) to an inscription of the time of the Indo-Greek king Menander who is a renowned character in the *Milindapañho*, a Pāli treatise on Buddhist philosophy. Another Greek attracted to an Indian religion (Vaishnavism) was Heliodorus who set up a *garuda*-pillar at Besnagar (Gwalior) and recorded the fact on it. The inscriptions from Nāgārjunikondā (above, pp. 72 and 81) are only a few among those scattered all over India which give an idea of the rôle played by Buddhist establishments in this country in drawing scholars and devotees of Buddhism from distant countries. At the request of a king of

Suvarṇadvīpa (Sumatra), King Devapāla of Bengal (ninth century), had a Buddhist monastery constructed at Nālandā (Bihar), the famous seat of learning (above, p. 62). That the Śailendra king Māravijayottuṅgavarman of Śrīvijaya (Sumatra and Java) built a Buddhist *vihāra* at Nāgapattinam (Madras Province) is recorded in the Leiden plates of Chola Rājārāja I (eleventh century). It is interesting to note that a Sanskrit verse from the Vaiṣṇava hymn *Mukundamālā* of King Kuḷāśekhara is engraved in characters of the thirteenth century in a Viṣṇu temple at Pagan in Burma. Epigraphy is helpful also in studying other aspects of religion; e.g., the age of Lakulīśa, the founder of the Pāśupata sect of Śaivism, can be determined with the aid of the Mathurā pillar inscription of the Gupta monarch, Chandragupta II, which mentions Uditāchārya, tenth in descent from Kuśika, who was a pupil of Lakulīśa, as having raised two memorial structures to his teachers in Gupta year 61 (380-1).

We may now turn to the glimpses that we get of the economic social, administrative and other matters of general interest from inscriptions. The solicitude of the state for the well-being of the subjects, particularly in times of distress, is vouched for by a Mauryan inscription at Mahāsthān (District Bogra, East Bengal) which refers to the famine-relief measures such as distribution of grain from state-granaries and advance of loans to the people. Provision made for the requisites of the sick, like beds, medicines, etc., is recorded in the Nālandā inscription of Devapāla, which is only one of the numerous documents attesting to this kind of philanthropy. The aptitude of the people of the coastal tracts of India for navigation on the high seas is also attested by inscriptions. An early Prākṛit inscription at Ghantāsālā (District Krishnā) mentions a *mahānāvika* (master-mariner), Sivaka.

It is well-known that the designations of innumerable officials and administrative bodies that find mention in inscriptions from the earliest times testify to the practical application of the theories of administration found in ancient texts on Indian polity like the *Arthaśāstra* and *Śukranīti*. One of the recent additions to this class of inscriptions is the Banaras plates of Śūravamśī king Harirāja (fifth century) which were issued under the authority of a council of administration (*mahāmātragana*) consisting of several ministers whose names are given in the charter. Only a formal consent was accorded for the donation recorded in the grant by Harirāja and his queen Anantamahādevī. It would not be inappropriate here to mention a few women known from inscriptions to have been rulers of extensive kingdoms. Queen Diddā of Kashmir is eulogized in an inscription at Śrīnagar (Kashmir) by the masculine epithet of

rājān. The Kākatīya queen Rudrāmbā of the Āndhra country went a step further in issuing records under the name of Rudradeva Mahārāja.

Some of the interesting social practices that existed in ancient India are revealed by inscriptions. Recently a pillar bearing a Brāhmī inscription (third-fourth century) written in Prākṛit was discovered in District Cuddappah. It states that the pillar, described as a sculptured memorial-pillar, was set up in memory of Śivadāsa who died in a cattle-raid (*gogahana*). Similar memorial pillars also record the death of women who died by committing *satī* or otherwise. An inscribed stele referable to about the sixth century found a few years ago at Sāngsi, Kolhāpur State (Bombay Province), contains a Sanskrit verse recording its erection by the king in honour of his dead queen. The stele bears the representation of the woman lying on the funeral pyre. From the drama called *Pratimā-nāṭaka* of Bhāsa we learn that the custom of setting up life-like images of ancestors and raising temples to them was in vogue in ancient India. The Mathurā inscription of Chandra-gupta II mentioned above (p. 190) refers to such a temple dedicated to the spiritual ancestors of Uditāchārya.

For the ancient geography of India, 'we are really dependant primarily and almost entirely on the epigraphic records'. A few outstanding examples are the following. The identification of the birth-place of Buddha with Rummindei we owe to an Aśokan inscription already referred to (p. 186). A Prākṛit inscription of King Kumāravaradatta (first century) at Gunji (Chhattisgarh, Central Provinces) records donations of *gosahasa* at the sacred place Rishabhātīrtha. The *tīrtha* finds mention in the *Mahābhārata* as having been situated in Kosala. The recently-discovered Prākṛit inscriptions at Ghantāsālā (District Krishnā) refer to that place as Kaṇṭakasōla. This place is evidently the 'emporium Kantakossyla which Ptolemy mentions as situated immediately after the mouths of the Maisōlos, i.e., the Krishnā river'.

The value of inscriptions for dating sculptures and structural monuments is inestimable. An inscription of the reign of Chandra-gupta II in a cave at Udaigiri (Gwalior State) fixes the time of its excavation which, according to the record, was effected by Vīrasēna, a minister of this king. Likewise, we know of sculptures which bear dated inscriptions. The Buddha image at Mankuār (District Allahabad) was set up by the *bhikṣhu* Buddhāmītra in the year 129 (A. D. 448-9) in the reign of King Kumārāgupta. The Vaishnava cave at Bādāmi (District Bījāpur) with its admirable sculptures is another instance in point; it is stated to have been excavated by

the Chālukya sovereign Maṅgaleśvara in Śaka 500 (A. D. 578). The Pallava king Mahendra I claims to be the inventor of rock-cut cave-temples further south. His inscription in a cave-temple at Mandagapattu (District South Arcot) states pointedly that he caused to be erected 'this brick-less, timber-less, metal-less and mortar-less temple which is a mansion for (the gods) Brahmā, Īśvara and Vishnu'.

B. CH. CHHABRA

N. LAKSHMINARAYAN RAO

2. Muslim inscriptions

It was the practice of the Muslim rulers and noblemen of India to ornament their mosques, tombs, residential buildings, etc., with inscriptions, both historical and religious, executed in exquisite scripts. Although Sind was conquered by the Arab general Muḥammad bin Qāsim, early in the second decade of the eighth century and was subsequently invaded by the Karmatians and the Ghaznavids who overran India as far as Lahore, no inscription of that period is known to exist, and the earliest Muslim epigraph of Indian origin that has been discovered so far is dated A. H. 587¹ (A. D. 1191). It is in Persian prose engraved in *Naskh* characters in relief on the east gate of the Qūwwatu'l-Islām mosque at Delhi (p. 110).

Muslim inscriptions in India are in Arabic, Persian and Urdu, and since Arabic was the religious and literary language in the Muslim world, it is not surprising that the earliest mosques and tombs in India were decorated with historical epigraphs in Arabic until the close of the thirteenth century, the only exceptions being those in the Qūwwatu'l-Islām mosque mentioned above and the tomb of Shaikh Aḥmad Khāndān at Budāun (U. P.) which bear Persian inscriptions in prose dated A. H. 587 (A. D. 1191) and A. H. 683 (A. D. 1284) respectively, though even these monuments are also rich in religious texts in Arabic. Persian came to be regularly adopted for epigraphical records at the close of the thirteenth century. A critical study of the epigraphs of the Khaljī (1290-1320), Tughluq (1320-1413), Sayyid (1414-51) and Lodī (1451-1526) periods reveals how steadily Persian was gaining ground against Arabic in the domain of epigraphy. The same decline of Arabic is also noticeable in the independent Muslim principalities that had sprung up in certain provinces towards the close of the fourteenth century, but Arabic retained its hold in Bengal for a considerable

¹ The Hijri era was started in A. D. 622.

time. The Mughul period is marked not only for the Iranian influence on Indian customs, language, art and architecture but for the evolution of a new language called Urdu, by the contact of Persian and the then prevalent languages of India. This newly-born language steadily developed to such an extent that before long in practical life as in epigraphy it threw into the background the Persian language which, like Arabic, came to be regarded as only a literary language of the period. The first Urdu inscription so far brought to light is on the west wall inside the shrine of Ḥaẓrat Nizāmu'd-Dīn Auliya at Delhi, dated A. H. 1169 (A. D. 1755), but the majority of Urdu inscriptions in prose and verse is of the post-Mutiny period.

The diversity of scripts and the ingenuity displayed in their ornamentation owe much to the Islamic injunction forbidding the representation of living beings, and it was mainly on this account that the Muslim artists confined the outlet of their artistry chiefly to the art of calligraphy which reached its zenith under the patronage of Muslim rulers who even got their children trained in it by experts. Among the most important scripts of inscriptions and manuscripts mention may be made of various varieties of *Kūfī*, *Naskh*, *Bihār*, *Thulth*, *Nasta'liq* and *Shikasta*. Early epigraphs, whether Arabic or Persian, are found written in *Naskh* or *Kūfī* letters. The *Kūfī* style, which is supposed to have been derived by Khalīfa 'Alī from the *Ma'qalī*¹, was of a decorative and artificial nature. It was mainly reserved for religious inscriptions, although there are a few isolated instances of it being used for historical purposes as well. The *Kūfī* style was of two kinds, viz., *Mua'rrā* (or plain) and *Gulzār* (or ornamental, also termed *Coufique fleur*). Specimens of the former may be seen in the Prophet's letters and the *Qurāns* written in the first to third centuries A. H. and also sparingly up to the sixth century A. H.² or on ancient coins, while Qurānic quotations in ornamental *Kūfī* are to be seen in Delhi on the Qūwwatu'l-Islām mosque erected in 1191 and on the tombs of Sultān Ghārī (1231-32), Sultān Iltutmish (1235) and Khān-i-Khānān (1626-27). Abu'l-Fazl, of the court of Akbar (1556-1605), thinks that *Ma'qalī* and *Kūfī* were the most ancient styles to which all subsequent scripts—*Naskh*, *Thulth*, *Bihār*, *Tauqī*, *Riqā*³, *Muḥaqqaq*,⁴ *Raiḥān*, *Nasta'liq*, *Ghubār*, *Baburī*, etc.—owed their origin.³ But there are specimens of *Naskh* style as old as the first century A. H.,⁴ which leave no room to doubt that *Kūfī*

¹ *Āin-i-Akbarī* (tr. H. Blochmann), I (Calcutta, 1873), p. 99.

² B. Moritz, *Arabic Palaeography* (Cairo, 1905), pls. 1 to 46 etc.

³ *Āin-i-Akbarī*, I (Calcutta, 1873), pp. 99-100.

⁴ Moritz, *op. cit.*, pls. 101-106.

and *Naskh* flourished side by side, independent of each other. However, *Naskh*, being more suited for ordinary purposes on account of its simple style, completely replaced the fantastic *Kūfic* by the seventh century A. H. Epigraphical explorations have brought to light several conventional styles of *Naskh* varying according to the times and places and the distinctive ornamental *Naskh* scripts of Bengal and other provinces amply manifest the individual skill of the local calligraphists of various periods. The *Bihār* style, which is regarded as a transition-style between *Kūfic* and *Naskh*, was an ingenious product of Indian calligraphy, as no specimen of it is traceable outside India. *Naskh* reached its perfection in Persia from where it came to India and numerous varieties of it, including *Thulth*, which was prized most in the Mughul period, are seen gracing the ancient monuments. In Persia, another script called *Nasta'liq* evolved from *Naskh* and *Ta'liq* in the fourteenth century A. D., but it does not appear to have been introduced in India before the sixteenth century as the oldest *Nasta'liq* inscription so far discovered in India dates as far back as A. H. 928 (A. D. 1521).¹ It became so popular under the patronage of the Mughul emperors that it soon replaced *Naskh* which met with the fate of *Kūfic* in having been reserved for religious purposes only. The other scripts mentioned above were not used for records in stone but are found on movable antiquities of equal palaeographical and archaeological interest such as seals, signets, amulets, arms, domestic articles, manuscripts, ancient documents, *waslīs* (specimens of calligraphy, pl. LXV), etc., with which we are not directly concerned here.

Muslim epigraphy has contributed enormously to the reconstruction of the political, social and religious history of India. It comprises inscriptions, both historical and non-historical, the latter including Qurānic texts, traditions of the Prophet, moral teachings and passages of ethical nature from didactic authors. Whereas the importance of the former lies in making a sustained history of our country possible by supplying facts unrecorded in literature correcting anachronisms and incongruities and throwing light on events and personages not otherwise known,² the value of the latter must not be underrated. Under the Slave, Khaljī and Lodī kings and more particularly in the reigns of Iltutmish (1211-1236), 'Alāu'd-Din Khaljī (1296-1315) and Sikandar Lodī (1489-1517), non-historical epigraphs formed the chief decoration of buildings, and

¹ *Epigraphia Indo-Moslemica*, 1921-22, pp. 29-30 and pl. X(b).

² For specific instances see 'Ten Years of Indian Epigraphy', to be published in *Ancient India*, no. 5; *Revealing India's Past* (London, 1939), pp. 208-10

instances are to be seen in Delhi at the tomb of Iltutmish (1235), 'Ālāi Gate (1310-11) and Barā Gumbad mosque (1494) bearing about sixty, seventy and one hundred and thirty inscriptions respectively. A study of these religious epigraphs reveals that only such texts were inscribed on the monuments as were in consonance with their character. For instance, the tombs of murdered people (styled 'martyrs') were graced with certain specific Qurānic verses not traceable elsewhere; mosques bore such texts as were expressive of the divine bliss promised to those who erected a mosque or provided it with a lamp or a prayer-carpet; and Shiite and Sunni creeds and invocations on monuments spoke of the faiths of their founders.¹

Realizing the importance of the rôle which Muslim epigraphy had to play in completing the history of our country, the Archaeological Survey of India started a biennial journal, entitled *Epigraphia Indo-Moslemica*. In spite of war-time conditions and technical hindrances, about 540 inscriptions have been published so far. Of these, about 250 are from the Hyderabad State alone, while the rest represent the rulers of India, both central and provincial, viz., the Sultāns of Delhi, Bengal, Gujarat, Mālwa, etc. and the Mughul emperors of India. Much, however, still remains to be done to make our epigraphical collection fully representative. A thorough and epigraphical survey of every province and of all epigraphical galleries in our country will have to be undertaken and it is hoped that much new material will be brought to light.

MOHD. ASHRAF HUSAIN

¹ Mohd. Ashraf Husain, *A Record of all the Qurānic and Non-historical Epigraphs on the Protected Monuments in the Delhi Province*, Mem. Arch. Surv. Ind., no. 47 (1936), pp. 1-2.

CHAPTER IX

GREATER INDIA

INDIA'S position on the cultural map of Asia is like the hub of a wheel with spokes radiating towards Iran and Afghanistan on the west; Central Asia, Tibet and China on the north; Burma, Siam, Indo-China and Indonesia on the east and Ceylon on the south. The history and prehistory of India is closely linked with that of these peripheral countries; from them India has constantly derived stimulus and reinforcement; to them she has given ideas and peoples which are an integral part of their inheritance. Formidable barriers of mountain and ocean have failed to obstruct a close and significant cultural and commercial interchange. The great Himalayan massif and its extensions, which on the map make India look geographically exclusive, are in fact penetrated at a large number of points; there are routes from the Brahmaputra in Assam to China, through Sikkim to Tibet, and from Kashmir to Turkistan; the last routes, especially arduous as they are, were followed by a number of Chinese pilgrims visiting India for religious homage or study. Anciently, the importance of these routes lay not so much in the formation of Indian civilization as in the reverse direction, as channels for the diffusion of Buddhism and Buddhist art from India to Central Asia and to China. The approaches on the north-western frontier, which loom large in Indian history, may be grouped into two series, northern and southern. The northern group links North Iran and the Oxus region with Kabul and the central reaches of the Indus; the southern group links South Iran alternatively with Kandahār, North Baluchistan and the more southerly reaches of the Indus, or with Makrān and the Indus delta. These land-approaches were supplemented by trans-oceanic routes emanating from important sea-ports on India's extensive coast-line and connecting her with the Graeco-Roman and the Muslim worlds towards the west and the Indian Archipelago and China towards the east. This communication with the outside world was reinforced in India itself by well-developed arterial routes traversing the great plains and penetrating the river-valleys. The great Northern Route (*uttrā-patha*) extended from Tāmralipti on the eastern sea-coast up to the Oxus region, linking famous trade-centres and capitals such as Champā, Pāṭaliputra, Kāśī, Kauśāmbī, Mathurā, Sākala (Sialkot), Takshaśilā (Taxila), Purushapura (Peshawar), Nagara-hāra (Jalālābād), Kapiśā (Begrām) and Bālhika (Balkh), where it picked up the Silk-routes from Central Asia and China to the west.

Another important route traversed the Central Indian plateau linking by its two arms Kausāmbī and Mathurā with Ujjayinī and the sea-port of Bharukachha or Barygaza on the west coast. On the Indian side a large number of trading sea-ports and emporia specially on the eastern sea-coast in Orissa and Madras served as clearing-house for the cargo brought in vessels from the Roman world in the early centuries of the Christian era and from the Malayan Peninsula, Indonesia and China in the medieval period. The find of Roman coins and pottery and Chinese celadon ware in various parts of India are archaeological proof of these relationships (above, p. 73).

India and Iraq

The urban civilization flourishing in the Indus valley in the third millennium B.C. in the cities of Mohenjo-daro in Sind and Harappā in the Punjab (above, p. 32) had contacts with the contemporary cities of Iraq. At Ur and its sister-cities objects, made by craftsmen of the Indus valley, have been found from time to time; and on the other hand typically foreign objects found on the Harappā sites bear witness to intercourse between the Indus valley and Mesopotamia and perhaps Asia minor, e.g. spiral-headed hair-pins, cylindrical seals with horned deities, etched carnelian beads, fragmentary vessels of steatite with mat-pattern, spiral needles, stone jewel-boxes with compartments inside, heart-shaped pieces of bone-inlay and knobbed pottery.

India and Iran

Both in the prehistoric and the historical periods Iran had had the closest relations with India. The plains of the Euphrates and the Indus, flanking on two sides the Iranian plateau, both seem to have received a stimulus from Iran in the making of their earliest civilizations, although the exact nature of that stimulus is not yet fully revealed. A powerful branch of the Aryans, from whatever original home they came, settled in Iran about the beginning of the second millennium B.C. Another important branch settled in India, although their earliest history, so far as monuments of material culture are concerned, remains still unexplored in both countries. India and Iran testify to these early cultural ties in the matter of language, for the modern Persian language is as much derived from the ancient speech of the Aryans through the intermediary stages of the old Iranian and the Pehlvi as are certain of the modern Indian languages descended from the parent Vedic speech. The ancient Avestic literature of the Parsis together with the voluminous commentaries and translations into Pehlvi during the Sassanian times (third-seventh centuries) are important for the light they

throw on the early religious and linguistic history of India and Iran. The religion of Zoroaster found a haven on the soil of India when the first colony of Parsi immigrants was established at Sanjan in District Thāna, Bombay, in 735. This was preceded by a long tradition of Indo-Iranian relationship which reached its zenith during Gupta-Sassanian times. The whole currency of India during the seventh-twelfth centuries betrays strong Sassanian influence both in weight and design. In the seventh century an embassy was exchanged between Khusrū II of Persia and an Indian king, presumably the Chālukyan king Pulakeśin of the Deccan (c. 625), of which mention is made by the Arab historian Tabarī, and a court-scene in Cave I at Ajantā appears to represent the reception of a Persian embassy at the court of an Indian king. The paintings in Cave I are imbued with strong Sassanian influence. During the period of the Caliphs Indian literature, specially on medicine and astronomy, was in great demand and translated into Arabic. India's great story-book, the *Pañchatantra*, was accorded a warm reception at the court of the Caliphs and became popular throughout the Muslim world in its Arabic and Persian translations, which subsequently became the medium of its introduction into the languages of Europe. During the Muslim period both India and Iran extensively exchanged with each other their art, religion, language and culture.

India and Afghanistan

Afghanistan lies athwart the main north-western gateways of India. It has from the earliest times shared freely the cultural movements emanating to and from Indian soil. Its ancient geographical names are surviving monuments of ancient Aryan settlements; for example, Sarsvatī is preserved in the modern name Arghandab through Avestic *Harahvaiti*, later *Arkhvati*; Sarayū in Avestic *Harayū*, modern Hari Ruda; Bālhika in Balkh; Gandhāra (although the old name of the region from Kabul to Rawalpindi) in Kandahār; Suvāstu in Swāt; and the river-names Kubhā in Kabul and Gomati in Gomal. The R̥igvedic name Pakthana is the origin of Pakhtoon and Paṭhān, and Āśvakāyana (mentioned by the Greeks as Assakenoi) of Afghan. Similarly Hastināyana (mentioned by the grammarian Pāṇini) corresponds to Greek Astake(ne)noi with capital at Pushkalāvati (modern Chārsada) and Āśvāyana to Aspasioi. The Afridis and the Mohmands, the famous Pakhtoon tribes, were known in the *Mahābhārata* and to Pāṇini as Āprita and Madhumanta. In the river-valleys of Afghanistan were settled numerous Aryan tribes enjoying their independent existence and most of them even under changed religious conditions have preserved their linguistic peculiarities. The Pashto language is a dialect of Sanskrit both in its vocabulary and in grammatical structure.

In the early historic period after Alexander's invasion, Afghanistan formed part of the empire of Chandragupta Maurya and his grandson Aśoka. During the Indo-Greek and the Kushan periods Afghanistan's polity was linked with that of India, and a flourishing school of art known as Graeco-Buddhist or Gandhāra art flourished in the north-west of India, produced by the combination of foreign and native elements with the main features of Indian art (above, p. 140). This art survives in numerous monumental stūpas and sculptures in stone (first-third century) and in figures of clay and stucco (third-fifth century). The latter represent some of the finest products of Buddhist art. At Hadda, near Jalālābād, and as far away as Kundaz on the Oxus plain, stucco figures of Buddhas, Bodhisattvas and their worshippers are found in form and style identical with those from Taxila in the northern Punjab. At Kapiśā, represented by modern Begrām, 50 miles north of Kabul, has been discovered the greatest known collection of Indian ivory-carvings, which are primarily inspired by the best traditions of the Mathurā school and which at once put the work of the ivory-carvers of the Mathurā region into the front rank of ancient craftsmanship. At Bāmiyān in the Kabul valley, fresco-paintings of the Gupta period executed in the Ajantā technique have been discovered; colossal statues of the Buddha, one as much as 159 feet high, carved in solid rock greeted devout pilgrims from Central Asia and China at the entrance to the Holy Land of Buddhism. On the disruption of the Kushan empire local dynasties continued to rule for a long time in the north-west and the Shāhī kings of Kabul kept up the cultural and religious link with the mother-country until the end of the tenth century. Thereafter Indo-Afghan relationship assumed a new aspect; but though under a succession of Muslim dynasties Afghanistan largely lost its political entity, many old cultural elements have been preserved in the folklore and folk-songs of the country and well deserve a more extensive research than they have yet received.

India and Central Asia

Chinese Turkistan or the 'innermost heart of Asia,' as it has been called, was the meeting-ground of different races, arts and languages—Chinese from the east, Graeco-Bactrian and Iranian from the west, and Indian from the south. Cultural influences travelled along two channels, a northern route passing through Kucha, Kārā Shahr (Agnideśa) and Turfān, and a southern route passing through Yārkand, Khotān, Niyā, Miran, etc., the two routes meeting at Tun Huang on the western borders of China. Hiuen Tsang, the Chinese pilgrim of the seventh century, had selected the northern route for coming to India and the southern route for the return-journey, the cities along the routes serving as stages in

the pilgrim's progress both from and to China. In the once-flourishing monasteries and houses of the cities have been found an exceptional wealth of archaeological material consisting of specimens of Buddhist art and manuscripts in Brāhmī and other scripts, and in several languages such as Sanskrit, Chinese, Syriac Soghdian, Turkish, Tokharian and Khotanese. India played a dominant rôle in this remarkable cultural diffusion, mainly through the influence of Buddhism. Kharoshthī wooden documents found at Niyā show that Prākṛit was the official language over the wide area from Khotan to the western extremity of the Lob-nor region in south-eastern Turkistan up to the beginning of the fourth century. A fragmentary manuscript of the dramas of Aśvaghoṣa (c. second century) and the Bower manuscripts comprising several Indian medical texts (fourth-fifth century) are important finds from Central Asia which show the extent of Indian influence.

India and China

China is referred to in the *Mahābhārata* as Chīna, the Sanskrit adaptation of Tsin, the name of an ancient dynasty. The Chinese legends speak of the first appearance of Indian Buddhist missionaries in China in 217 B.C., but Buddhism was first introduced to the Chinese court by Kāśyapa Mātāṅga who arrived at the imperial capital in A.D. 65 with a precious cargo of sacred texts and relics at the invitation of the emperor Ming-Ti of the Han dynasty. Soon a stream of Indian scholars and learned Chinese pilgrims began to flow between the two countries in search of sacred texts and knowledge. Boards for translation were appointed in China under the imperial direction and a vast body of Sanskrit literature was translated into Chinese; of this more than sixteen hundred texts, of which the Indian originals are lost, are Tripiṭaka. In 546 Parāmārtha, an Indian Buddhist scholar, at the invitation of the Chinese emperor Wu-Ti, reached Canton with a large collection of manuscripts which he presented to the emperor. He devoted the rest of his life to translating them until his death in 569.

India's intercourse with China reached its peak in the reign of Harsha (606-648) when formal embassies were exchanged. Hiuen Tsang, the most brilliant representative of this Sino-Indian cultural relationship, visited India during the years 629-645, in the time of Harsha, spent several years at Nālandā studying Sanskrit and returned to China with a cargo of religious texts, which he himself translated into Chinese. The inflow of Chinese pilgrims to India increased considerably during the Sung period of China (960-1279), and is referred to incidentally in five records found engraved at Bodh-gayā.

The Indian contribution to Chinese culture was mainly through its religious ideals and its art. A considerable amount of Buddhist statuary in the Tien-Lung Shan caves in Shansi province is derived from the Buddha and Bodhisattva images based on the Indian works of the Mathurā school of the fifth and sixth centuries. The formal treatment and the general modelling of the types so closely resemble those of certain Gupta sculptures that one may be justified in supposing that a direct influence from India had reached the artists. The reliefs in the Nan-Hsing-T'ang cave-temples in Honan representing Buddha figures and the Buddhist paradises reveal South Indian features, similar to the carvings of Nāgārjunikondā and Amarāvati (above, p. 139). One of the greatest religious factors in transforming Chinese life and thought was the emergence of the Dhyāna school of Buddhism, which laid emphasis on *yoga* and spiritual practices and had much in common with the esoteric form of Mahāyāna Buddhism evolving on the Indian soil. Several important hoards of Chinese coins as well as specimens of glazed porcelain ware found in many places in India¹ indicate the continuity of commercial relationship up to about the thirteenth century.

India and Tibet

Tibet, known in early Indian geography through the holy Kailāsa and Mānasarovara, came under the complete influence of Buddhism during the time of Srong-Tsan-Gampo, the most distinguished ruler of Tibet, who founded Lhasa in 639. With the help of Indian scholars, he gave to Tibet a script based on the seventh century script of India. A vast body of Indian literature consisting of religious texts and secular works, translated into the Tibetan language, is preserved in the two collections known as *Tanjur* and *Kanjur*. Tibetan art consists mostly of Buddhist paintings on silk, fresco-paintings on walls and bronze images. The silk paintings or *Thankas* (temple-banners) fall into two groups. The first, connected with the ministry of the great scholar Atīśa, who went to Tibet in the eleventh century, shows scenes from the life of Buddha, is devoid of Tantric elements and appears to be based on Indian traditions taken from Nepal and Bengal. The second group is of later origin showing a much more complex pantheon of Buddha, and Bodhisattvas, Lokapālas, saints and heroes. Tibetan bronze figures, depicting mostly the same subjects as the paintings, belong to the second group from the seventeenth century onwards. In the thirteenth century Kublai Khān, the great Mongolian emperor, adopted the Tibetan script as the official script of his empire. He sent for a scholar from Tibet named Matidhaja, who devised the new script based on the Indian form of writing.

¹ *Ancient India*, no. 2 (1946), pp. 91ff.

India and Nepal

The Nepalese language, script, religion and art have all been deeply influenced by India. Buddha's birth-place, Lumbinī, marked by an Aśokan pillar, lies within the borders of Nepal. Aśoka is credited with the building of stūpas at Pāṭan and the introduction of Buddhism into Nepal. During the middle ages Buddhism and Brāhmanism combined in the form of a Tantric religion, which took hold in Nepal. After the dispersal of the Buddhist centres in Bihar and Bengal in the early twelfth century by the Muslim invaders, Nepal gave shelter to monks who took with them valuable manuscripts and images. A large number of Mahāyāna Sanskrit texts, of which the Indian originals do not now exist, have thus been preserved in Nepal. Nepalese images in gilt copper and brass showing Buddhist Tantric deities as well as images of Hindu gods like Viṣṇu, Śiva and Kṛiṣṇa are well known and are often of fine workmanship. Nepalese painting is represented by *Thankas* on cloth and scrolls on paper of the seventeenth-eighteenth centuries.

India and Ceylon

Ceylon owes to India its Buddhist faith, the Pāli language and much of its artistic inspiration. On the other hand, India's debt to Ceylon is also deep, as the latter has preserved the original Pāli Buddhist canon amplified by commentaries, which had long ago disappeared from the Indian mainland. In Aśoka's scheme of missionary activity Ceylon occupied an important place; the emperor sent his son Mahendra and daughter Saṅghamitrā to the island where they were received by King Devānāmpiya Tissa, who founded in their honour the Mahāvihāra ('the great monastery'), the headquarters of Ceylonese Buddhism. An offshoot of the Bodhi-tree at Bodh-gayā under which Buddha attained his Buddha-hood, was planted in the monastery and survives to the present day under the name of Jaya-Mahābodhi. As a result of this mission Ceylon witnessed a spiritual and intellectual transformation in its insular life. Later also Samudragupta (c. 330-375) refers to his friendly contact with the king of Ceylon. The latter requested permission through an embassy to build a monastery at Bodh-gayā for the use of Ceylonese pilgrims, and when Hiuen Tsang visited the place in the seventh century, this magnificent establishment contained a thousand monks. Mahānāman, a Ceylonese monk, has left an inscription at Bodh-gayā, dated 588-89, recording the building of a shrine at the place of Buddha's enlightenment. The best fruit of Indo-Ceylonese cultural relationship is symbolized in Buddha-ghosha who arrived in Ceylon from Bodh-gayā in the reign of King Mahānāman (412-34) and enriched the Pāli canon by writing voluminous commentaries, now famous throughout the Buddhist world.

Anurādhapura, the ancient capital, and Polannaruva (old Pulastipura) are the two great centres of Ceylonese art. At Anurādhapura, the principal monuments include the great stūpa (Mahāthūpa) built about 100 B.C. with a dome 270 feet high; the Jetavanārāma or Eastern Dagaba built in the fourth century in the time of Meghavarna, a contemporary of Samudragupta; and Abhayagiri or Northern Dagaba. These gigantic stūpas were derived from early Indian prototypes with the difference that they are without railings and gateways. A series of Hindu temples built in the Chola style when the Cholas of South India occupied the island (tenth-eleventh century), exists at Polannaruva. Bronze images of Hindu gods and goddesses in South Indian style, evidently made by Indian artists, have also been found. The fresco-paintings in the palace of King Kāśyapa at Sigiriya are in typical Ajantā style.

India and Burma

Burma owes to India her religion, philosophy, canonical literature, sacred language and script. It was known in the *Rāmāyaṇa* as the land of silver-mines. In the international embassy-scheme of Aśoka, Burma received two religious leaders, Soṇa and Uttara, who are credited with introducing Buddhism to that country. By about the first century, Indian colonies had been established at Hastināpura (modern Tagaung in North Burma) Śrīkshetra (Prome), Vishnupura (Pisanu Myo, 'city of Vishnu') near Prome in Central Burma and Sudhammavati (modern Thaton) on the sea-coast in South Burma, which was the capital of the Ramanya country. Both the land-route through Bengal and Assam and the sea-route from the port of Tāmralipti were used in this cultural expansion. In the Gupta period a number of Buddhist stūpas and images as well as Hindu temples with sculptures of Śiva and Vishṇu inspired by Gupta traditions were executed; they are now exposed in the old remains of Prome and Thaton. The latter place, a centre of Hinayāna Buddhism, is said to have been visited in about 450 by Buddhaghosha who brought with him a copy of the Pāli Tripiṭaka as a national gift to Burma.

The golden age of Burmese history coincides with the reign of Aniruddha (Burmese Anawrata, 1040-1077) who made Arimardanapura (modern Pagan) on the Irāvadi his capital and established here a library for housing the Tripiṭaka literature. His romantic relations with India are shown by his having sent a matrimonial mission which came as far as Vaiśālī in Bihar and obtained for their sovereign a beautiful princess named Pañchakalyānī. She became the mother of Kynzitha, the most powerful emperor of Burma (1084-1112), whose coronation in the orthodox Indian style with

Vedic hymns was celebrated at Pagan. During their reigns Pagan became the principal temple-city of Burma and the biggest centre of art in Asia. Of the five thousand pagodas in Pagan, the richest is the Ānanda temple, which was planned by Kynzittha on the model of an Indian temple and executed by Hindu architects. It contains eightyone stone reliefs of the Buddha and fifteen hundred glazed terracotta panels with Jātaka scenes. The temples are mostly of brick with stucco-decoration. The fresco-paintings in these temples are in the style of the Pāla paintings of India. Kynzittha restored the Bodh-gayā temple through a special mission. From the thirteenth century, the cultural links between India and Burma declined owing to foreign invasions, but the people tenaciously preserved their religion, art and culture. In 1859, Emperor Mindon Min built the wonderful palaces of Mandalay and ordered countless Buddhist scriptures to be written and beautifully illustrated for presentation to the monasteries.

India and South-east Asia

India's neighbours towards her south-eastern frontiers include Malaya, Sumatra, Java, Bali, Cambodia and Siam. Strong cultural influences from India transported mainly through maritime routes made this vast reigon almost a cultural province of India. The intercourse between India and the Far East depended on deep-sea voyages undertaken with great daring and adventure from sea-ports on the Bengal and Madras coast-line, of which Tāmralipti, Paloura near Ganjam at the mouth of the Godāvarī and Puhār or Kāverī-paṭṭanam on the mouth of the Kāverī were great centres of trade and commercial enterprise. The history of the Indian contacts goes back to about the beginning of the Christian era, Yavadvīpa (Java) with its seven subsidiary kingdoms having been mentioned in the *Rāmāyaṇa*. A Sanskrit inscription from Vo-Chanh in Annam of about the third century furnishes the earliest archaeological proof of these contacts. By the fourth century Hindu kingdoms had been established in Indo-China using Sanskrit as the official language. The sculpture and architecture of the period, fifth to eighth centuries, are closely related to Indian types and greatly influenced by the Gupta style. The period from the eighth to the thirteenth centuries is marked by an outburst of local national culture which had by that time fully assimilated the literary and artistic traditions from India.

Siam.—The Thais came to occupy the Menam delta in the thirteenth century. Prior to that, Siam under the name of Dvārāvātī, formed part of the ancient empire of Kambuja or Cambodia. The style of Dvārāvātī art found mainly at Navapura (modern Labapuri) is markedly Indian, closely related to Gupta art. Standing and

seated figures of the Buddha both in stone and bronze as well as images of Vishṇu have been found. In the thirteenth century Siam, under its great king Rama Khamhang (1296), became independent of Cambodia under the name of Svargaloka-sukhodaya. His grandson Hridayarāja founded Ayodhyā (Ayuthia) in about 1350, which continued to be the capital until it was superseded by Bangkok in 1767. Siamese sculptures of the eleventh-twelfth centuries are Buddhist and show Khmer influence, through Burma but the finest examples of Siamese art came with the rise of the Sukhodaya kingdom, showing marked Sinhalese inspiration. The Pāli literature has exercised great influence on the growth of Siamese literature.

Cambodia.—Cambodia (Kambuja) and Annam (Champā) were the first to receive colonists from India. Local tradition speaks of an Indian Brahmin Kaundinya as having landed in Funan, i.e., Kambuja, from a merchant-vessel and to have become the ruler of the land after marrying Somā, a local princess. By 400 Kambuja was centrally governed by a Hindu king named Śrutavarman.

The art of Funan falls into two distinct periods, the earlier one, pre-Khmer, of the fifth to seventh centuries, strongly influenced by India; and the later one, classic Khmer of the ninth to twelfth centuries. Inscriptions found here in the Pallava script of South India are in the Sanskrit language and reveal a complete background of Vedic and Purāṇic literature. The style of early temples is like that of the Deogarh temple of North India (above, p. 94), consisting of a square cell with a flat roof. The group of about fifty brick temples with sculptured slabs on the walls, found at Praikuk, Kompong and Thom shows strong Indian features and adds to our knowledge of Gupta art.

With the rise of the classic-Khmer period in the ninth century new flood-gates of cultural activity were thrown open on to the land of Kambuja. For nearly five centuries the cult and mythology remained essentially Indian, comprising almost the entire Brāhmanical and Buddhist pantheon. A great monument of this age is the temple of Angkor Wat (old Yaśodharapura) in central Cambodia built by King Śūryavarman II (c. 1125). It is a beautiful and impressive Brāhmanical temple, in which the gallery-reliefs consisting of dancing nymphs, battle-scenes from the epics, Purāṇic legends and scenes of heaven and hell are more animated than even in the sculptures of Borobudur (below, p. 208). The temple of Angkor Thom built by Yaśovarman (c. 900) enshrines Hindu gods such as Śiva and Vishṇu as well as Buddhist gods of the Mahāyāna cult.

Champā.—Champā, corresponding to modern Annam on the eastern coast of French Indo-China, was the earliest to be colonized

from India at an early date and continued to be a land of mixed Indo-Cham culture for a thousand years (c. third-thirteenth centuries). About the second or third century there flourished in central Champā the Hindu kingdom of Kanthāra, of which the Sanskrit inscription from Vo-Chanh is a valuable record. Some time later it was succeeded by the kingdom of Pāṇḍuraṅga (modern Phanrang) on the sea-coast. In 380 Dharmarāja Śrī Bhadravarman ascended the throne and ruled over an extensive empire which included Amarāvati, Pāṇḍuraṅga and Vijaya. He built a temple of Śiva at Mison which later became a national centre of pilgrimage. His son Gaṅgarāja, as recorded in one of his inscriptions, came to India to spend his last days on the banks of the Ganges in the orthodox Hindu way. His dynasty ended in 757. During this period Champā was virtually a cultural province of India in respect of art, Sanskrit language and Brāhmanical religion. The Sanskrit inscriptions of Champā provide excellent specimens of classical Sanskrit poetry. Śaivism was the predominant religion, Śiva being described in one inscription as the highest god of the country. Dong-Duong is the only Buddhist site in Champā and its sculpture is closely related in style to the Indian school of Amarāvati (above, p. 139).

Indonesia.—The principal Indonesian islands, Java, Sumatra and Bali, furnish profuse evidence, both architectural and literary, of strong cultural influence from India. Possibly the earliest Indian settlement was in western Java dating to the beginning of the Christian era. Sanskrit inscriptions in the Pallava script of the fourth-fifth century refer to the old Hindu capital of Tārumā and its king Pūrṇavarman, but of this phase few traces have been left.

The next phase opens with the eighth century in middle Java with the rule of the mighty Śailendra kings (732-807) and is marked by numerous monuments, of which the earliest Buddhist temple, Chaṇḍī Kalasan, dated 778 and dedicated to the goddess Tārā, contains beautiful decorative sculpture. The Śailendras were the rulers of Śrīvijaya in central Sumatra, a mighty kingdom comprising Java, Sumatra and the Malayan Peninsula. They were zealous Buddhists commanding great political power and entered into contact with kings in India and the neighbouring lands in China. A copper-plate inscription found in the excavations of Nālandā in Bihar shows that a Śailendra king endowed a monastery at Nālandā for the residence of monks (above, p. 63).

The greatest surviving monument of the Buddhist religion, the stūpa of Borobudur, is in Java and was built probably in the latter half of the eighth century. The monument is very elaborate in its construction and ornamentation. The body of the building

consists of a succession of nine terraces, of which the six lower ones are square and the three upper ones circular. The gateways and the paths of circumambulation are adorned with sculptured slabs which are unsurpassed in the East for their profusion and beauty. The number of panels is about fifteen hundred and, if placed side by side, would extend to three miles in length. They show great ability in the rendering of the human figures, animals in lively poses, as well as forest-scenes. The life-story of the Buddha according to the famous Sanskrit text, the *Lalitavistara*, together with a number of Buddhist legends from the *Divyāvadāna*, the *Jātakamālā*, etc., are illustrated on the panels. The sculpture as a whole represents the popular inspiration behind the Mahāyāna phase of Buddhism as evolved during the Gupta period.

An important group of monuments of the Hindu period (ninth century) is found near Prambanam in the east of Jogjakarta consisting of three lofty temples, dedicated to the three great gods of Hinduism—Brahmā, Vishnu and Śiva. The panels of the Śiva temple illustrating the *Rāmāyaṇa* are in the same style as Borobudur but are even more animated. After 919 the centre of art shifted to East Java where the Indonesian genius asserted itself with greater independence, although the subjects continued to be mostly Brāhmanical and sometimes Buddhist. The reliefs of the Jago temple near the town of Mallam illustrate the Kṛishṇa story, a theme unexpected in a Buddhist temple. As a matter of fact the profuse intermixture of Buddhist and Brāhmanical cults took place in Java during the eleventh-twelfth centuries—a phenomenon not unknown in India—and its effects still survive in the culture of Bali. The medieval Indian Sanskrit story-literature refers to frequent sea-voyages by rich merchants and daring sea men, who sailed from Indian ports on commercial missions to Yava-dvīpa (Java), Kaṭaha-dvīpa (Kadaram or Keda in Malaya Peninsula), Malaya-dvīpa and Suvarṇa-dvīpa (Sumatra).

Thus with most of the countries of Greater India lying towards the east and the north, India forged links between the first and the tenth centuries. The great mass of archaeological and literary evidence extending from the ruins of the 'innermost heart of Central Asia' to the islands of the Eastern Archipelago and Indo-China presents an impressive picture of the achievement of ancient India alike in the field of commerce and of culture.

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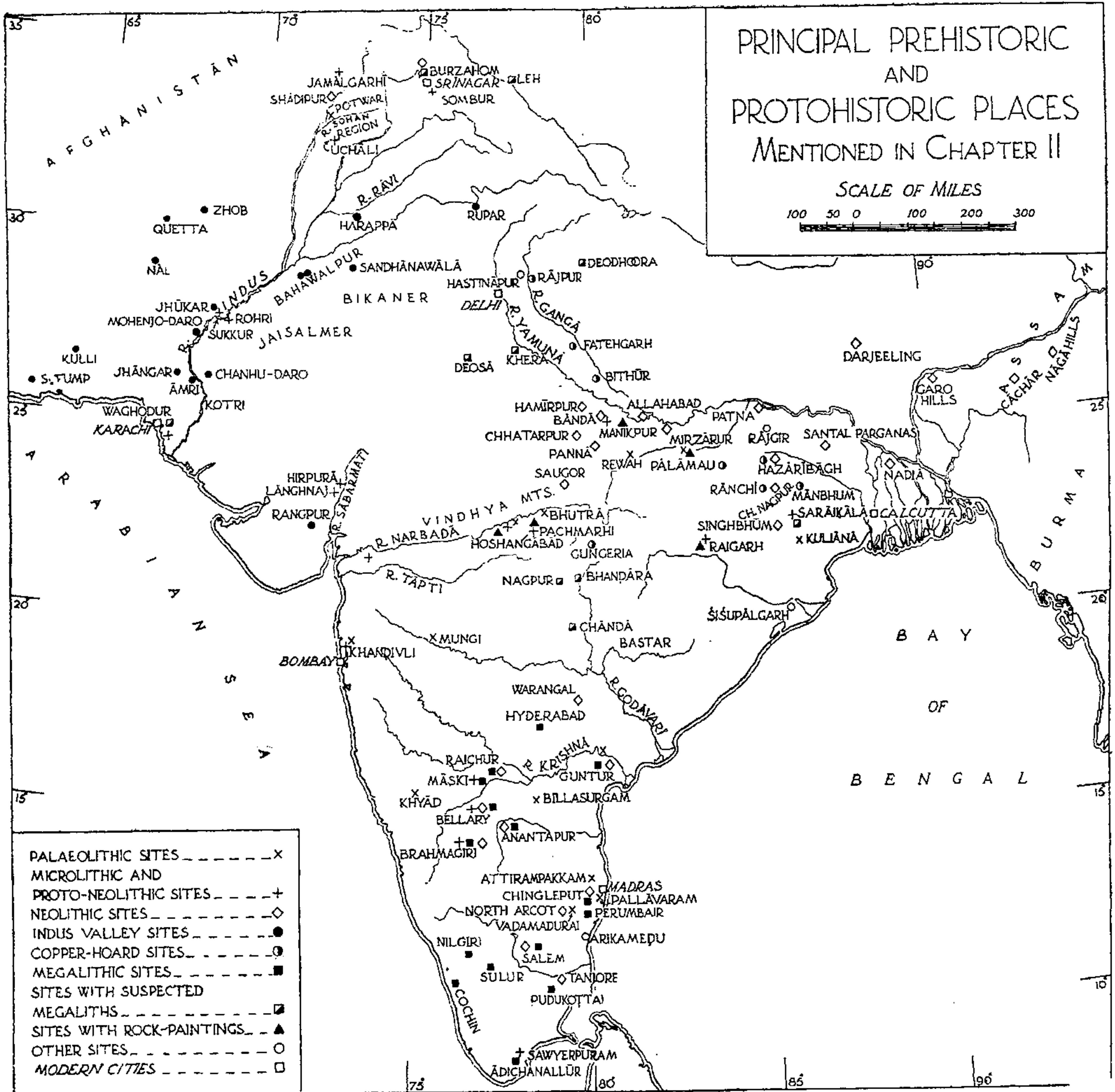
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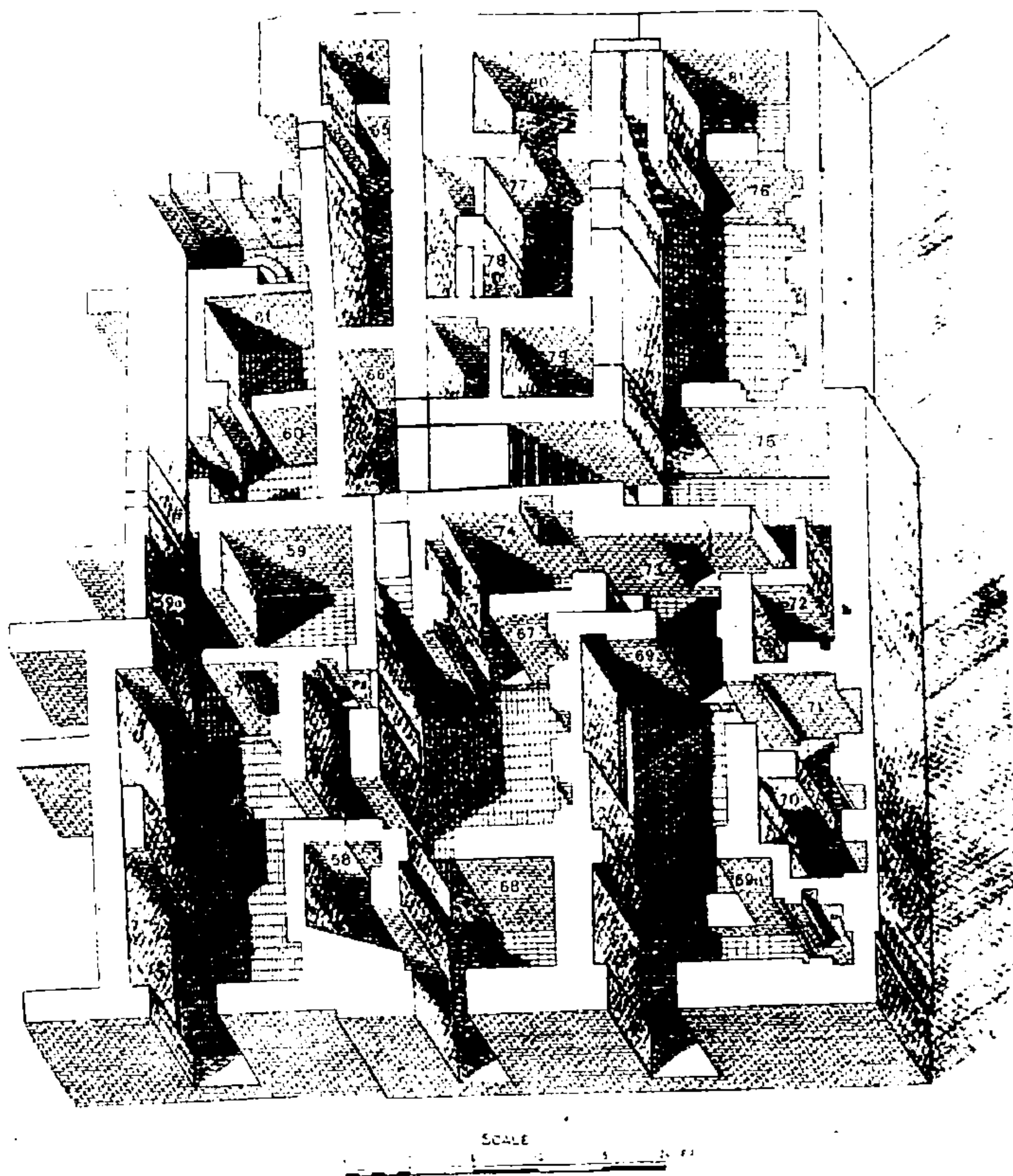
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MOHENJO-DARO: OBLIQUE PROJECTION OF A HOUSE



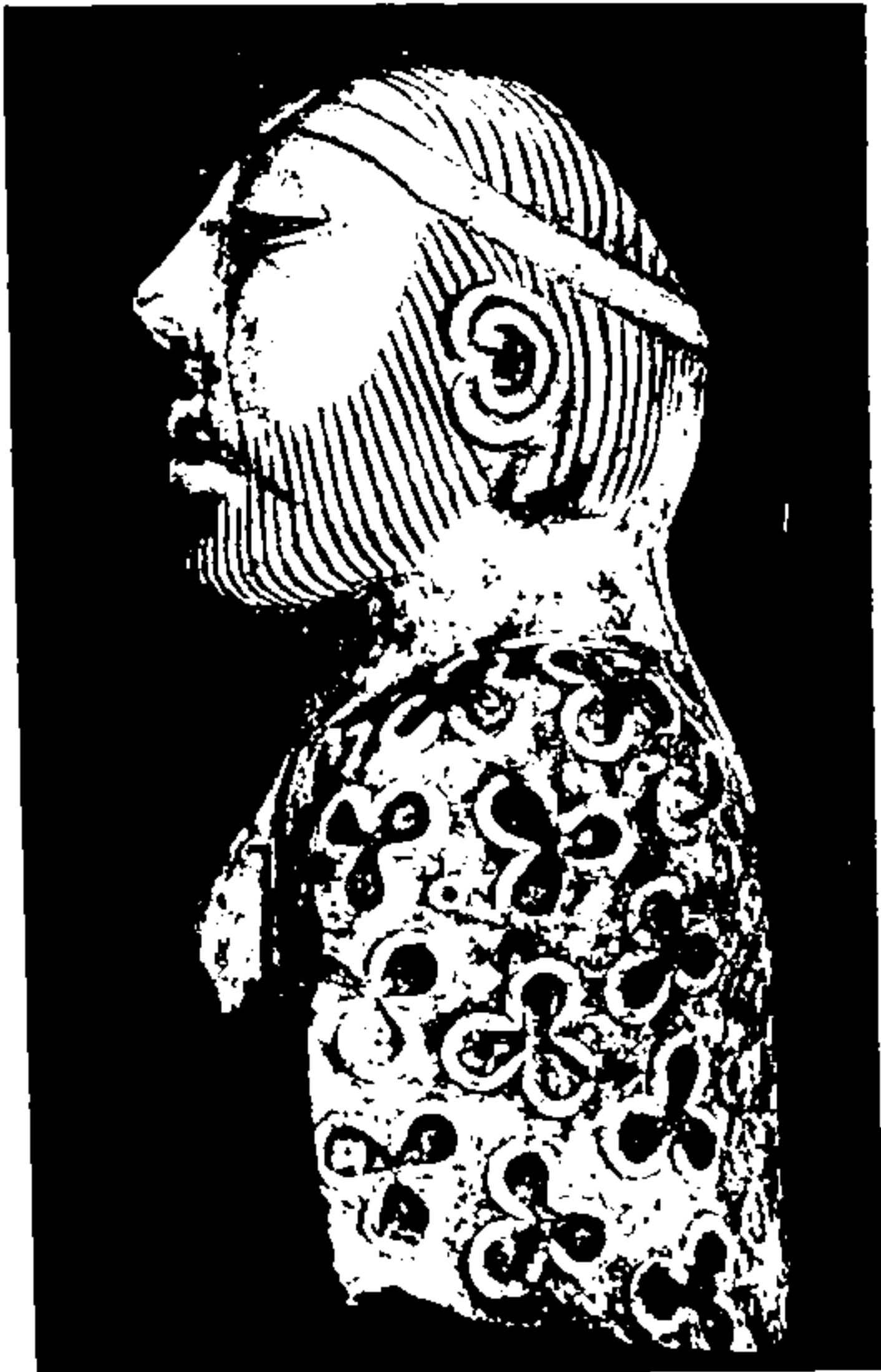
MOHENJO-DARO: THE GREAT BATH



HARAPPĀ: SECTION ACROSS THE MUD-BRICK DEFENCES OF THE CITADEL (MOUND AB)



HARAPPĀ: THE GREAT GRANARY



A. MOHENJO-DARO : LIMESTONE STATUETTE



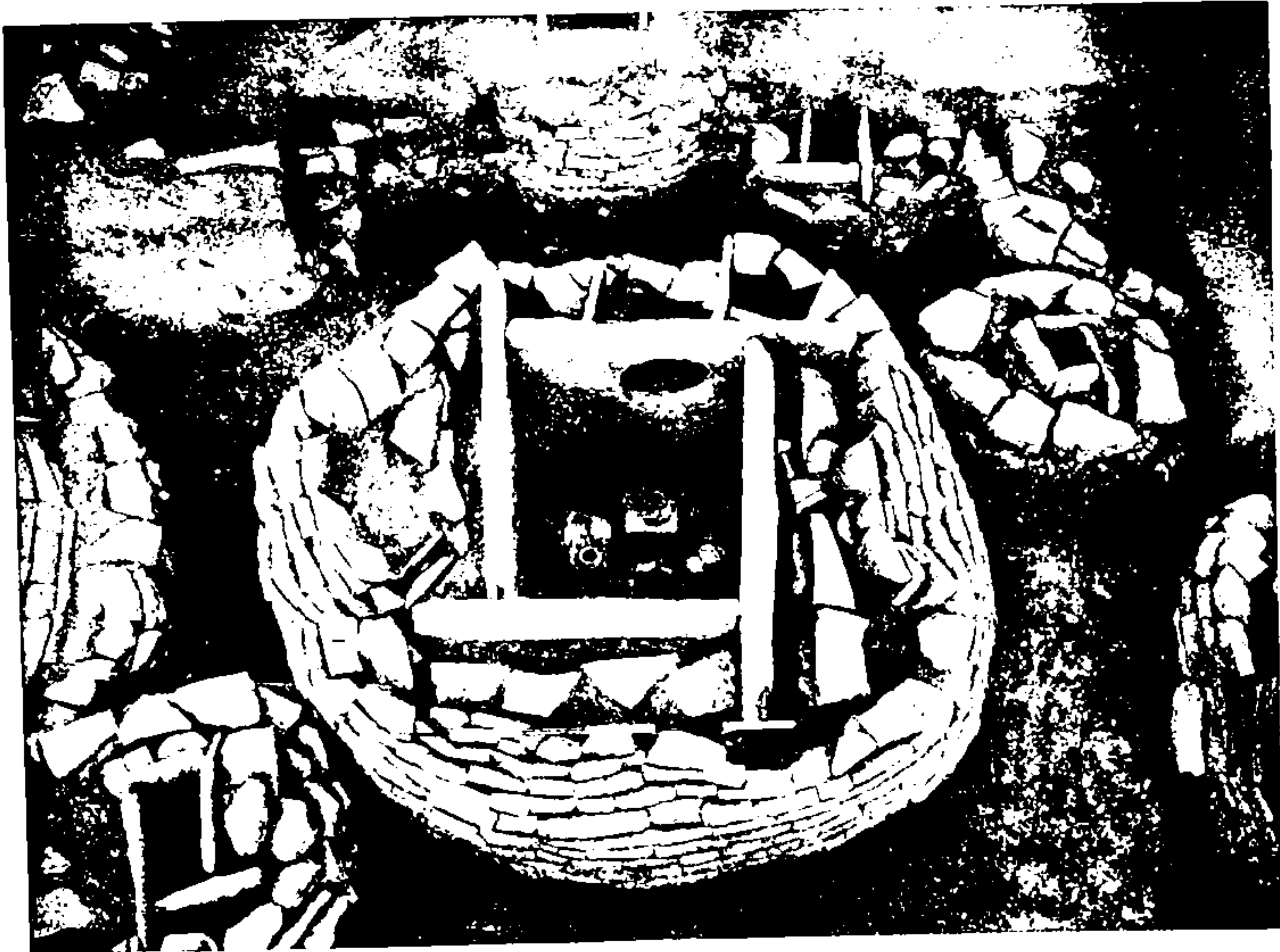
B. HARAPPĀ : RED SANDSTONE STATUETTE



A. MOHENJO-DARO: BRONZE DANCING GIRL



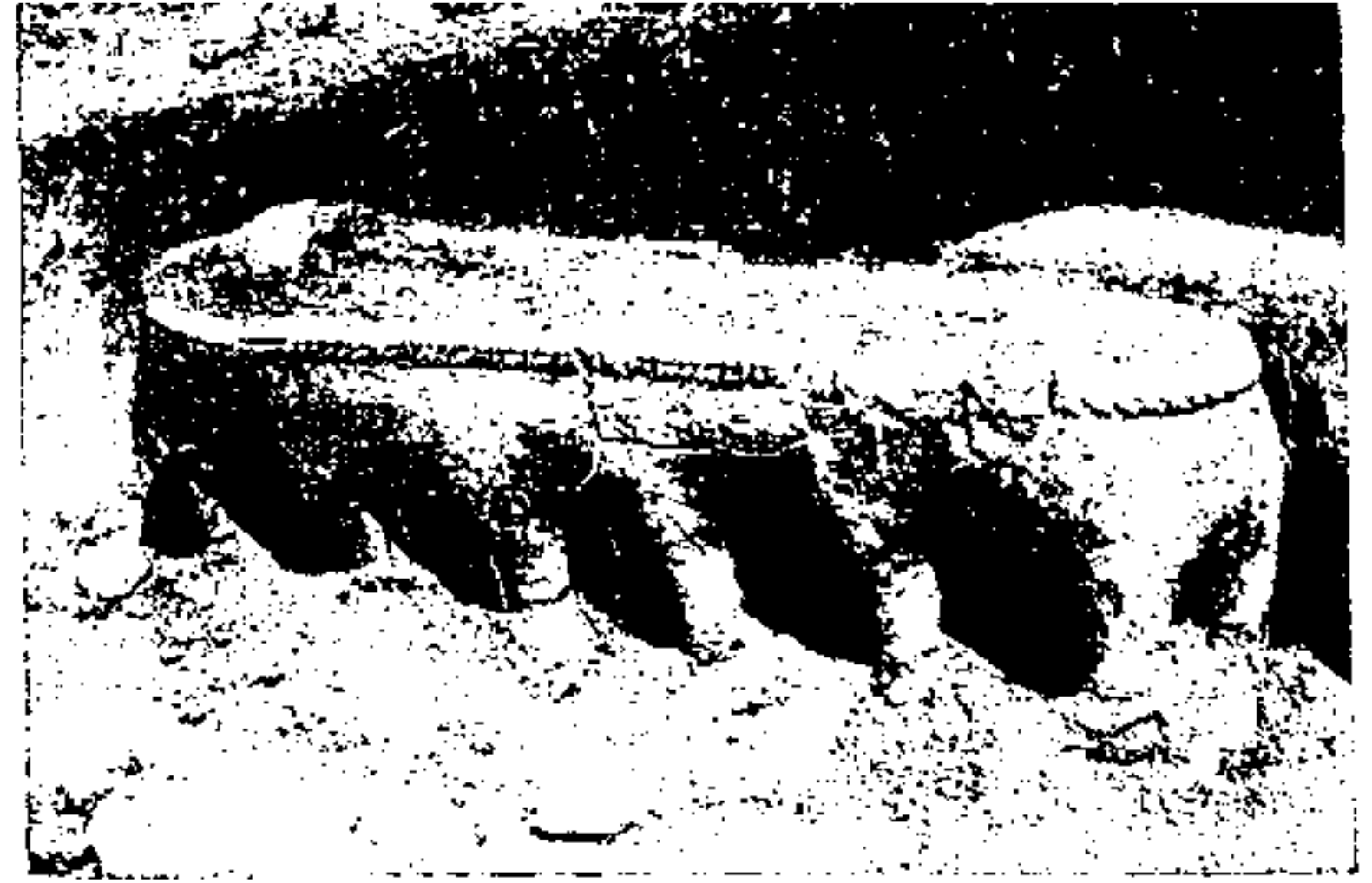
B. MOHENJO-DARO: STEATITE SEALS. SCALE ROUGHLY 1/2



BRAHMIAGIRI (MYSORE STATE): MEGALITHIC CIST AFTER EXCAVATION



A. MENHIR NEAR VILLADUR, TRICHUR TALUK,
COCHIN STATE



B. SARCOPHAGUS AT PALLAVARAM, CHINGLEPUT
DISTRICT, MADRAS



C. TOPIKAL AT CHERAMANANGAD,
COCHIN STATE



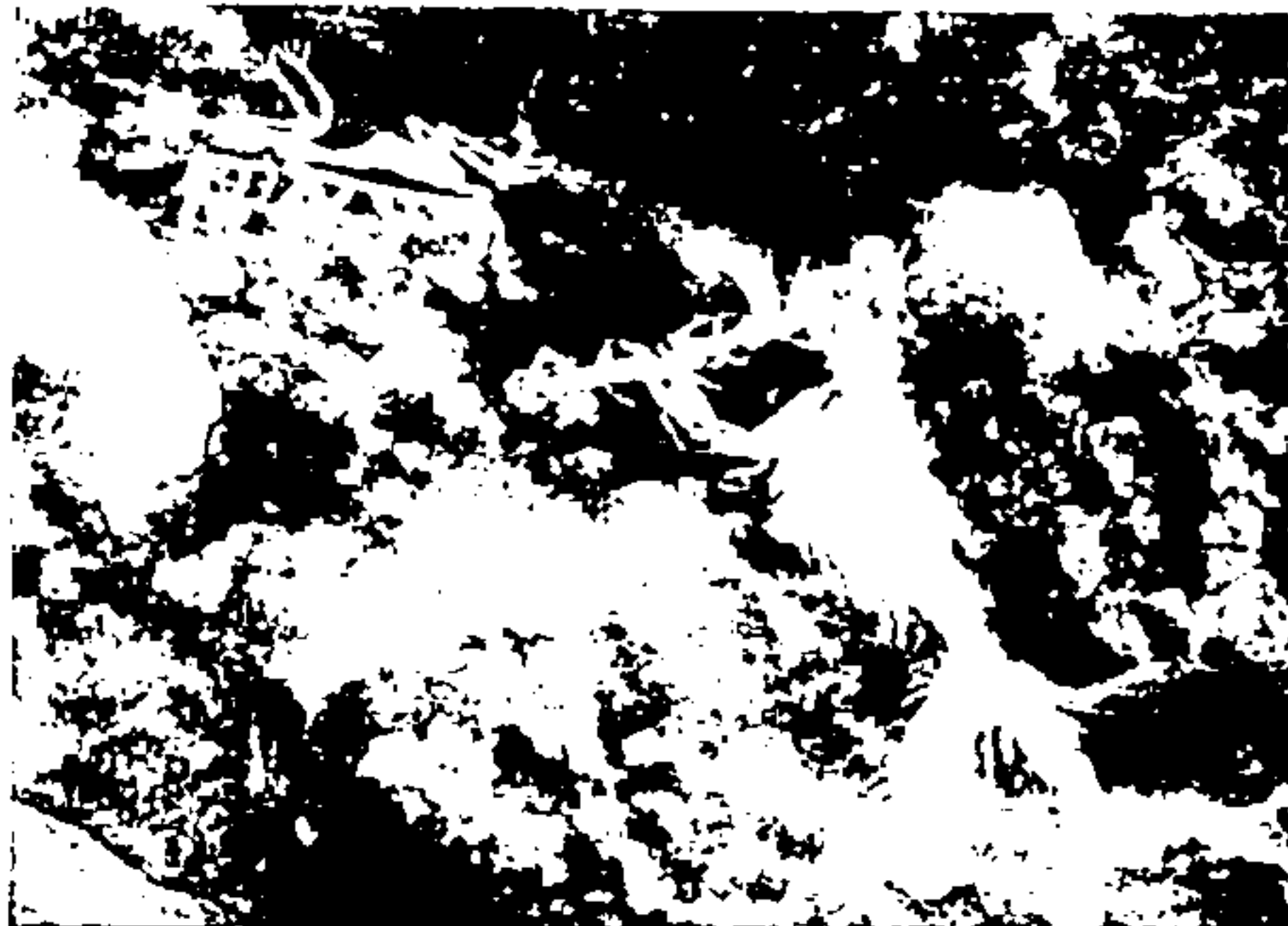
SINGANPUR, RAIGARH STATE: ROCK-PAINTING SHOWING A HUNTING SCENE



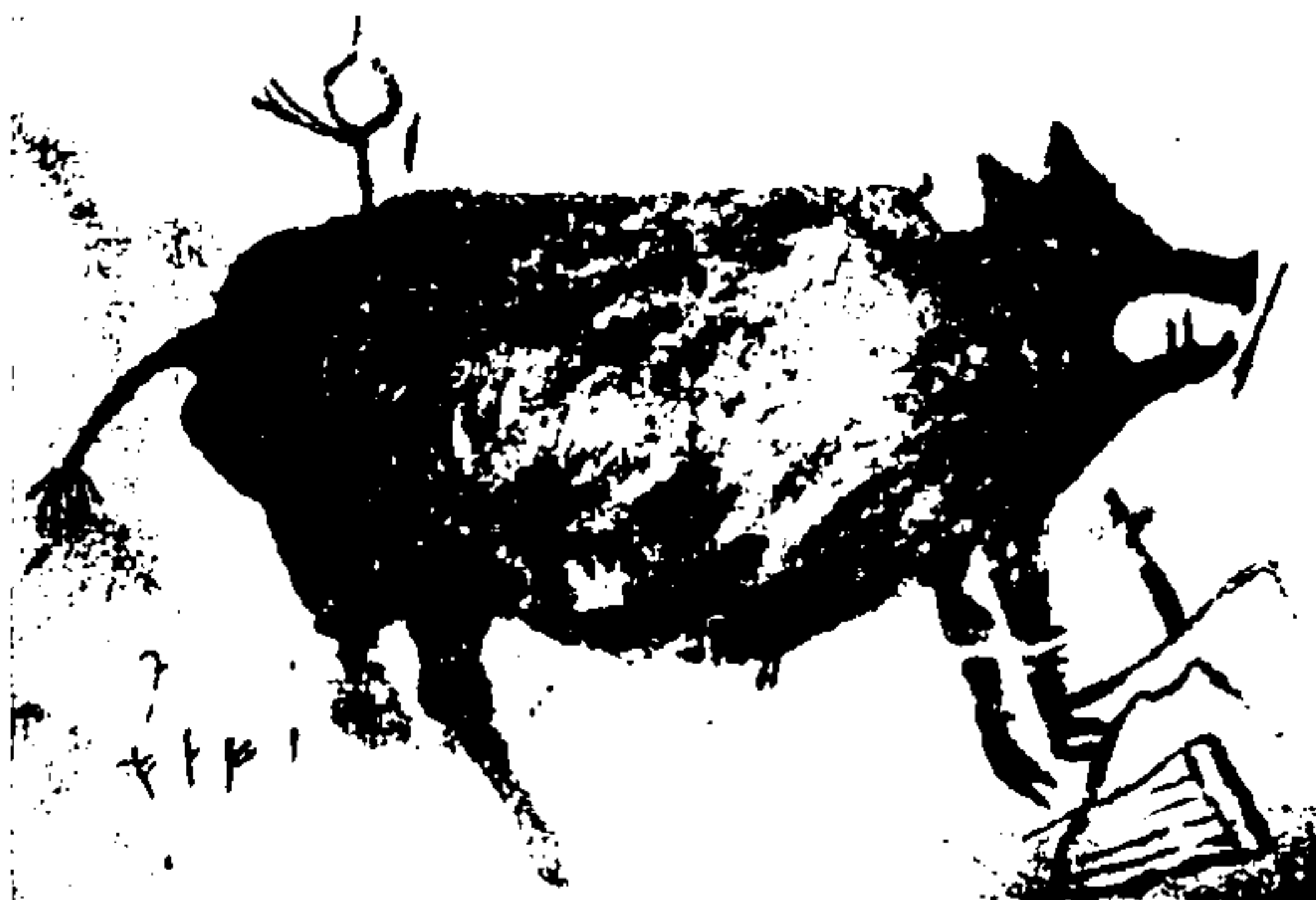
BANĀ BĒRĪ CAVE, PACHMARHĪ ROCK-PAINTING SHOWING CROSS-WORSHIP



A. DANĀ BERI CAVE, PACHMARHI:
ROCK-PAINTING SHOWING A 'STENCILLED' CROSS



B. UPPER DOROTHY DEEP SHELTER, PACHMARHI:
ROCK-PAINTING SHOWING MONKEY PLAYING A FLUTE



C. MIRZĀPUR: ROCK-PAINTING SHOWING A WOUNDED BOAR



SIRKAP (TAXILA): EXCAVATED BUILDINGS FLANKING THE CENTRAL STREET ; FIRST CENTURY



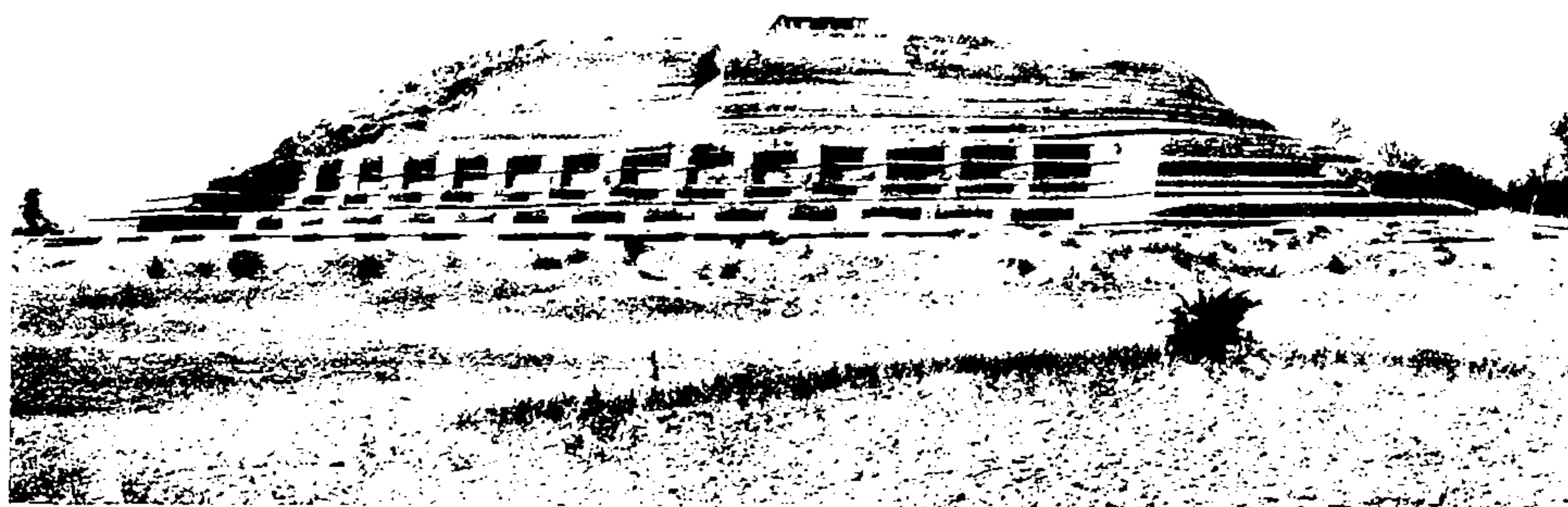
TAXILA : DHARMAĀJIKĀ STŪPA WITH ANCILLARY BUILDINGS : SECOND-THIRD CENTURY



RĀJGIR (BĀṂGAṂĀ): THE OUTER FORTIFICATION; EARLIER THAN THE FIFTH CENTURY B.C.



PATNA (BULANDĪBĀGH): REMAINS OF THE WOODEN PALISADE; c. FOURTH CENTURY B.C.



NANDANGARI STÜPA (DISTRICT CHAMPĀRAN): EARLY CENTURIES A.D.

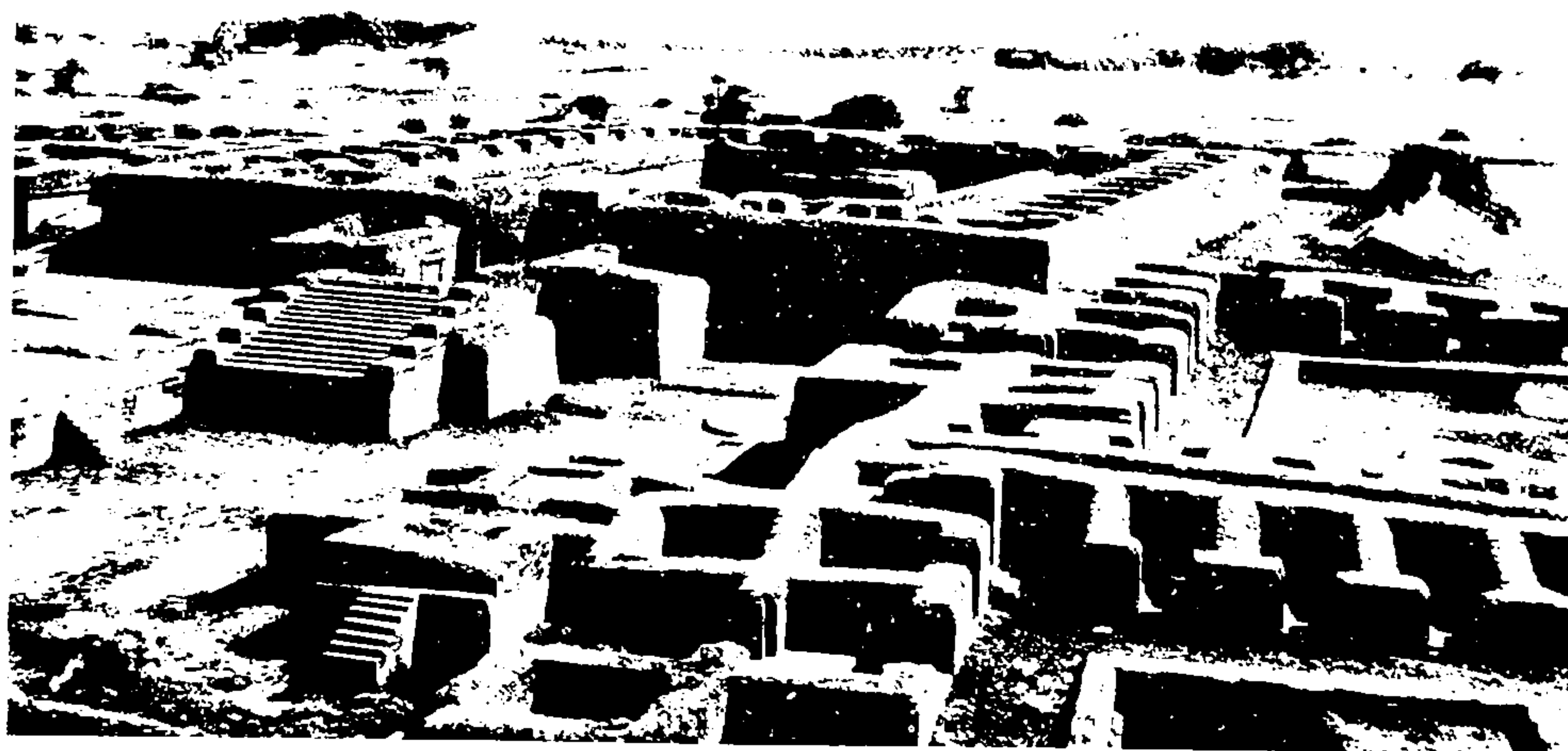


PLATE XVIII

NĀLANDĀ : GROUP OF MONASTERIES ; EIGHTH-TWELFTH CENTURIES



PAHARPUR: TERRACED BRICK TEMPLE: EARLY NINTH CENTURY

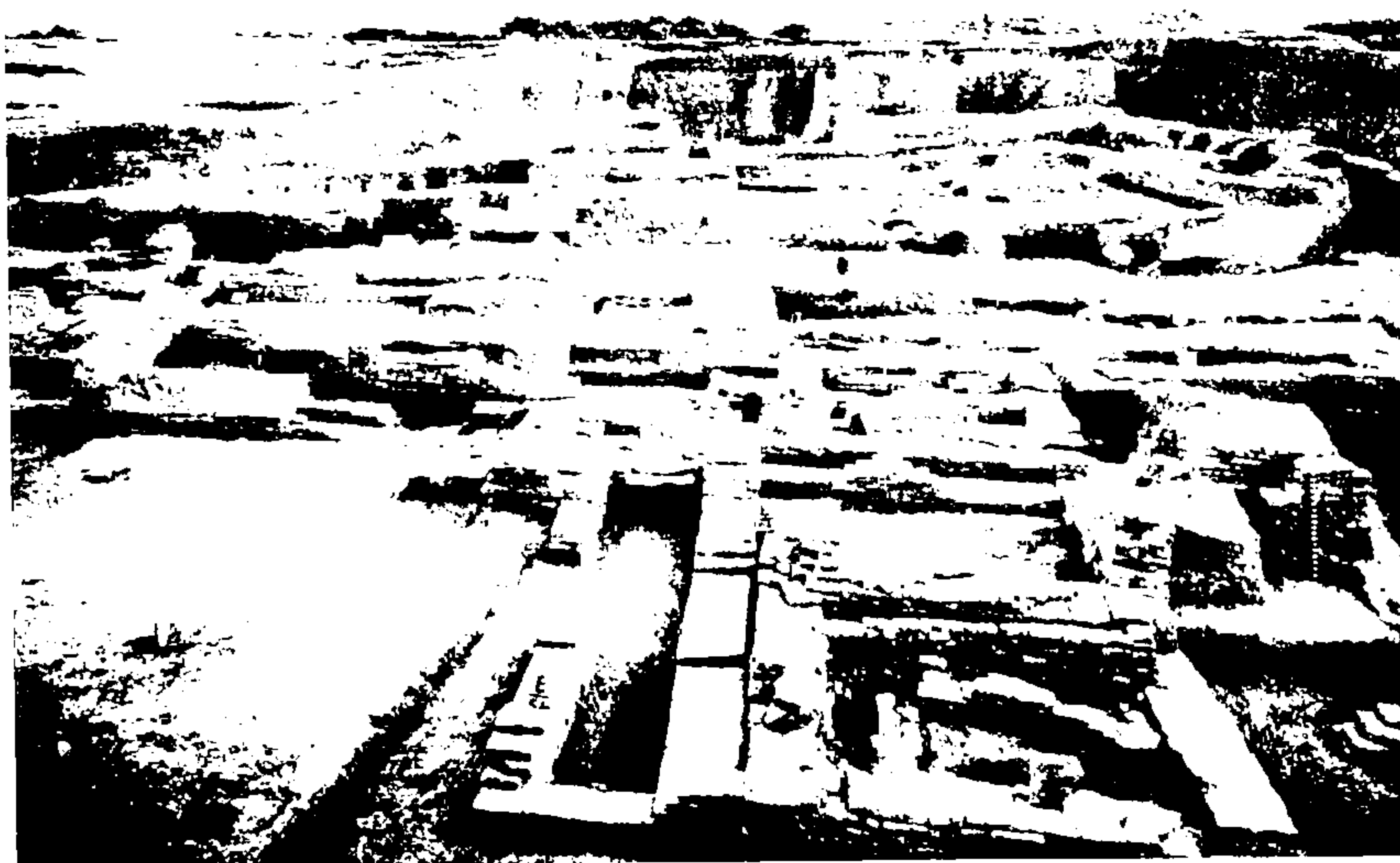
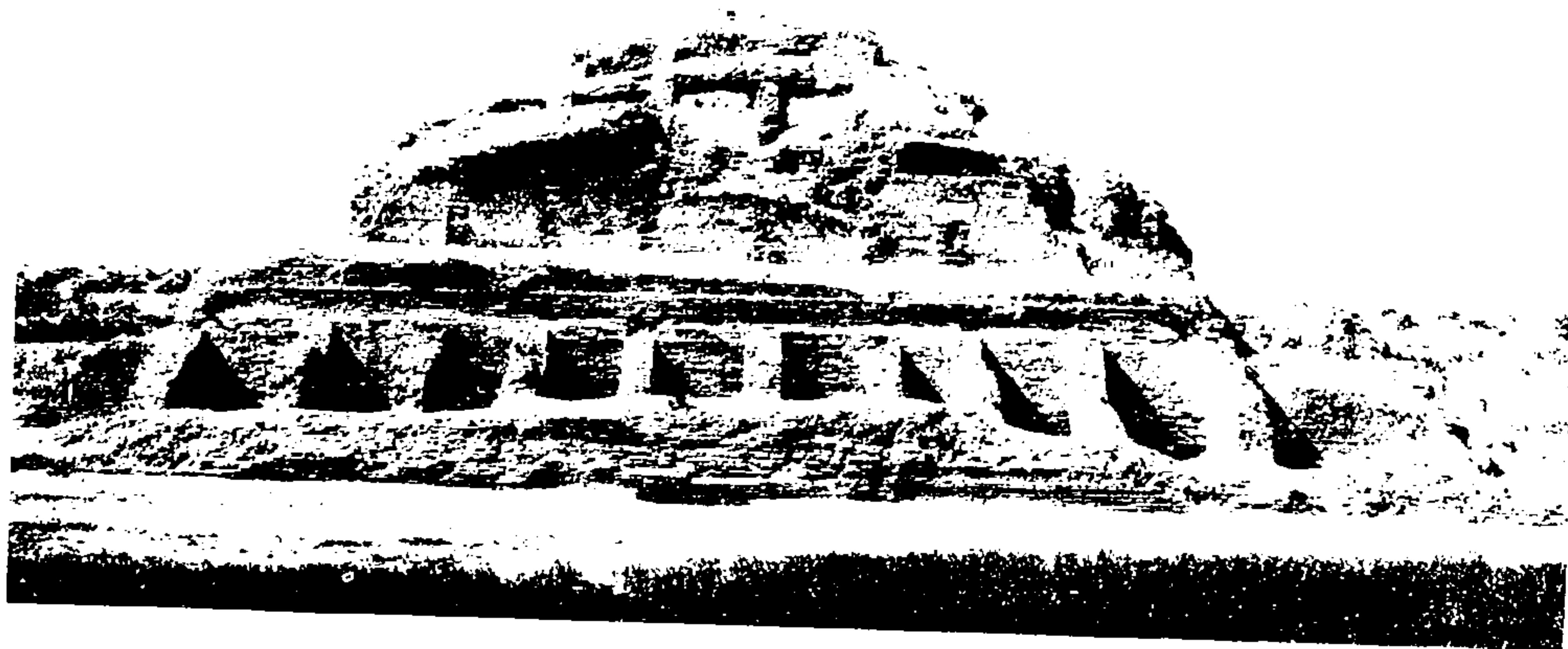


PLATE XX

AHICUCHIATRÃ : STRUCTURES OF PERIOD VII IN THE FOREGROUND AND OF PERIOD IX IN THE BACKGROUND : FOURTH-FIFTH CENTURIES.

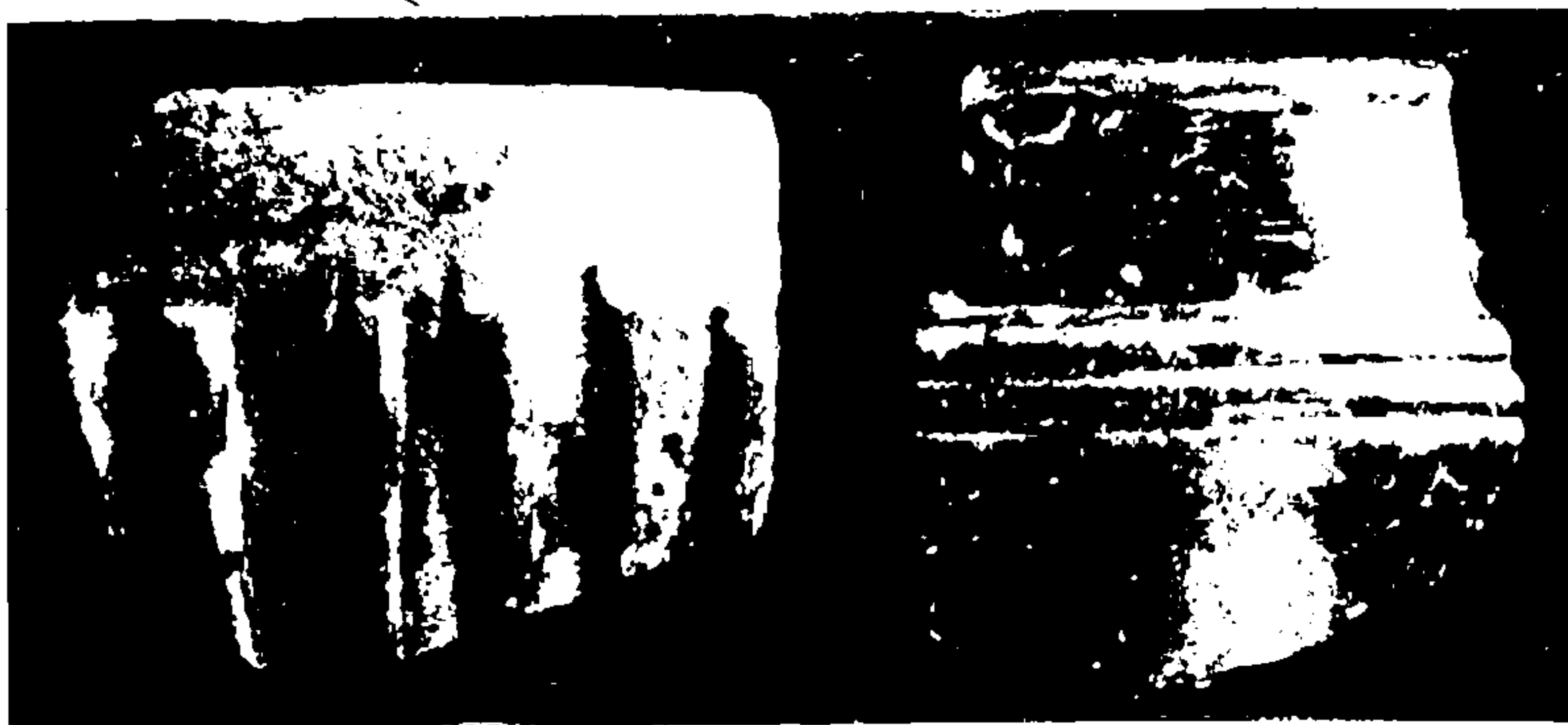


ARICHCHHATRĀ : TERRACED BRICK TEMPLE WITH FOUNDATION-CELLS : FOURTH-TENTH CENTURIES



ŚIŚUPĀLGARH : SECTION ACROSS THE DEFENCES. The central figure points to the top of clay rampart of Phase I, the black band represents the laterite gravel of Phase II, and the brick revetment at top left belongs to Phase III ; 200 B. C.—A. D. 250.

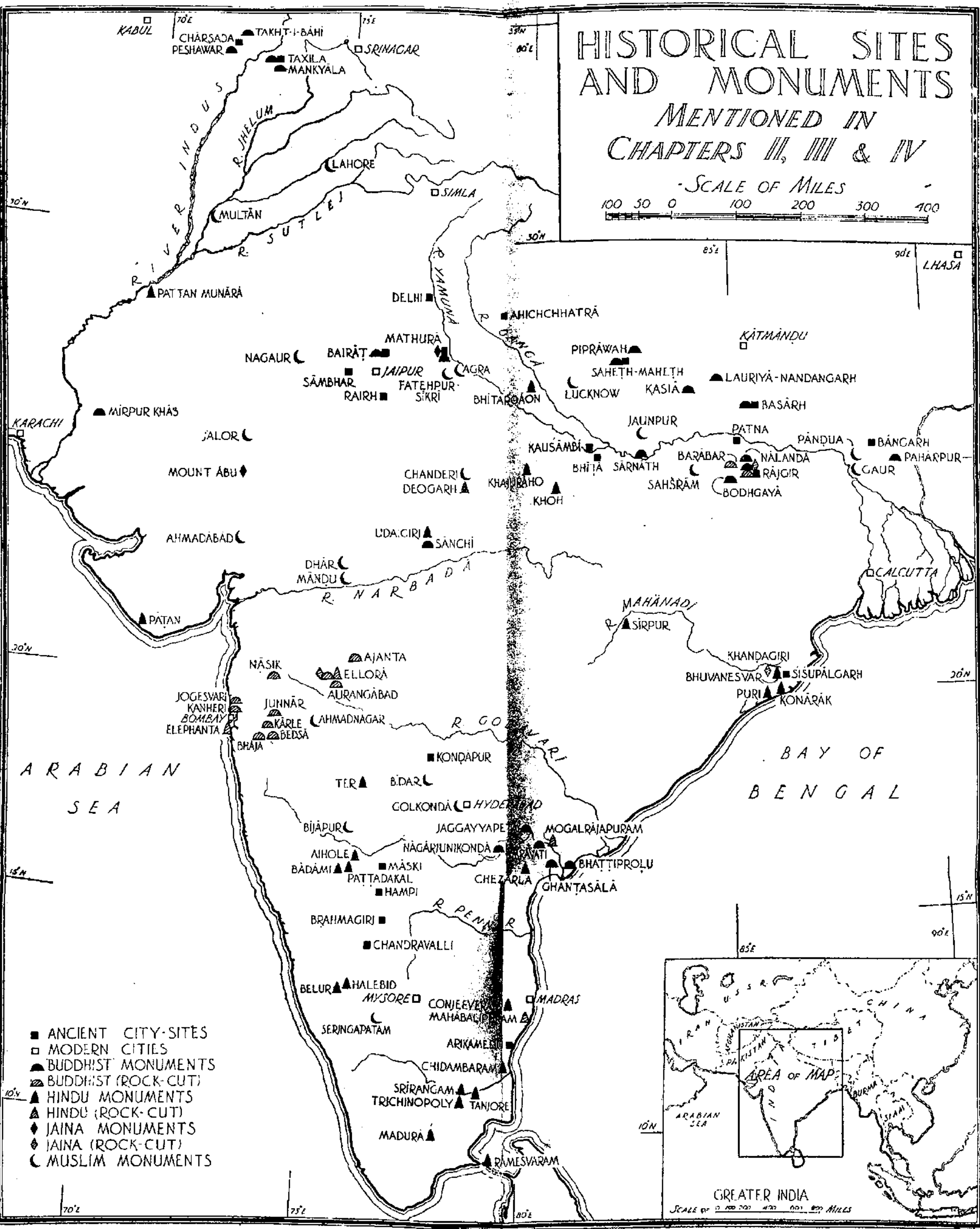
PLATE XXIII



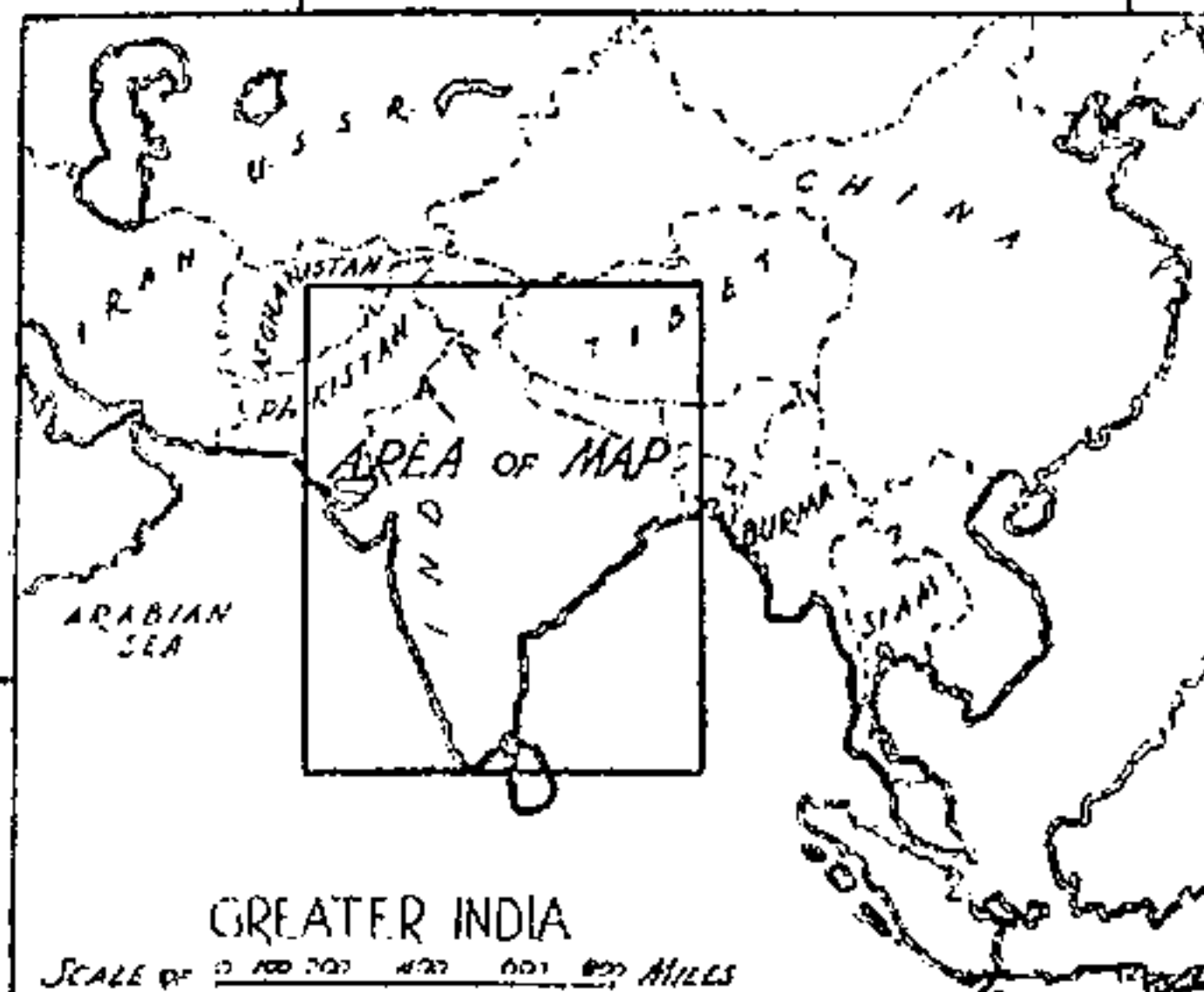
ARIKAMEDU : ROMAN GLASS BOWLS AND STAMPS ON ARRETINE WARE, READING
VIBIE or VIBIF, CAMVRI and ITTA ; FIRST CENTURY. SCALE 1/1

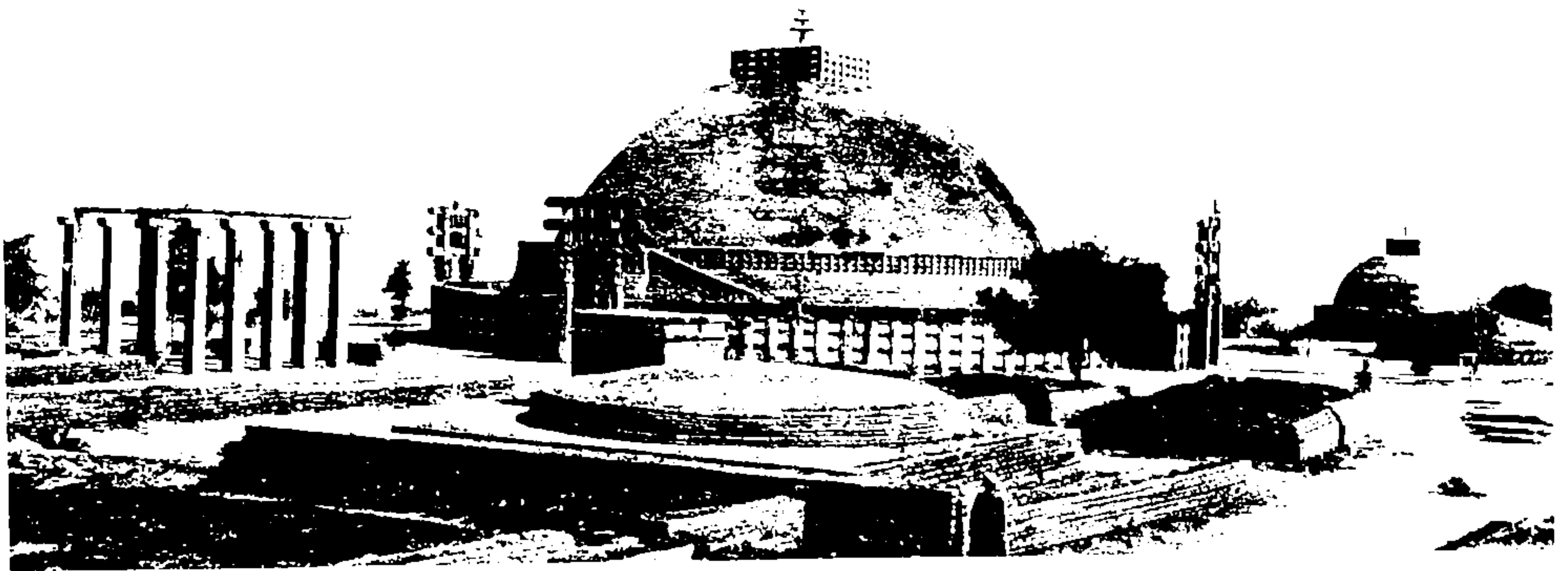
HISTORICAL SITES AND MONUMENTS MENTIONED IN CHAPTERS III, III & IV

SCALE OF MILES



- ANCIENT CITY-SITES
- MODERN CITIES
- ▲ BUDDHIST MONUMENTS
- ▨ BUDDHIST (ROCK-CUT)
- ▲ HINDU MONUMENTS
- ▲ HINDU (ROCK-CUT)
- ◆ JAINA MONUMENTS
- ◆ JAINA (ROCK-CUT)
- MUSLIM MONUMENTS

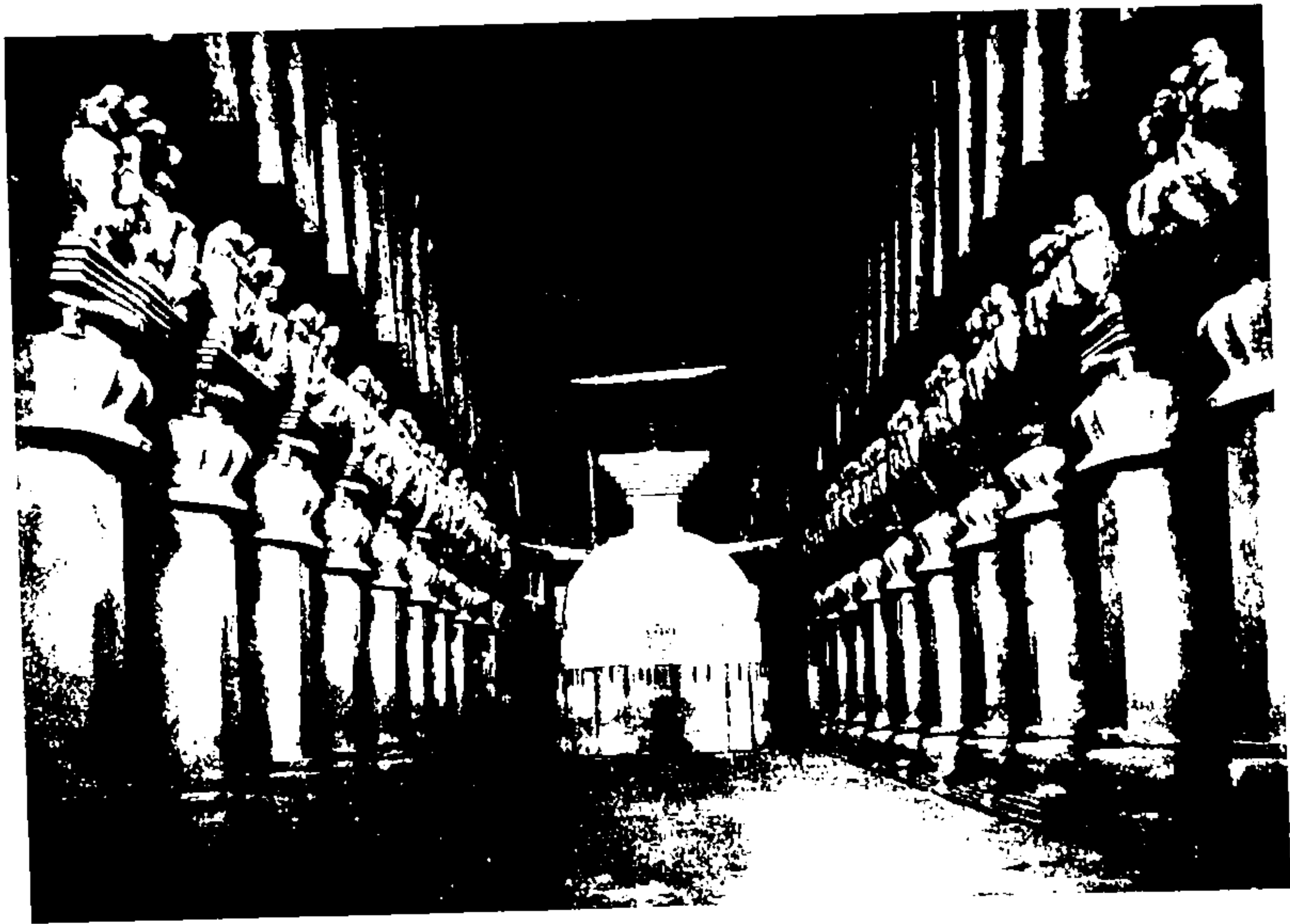




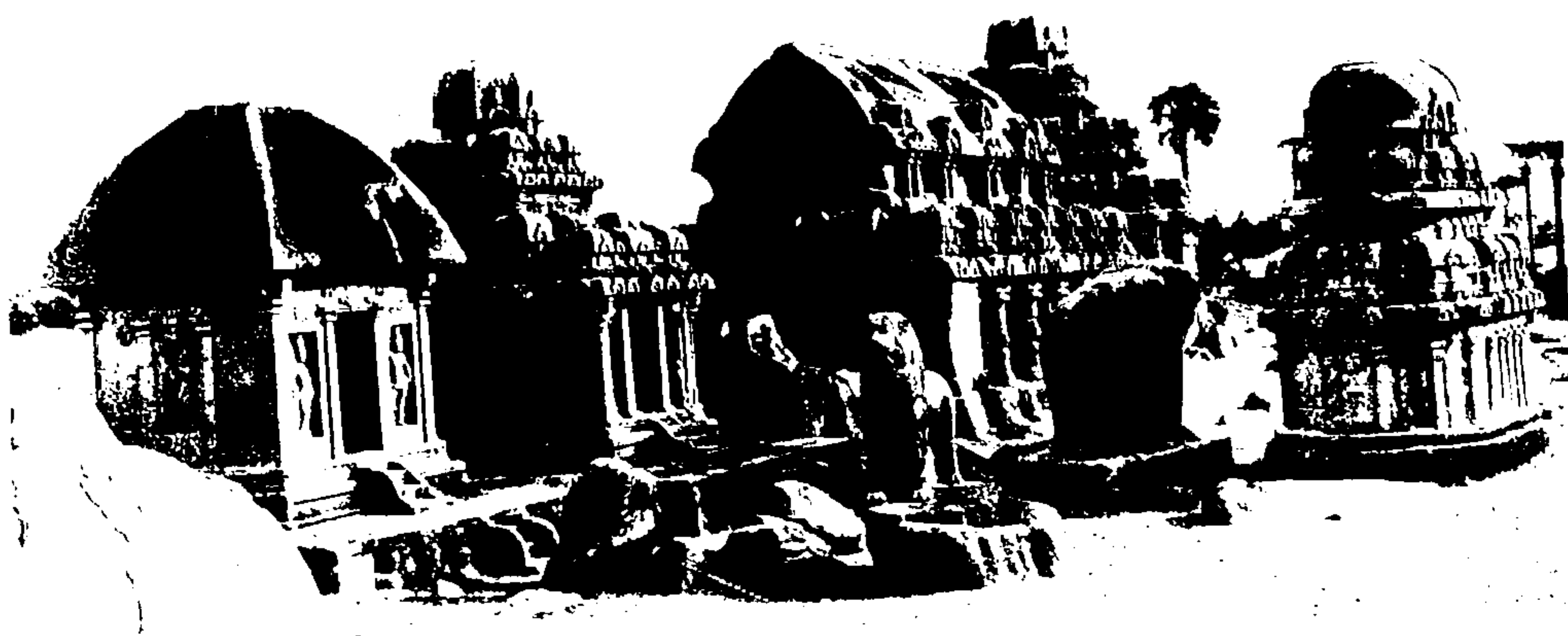
SANCHI : STUPA I : c. 250-50 B.C.



SARNATH: DHAMEK STŪPA; c. 500



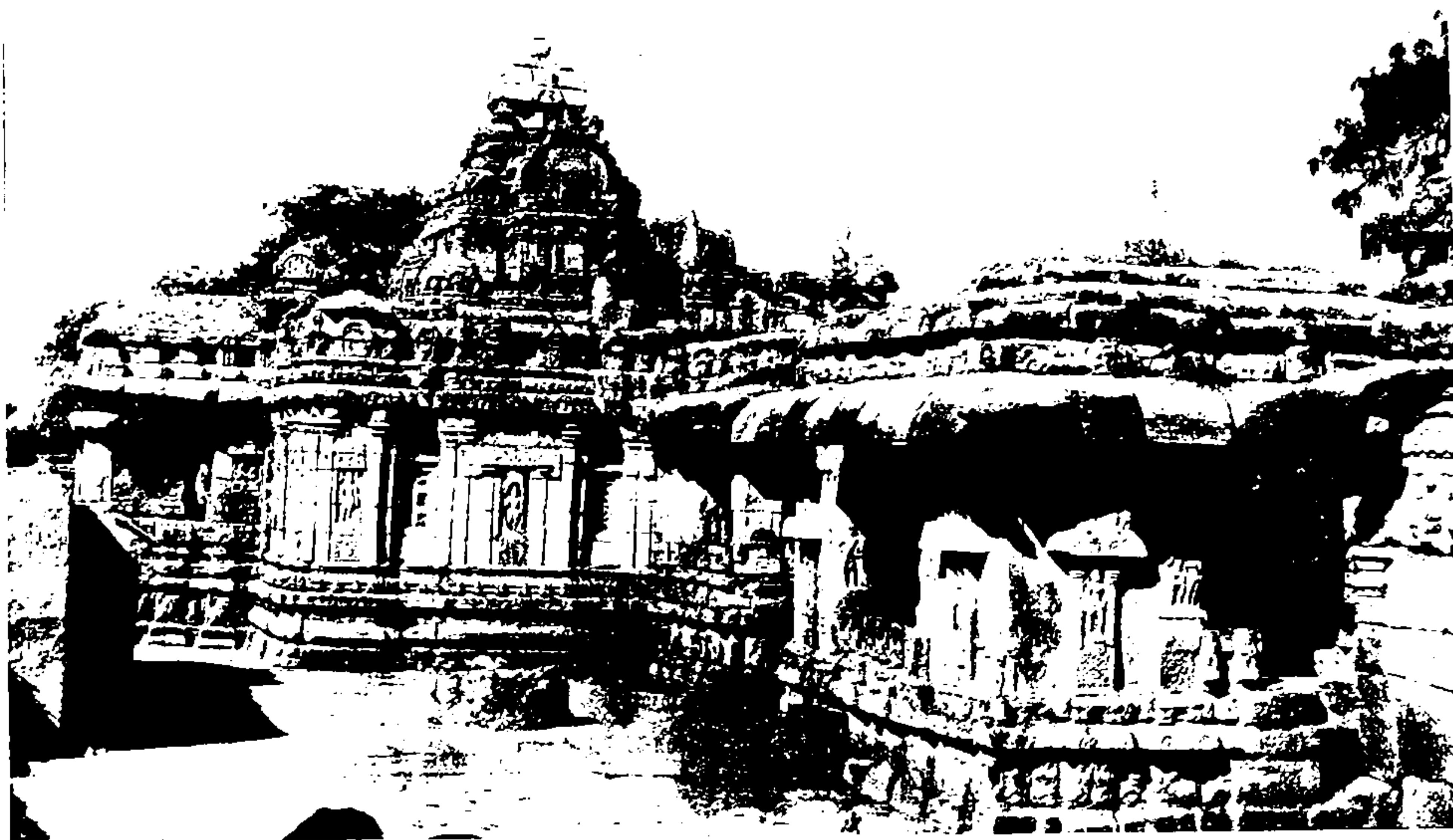
KARLE: INTERIOR OF CHAITYA HALL; C. 50 B.C.



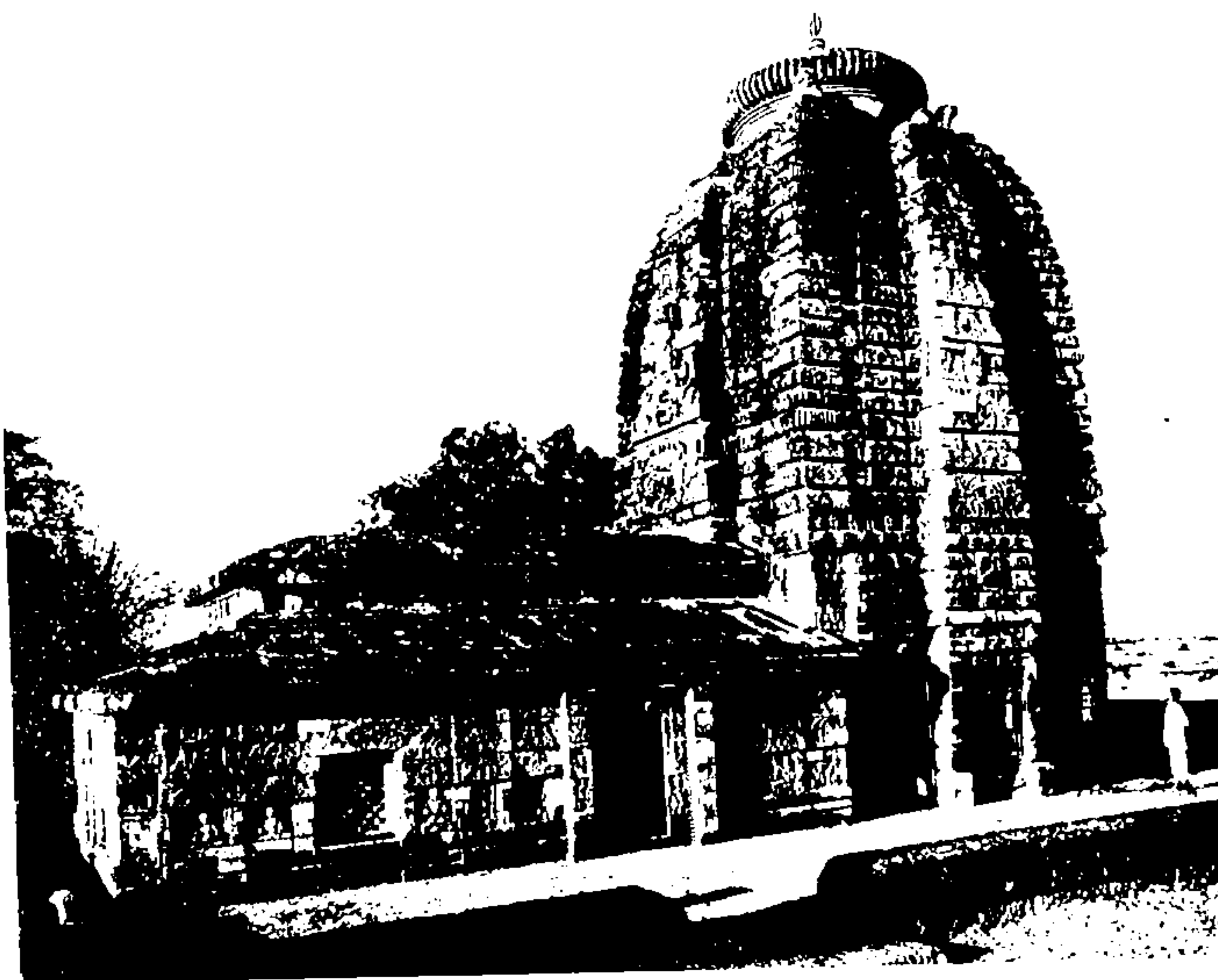
MAHĀBALIPURAM: MONOLITHIC RATHAS: SEVENTH CENTURY



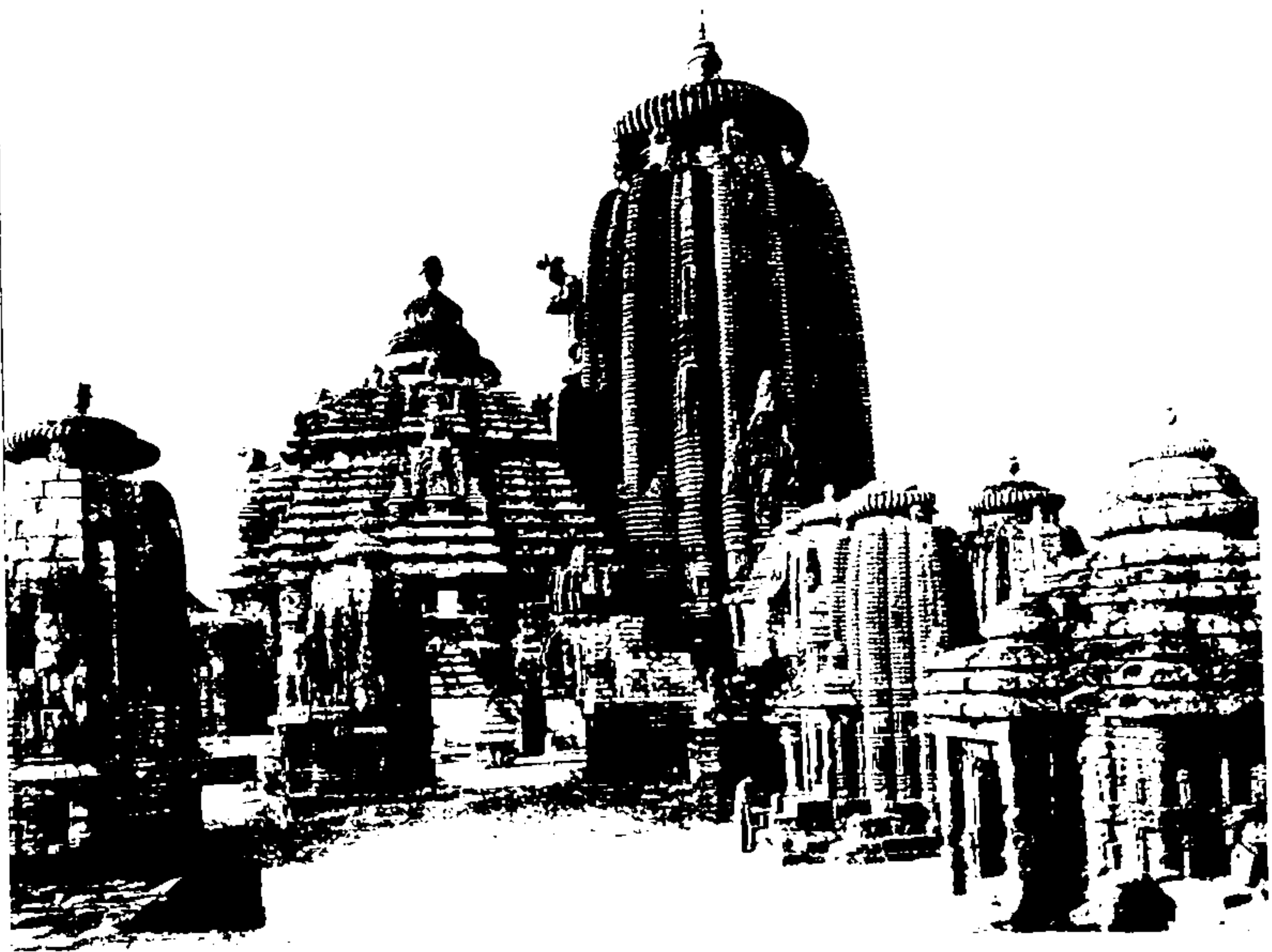
PATTADAKAL: VIRUPAKSHA TEMPLE c. 680



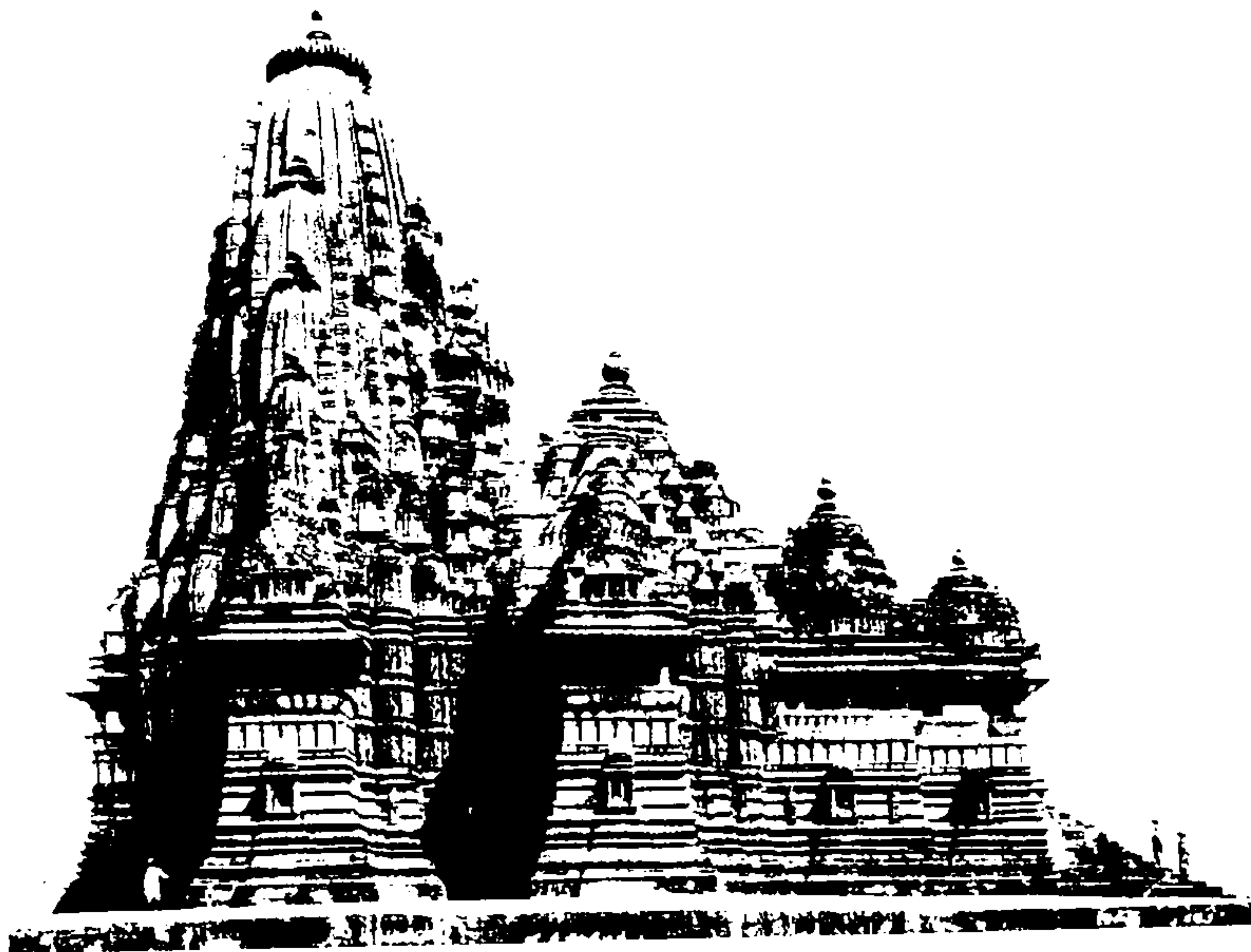
PATTADAKAL: VIRUPAKSHA TEMPLE; c. 740



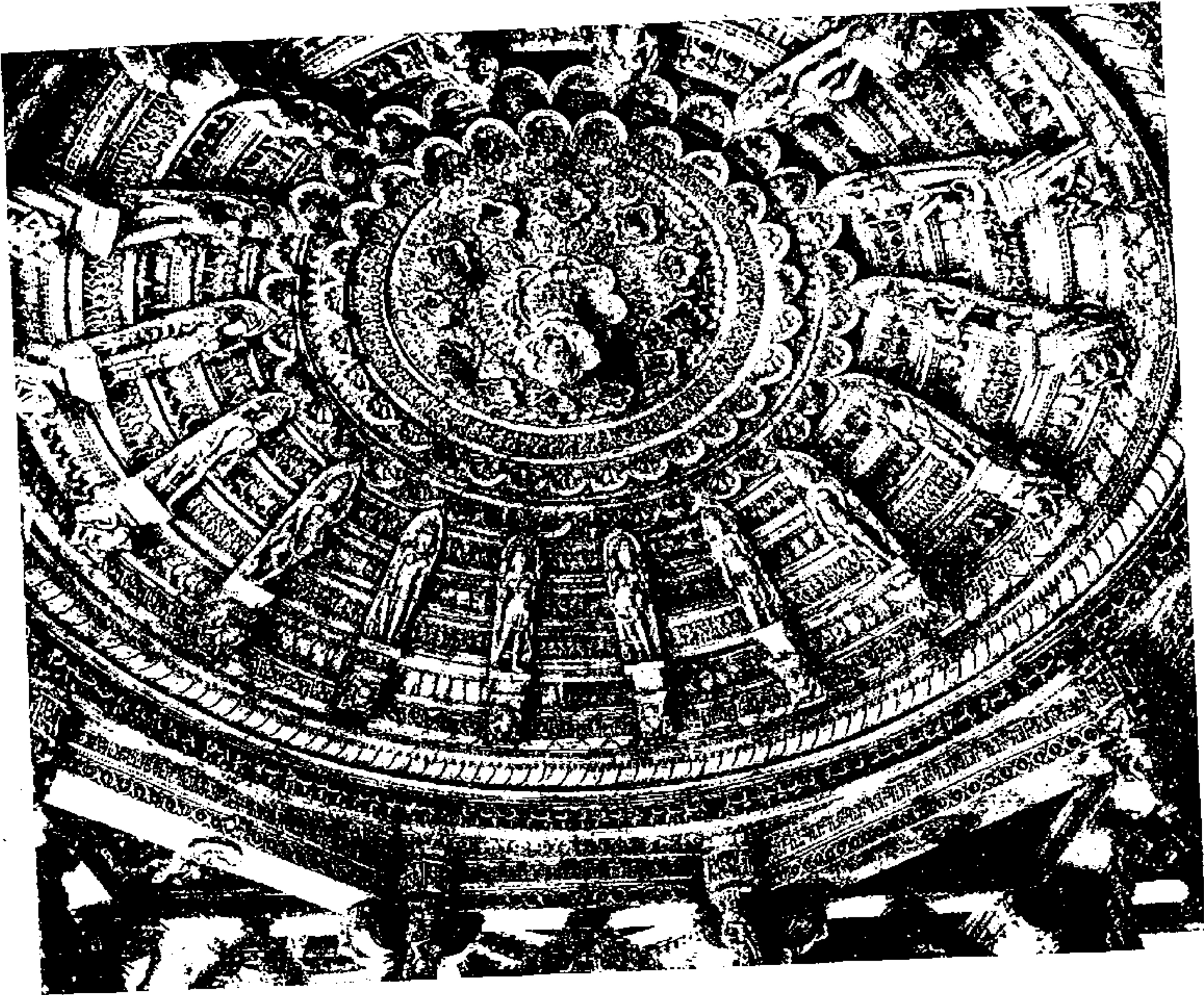
BHUVANESVAR: PARĀŚURĀMEŚVARA TEMPLE; EIGHTH CENTURY



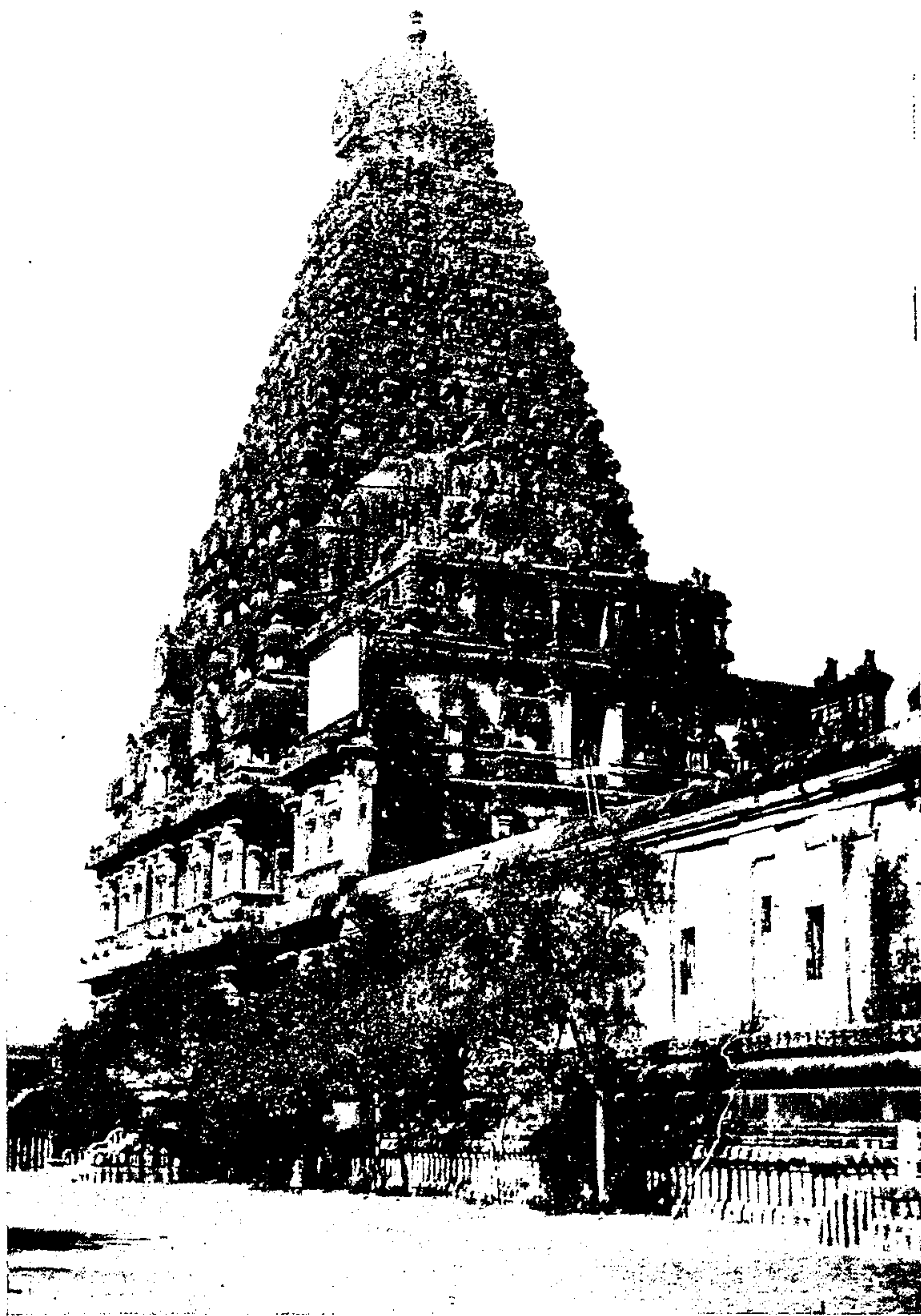
BHUVANESVAR : LINGARAJA TEMPLE : c. 1000



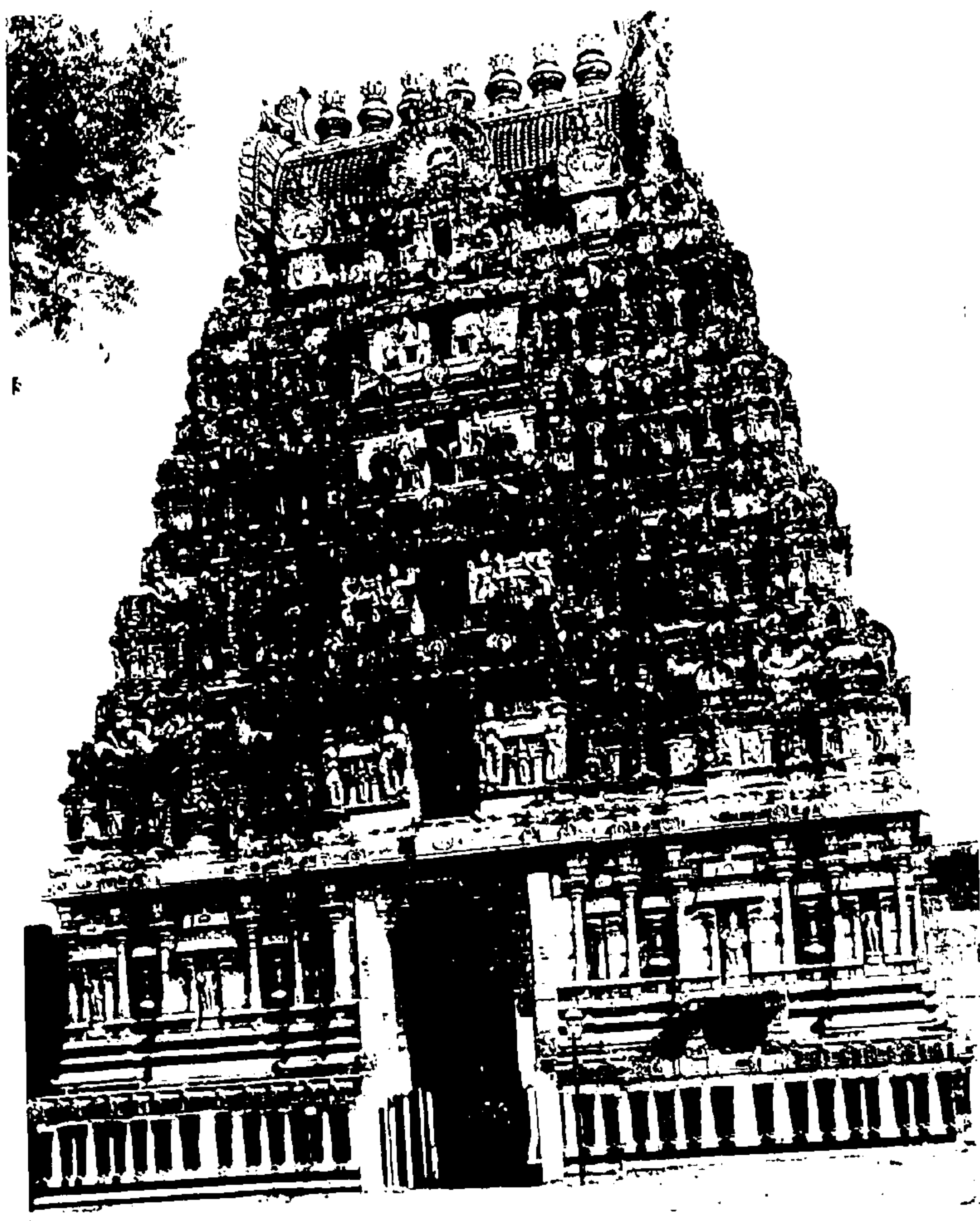
KHAJURĀHO : KANDARIYA MAHĀDEO TEMPLE ; c. 1000



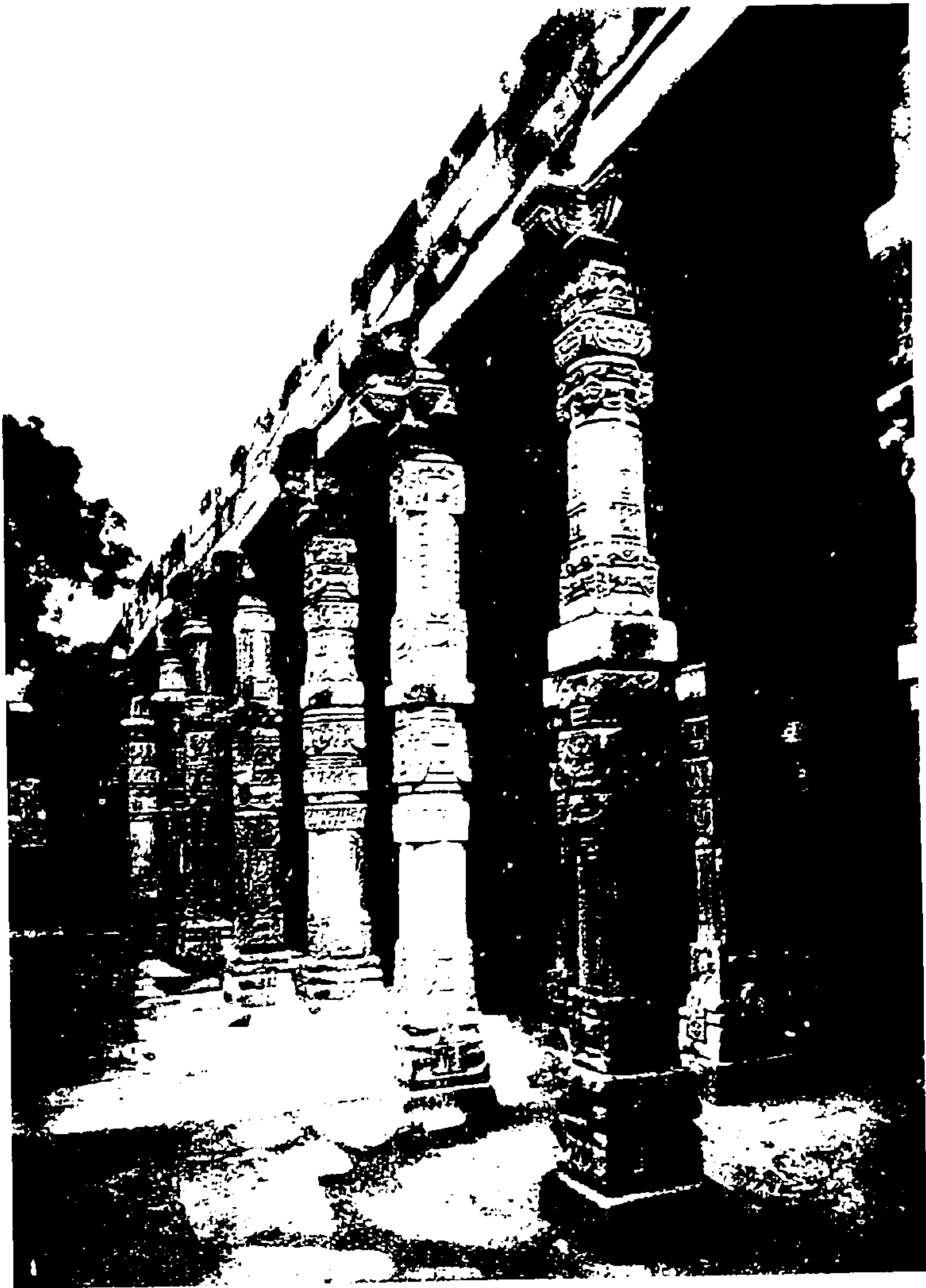
MT. ĀBU: CEILING OF VIMALA SHĪH TEMPLE AT DILWĀRA; c. 1031



TANJORE: BRIHADISVARA TEMPLE; *c.* 1000



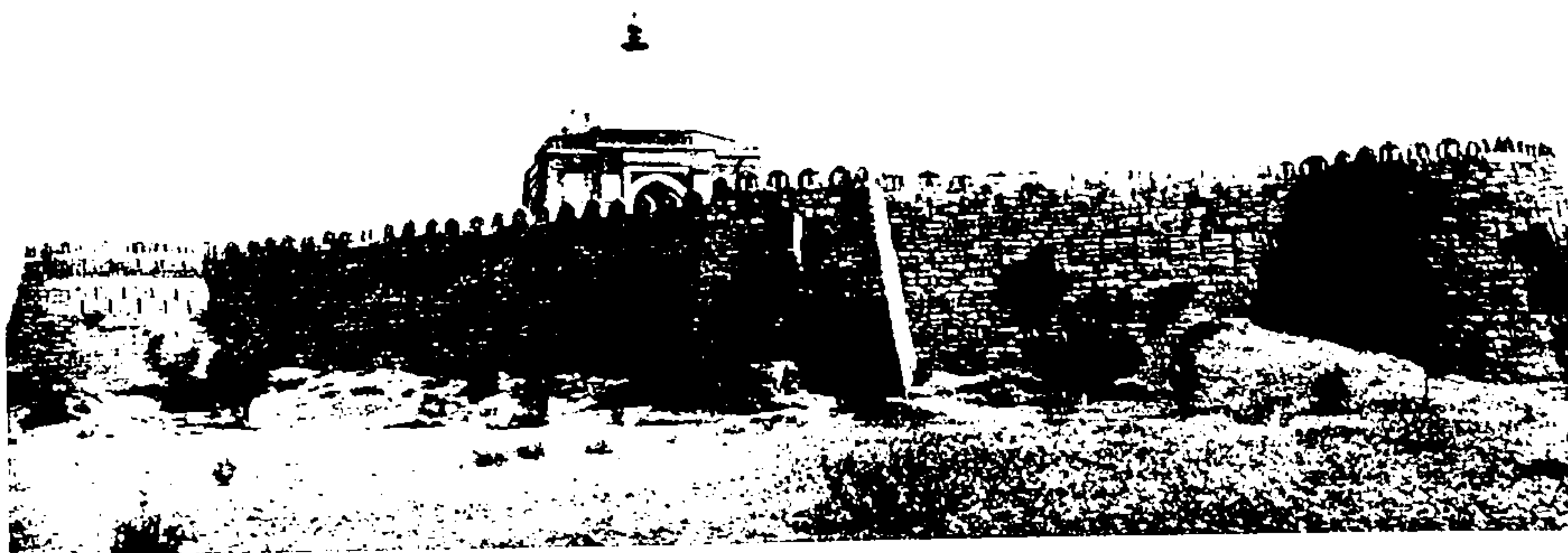
CONJEEVERAM : GOPURAM OF KĀMĀKSHĪ TEMPLE : c. 1600



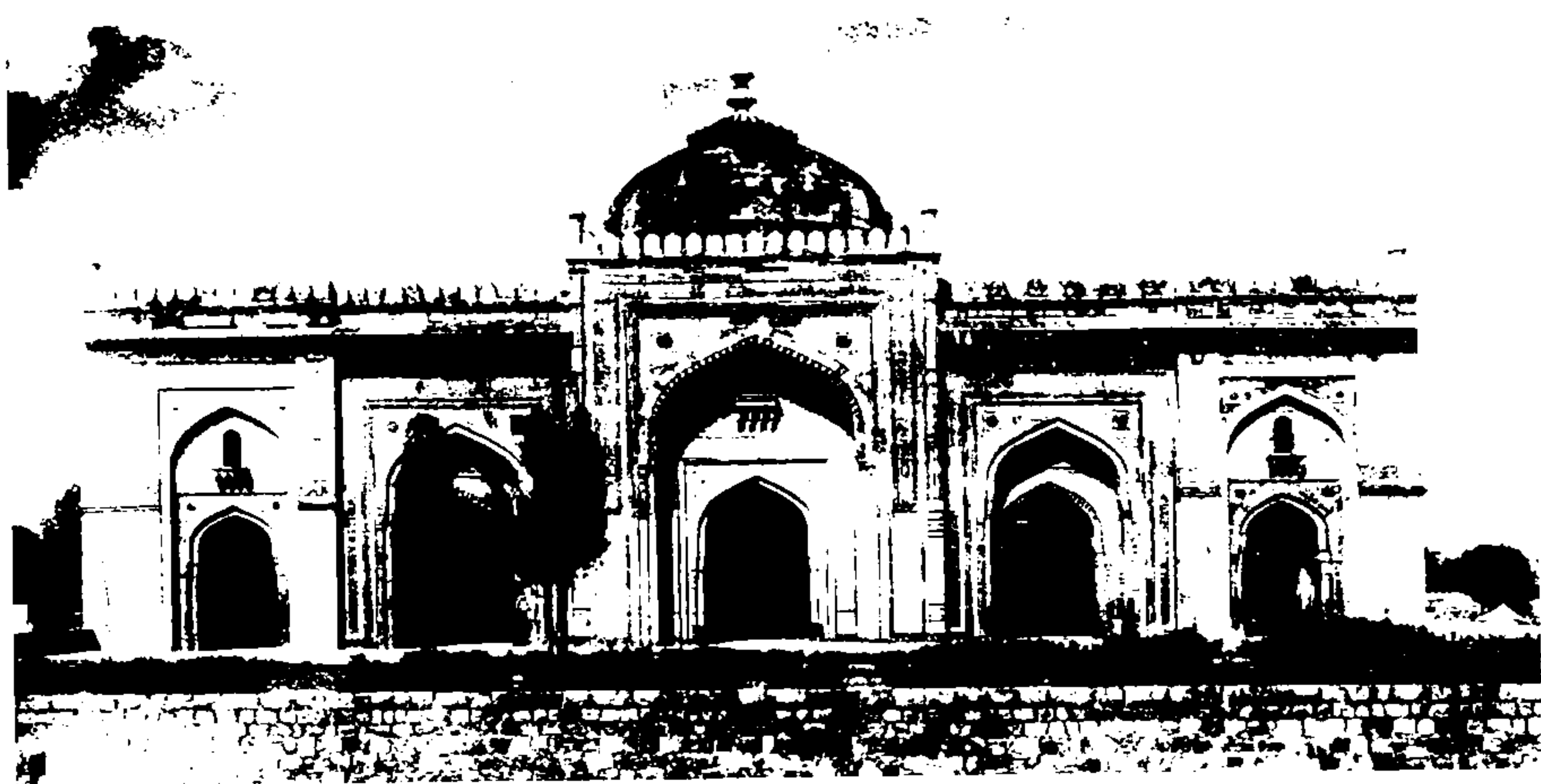
DELHI: Qāwwatū'l-Islām mosque; 1191



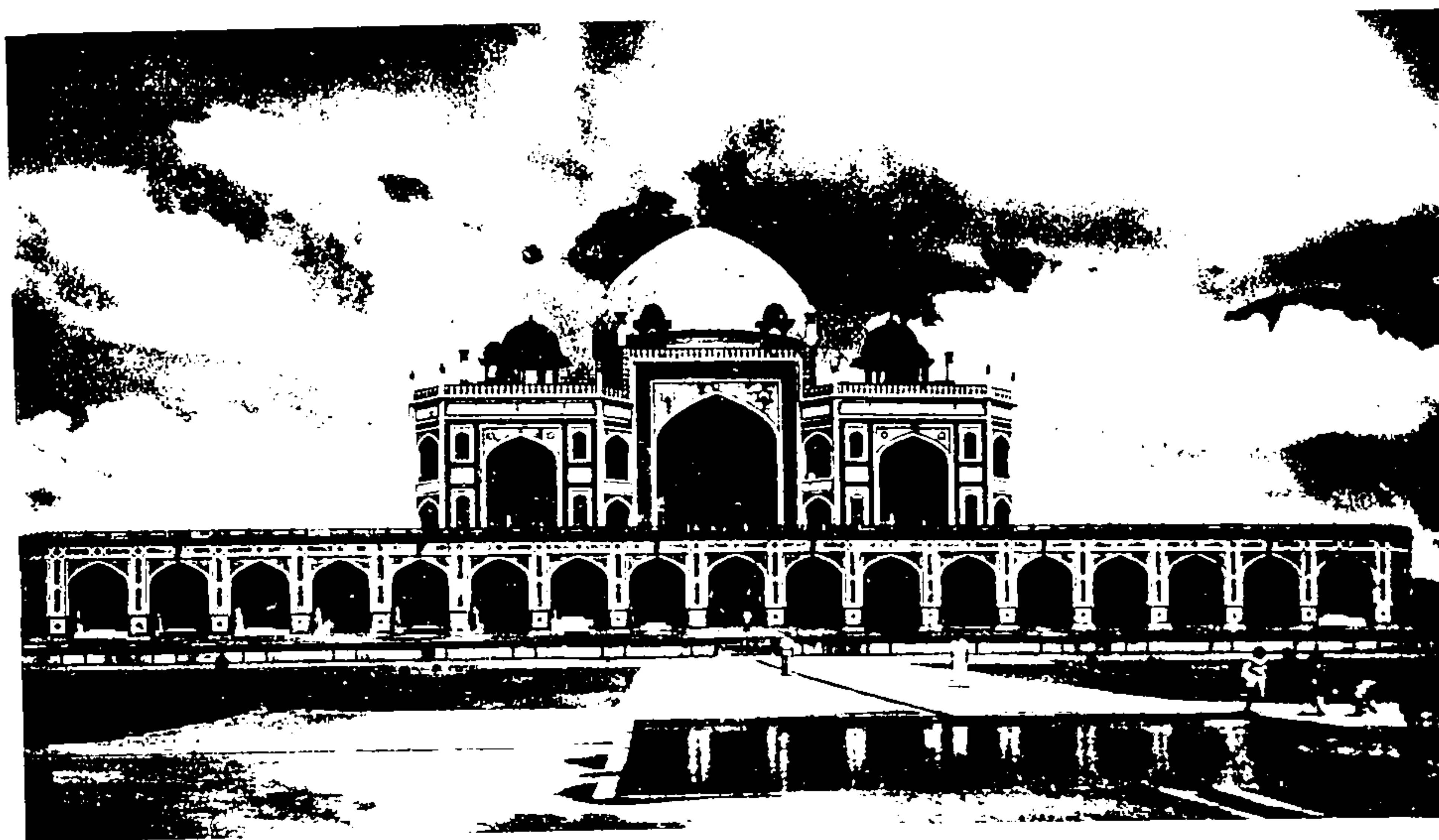
DELHI : ALAI DARWĀZA : EARLY FOURTEENTH CENTURY



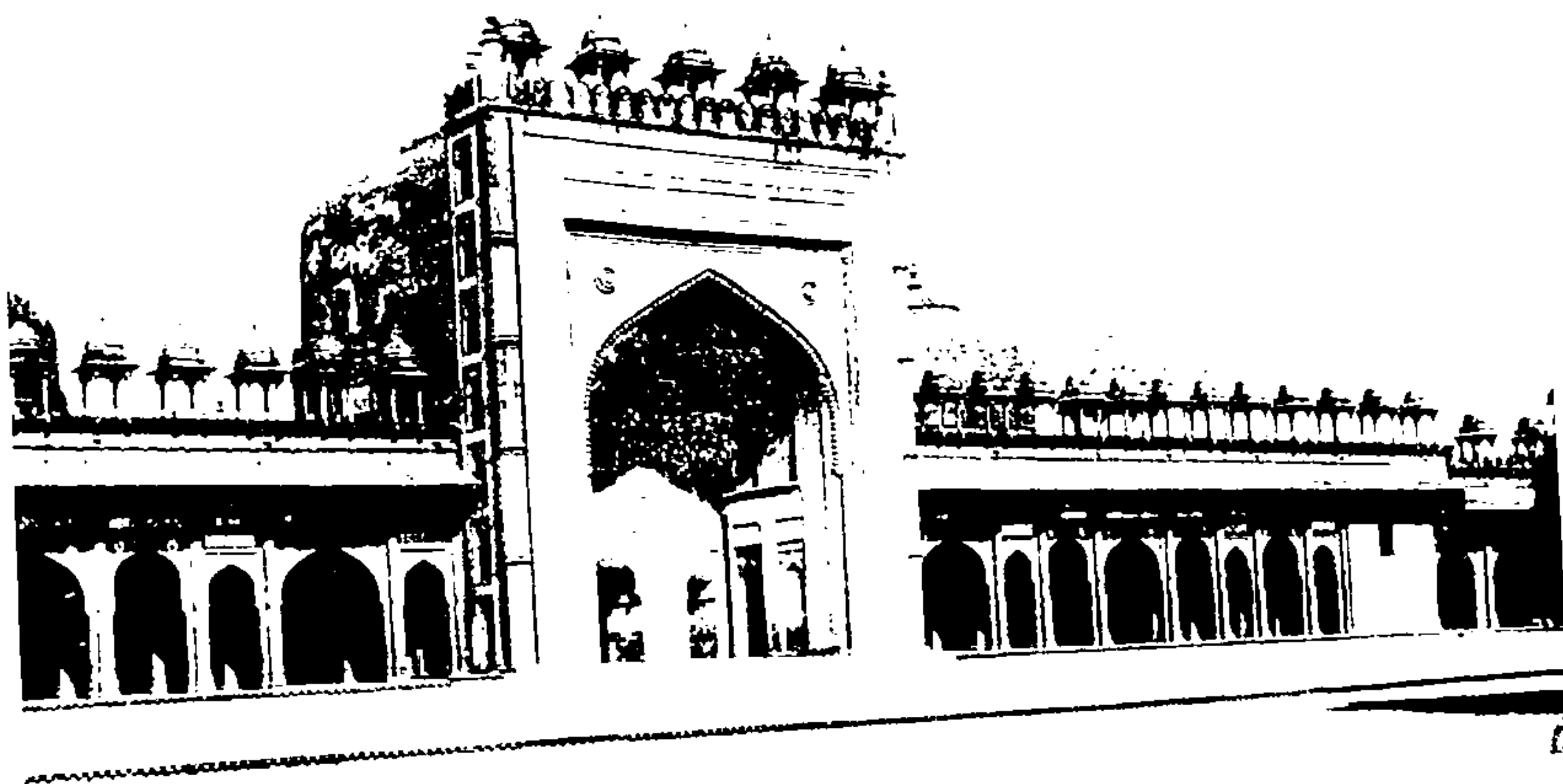
DELHI: TUGHLAQ TOMB; EARLY FOURTEENTH CENTURY



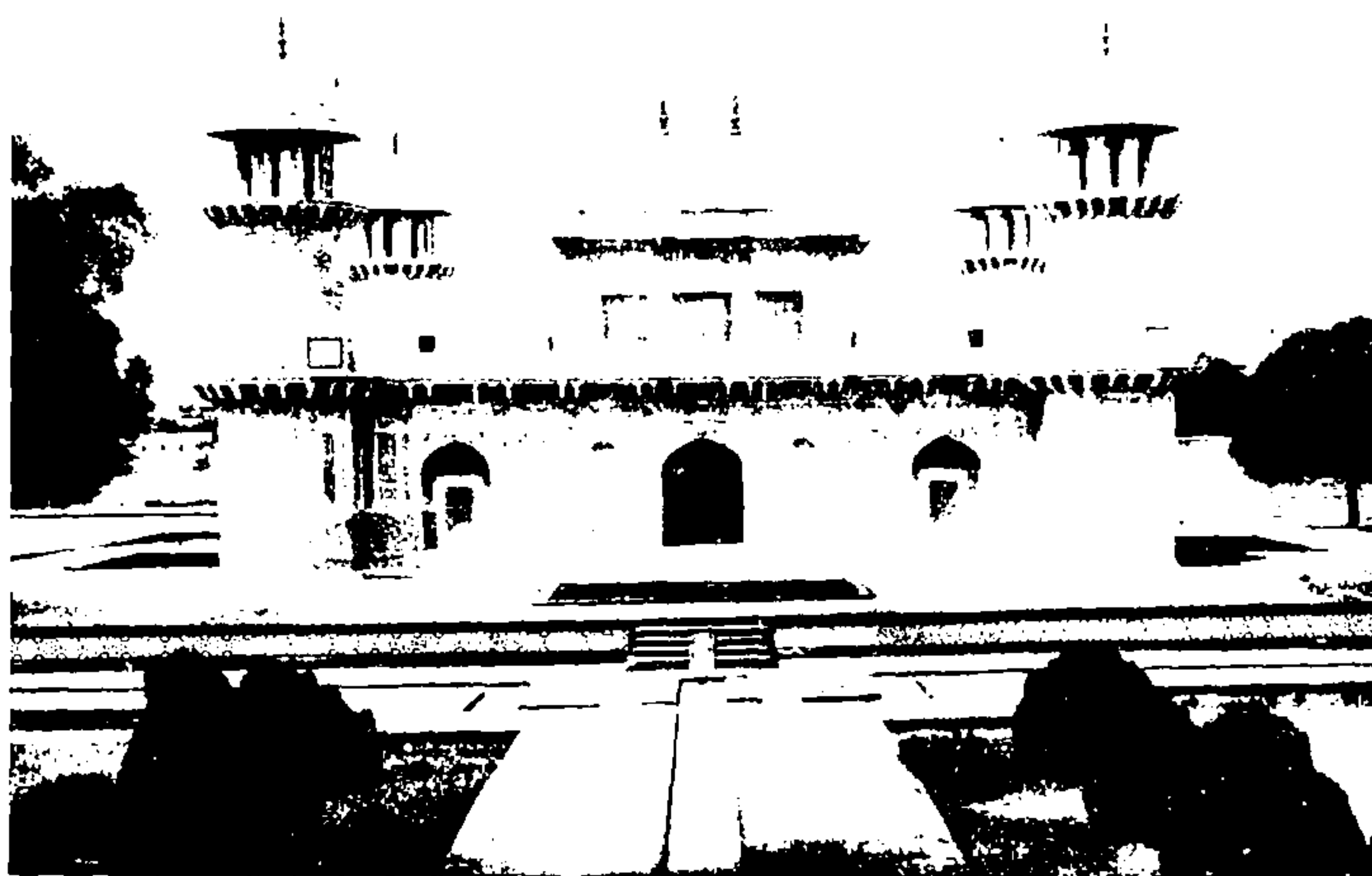
DELHI: MOSQUE OF SHER SHAH : 1541



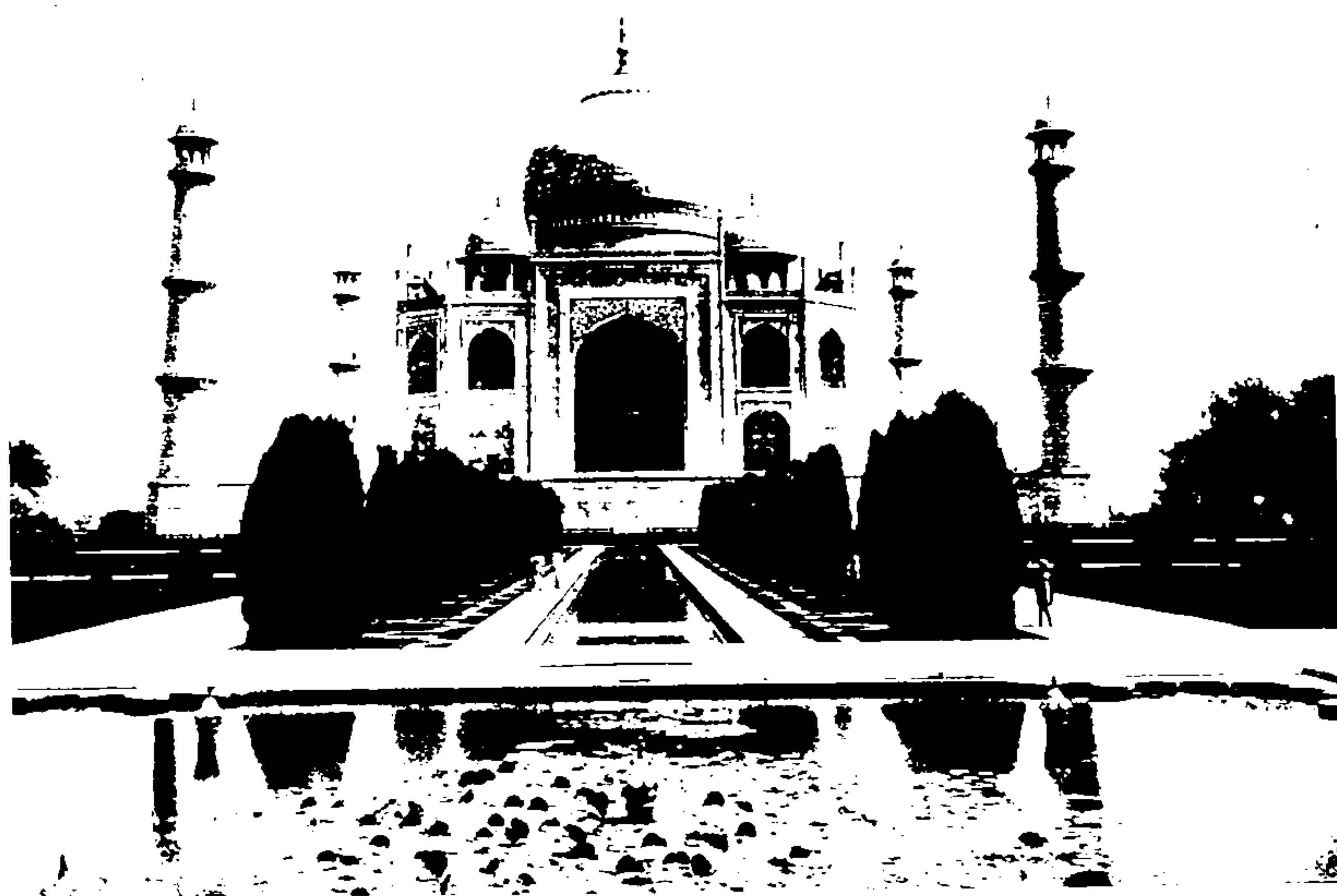
DELHI: TOMB OF HUMAYUN; 1561



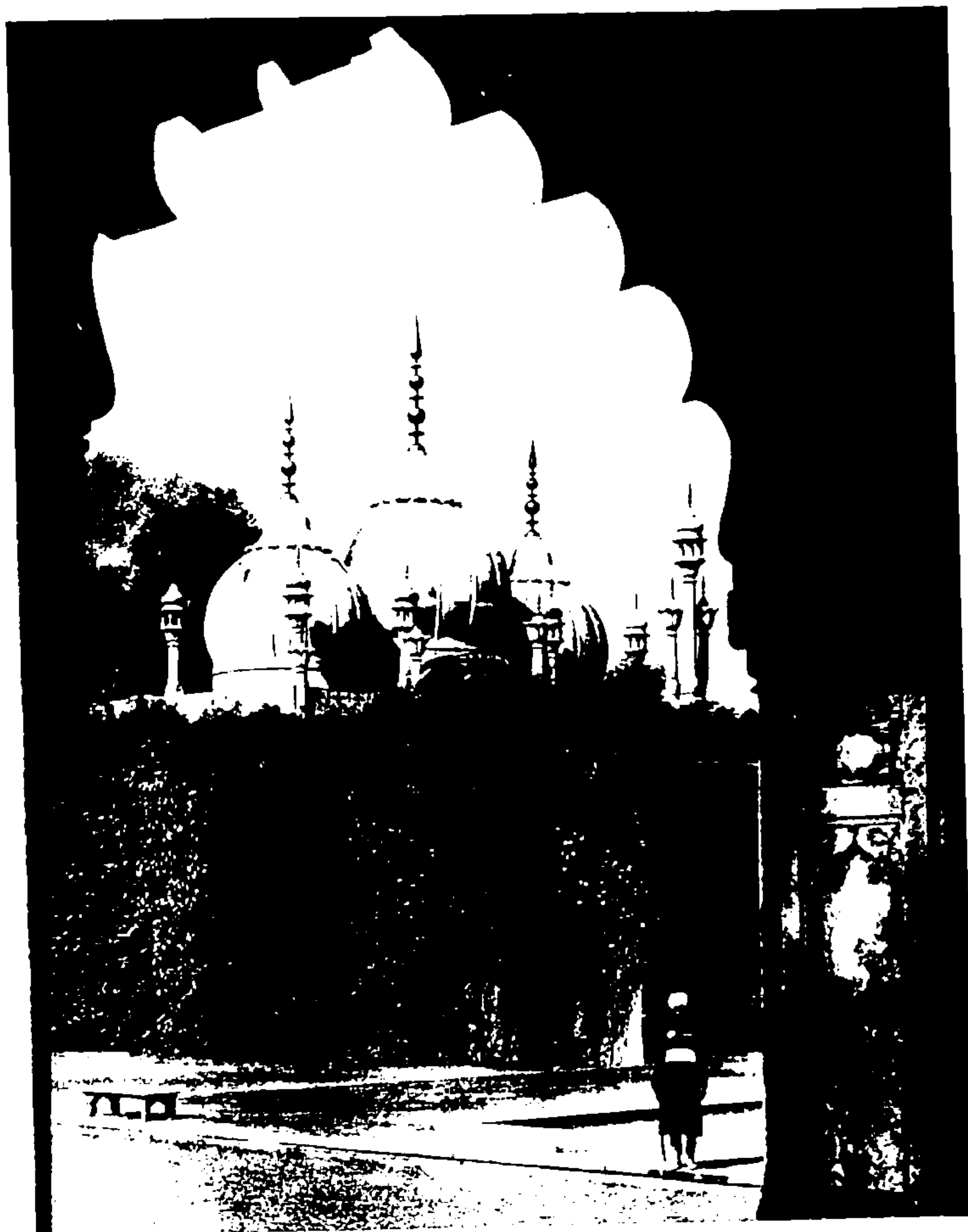
FATEHPUR SIKRI : JĀMI-MASJID : 1571-2



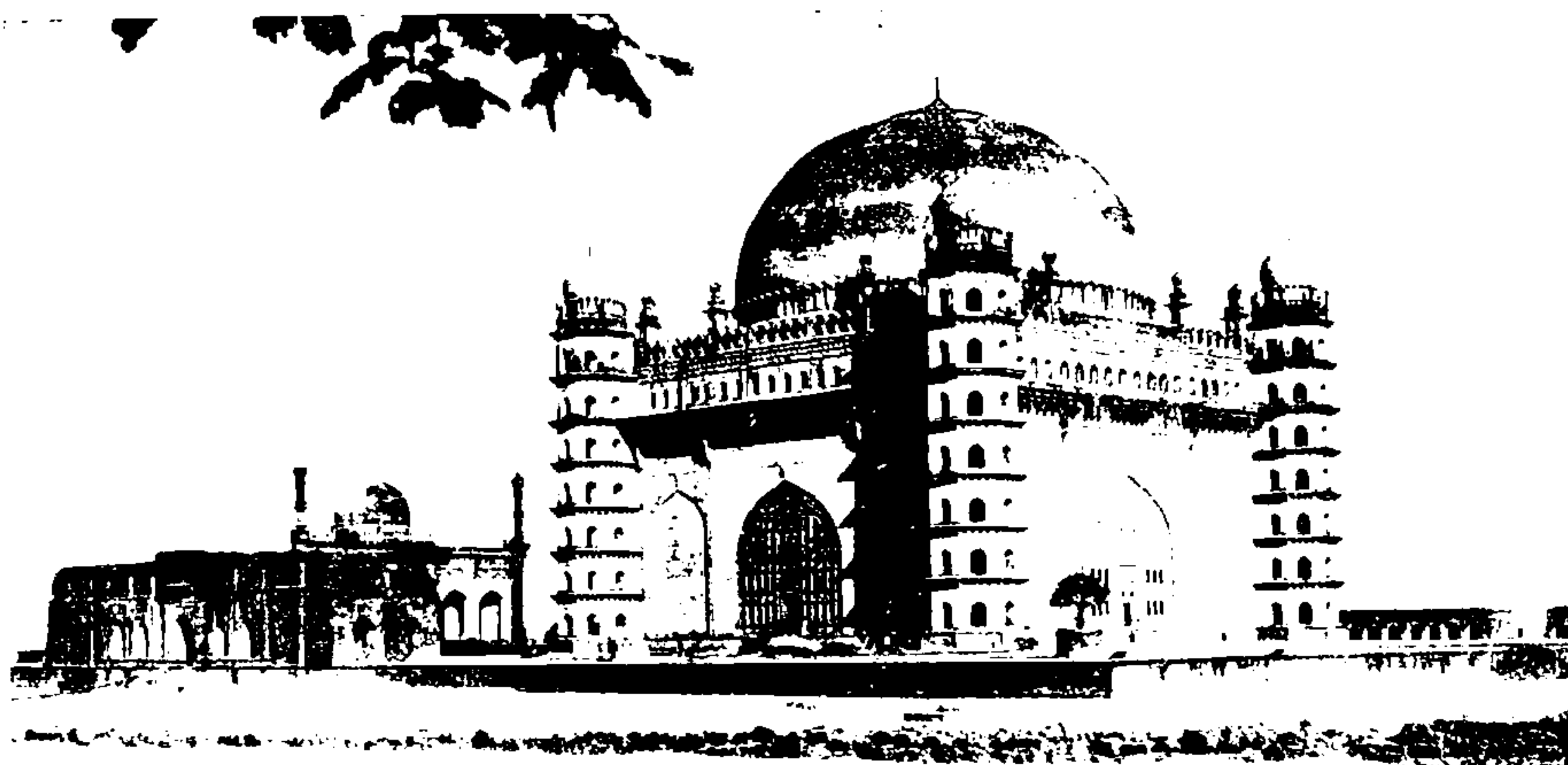
AGRA: TOMB OF ITIMĀD-UD-DĀULĀ . 1626



AGRA: TAJ MAHAL: 1631-53



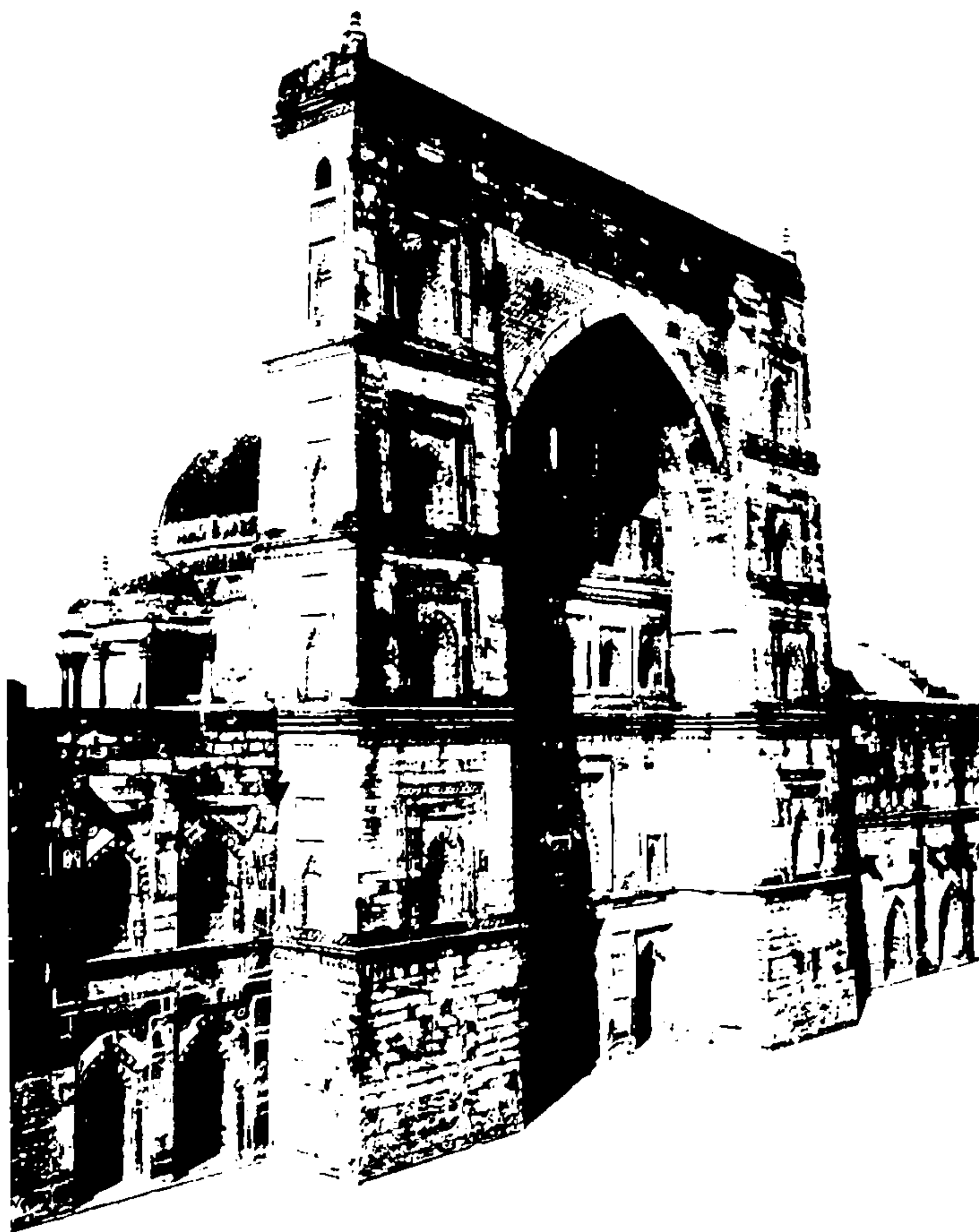
DELHI: MOTI MASJID, DELHI FORT ; LATE SEVENTEENTH CENTURY



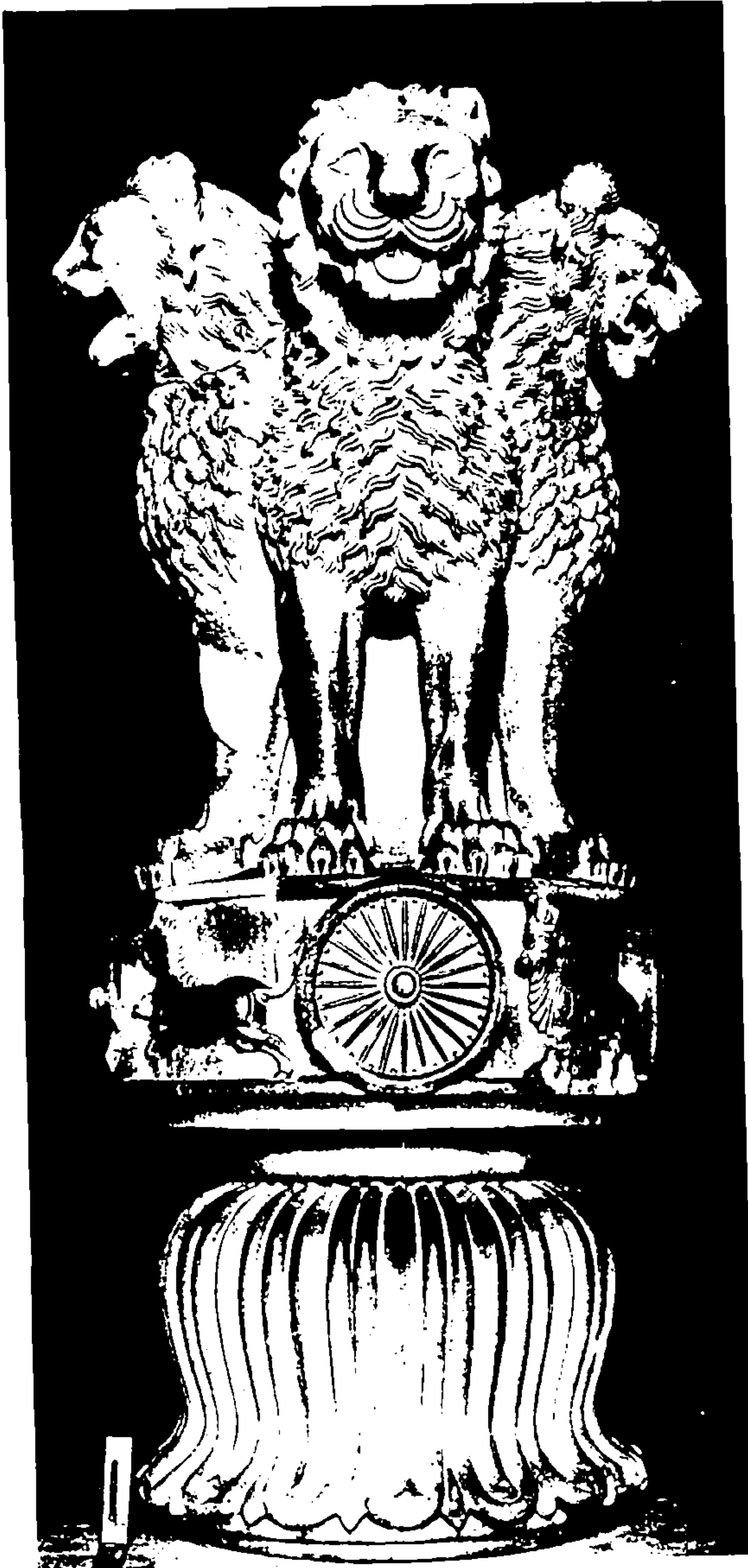
BIJAPUR: GOL GUMBAZ; LATE SEVENTEENTH CENTURY



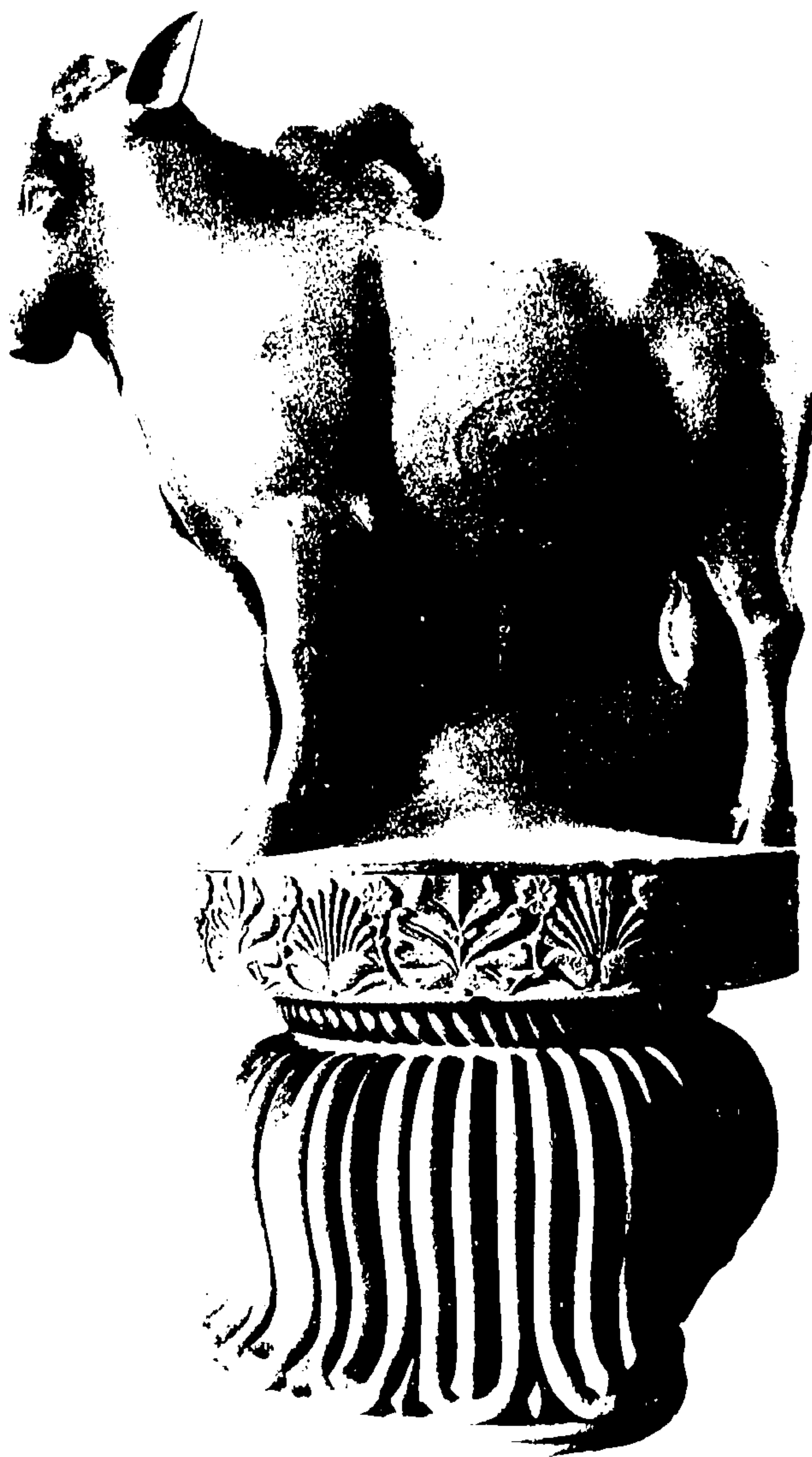
MANDU: MOSQUE OF MALIK MUGHIS, INTERIOR VIEW; 1152



JAUNPUR: JĀMI ' MASJID ; 1470



LION-CAPITAL (SANDSTONE), SARNATH ; THIRD CENTURY B.C.



BULL-CAPITAL (SANDSTONE). RAMPURWĀ, BIHAR; THIRD CENTURY B. C.



A. CHULUKORĀ DEVIATĀ ON SĒPA-RAILING (SANDSTONE), BHARHUT; SECOND CENTURY B.C.



B. DAMPATI IN CHAITYA CAVE, KARLE, POONA; FIRST CENTURY B.C.



C. WOMAN SPORTING WITH A PARROT ON A RAILING-PILLAR (RED SANDSTONE), MATHURĀ; SECOND CENTURY



MUSIC AND DANCE TO CELEBRATE BUDDHA'S DESCENT FROM HEAVEN AS A WHITE ELEPHANT (MARBLE, AMARAVATI, c. 200)



A. HEAD OF DIONYSIUS (STUCCO), GANDHĀRA; C. THIRD CENTURY



B. BODDHISATVA SEATED UNDER PALM-TREE, (RED SANDSTONE), MĀYŪRA; FIRST CENTURY



BUDDHA PREACHING HIS FIRST SERMON (SANDSTONE), NĀRSĀTH : C. FIFTH CENTURY



A. PANEL SHOWING THE SAGES NARA AND NĀRĀYAṆA (SANDSTONE),
DEOGARH, JHANSI; c. FIFTH CENTURY



B. VIṢṆU RESCUING THE LORD OF ELEPHANTS (SANDSTONE),
DEOGARH; c. FIFTH CENTURY



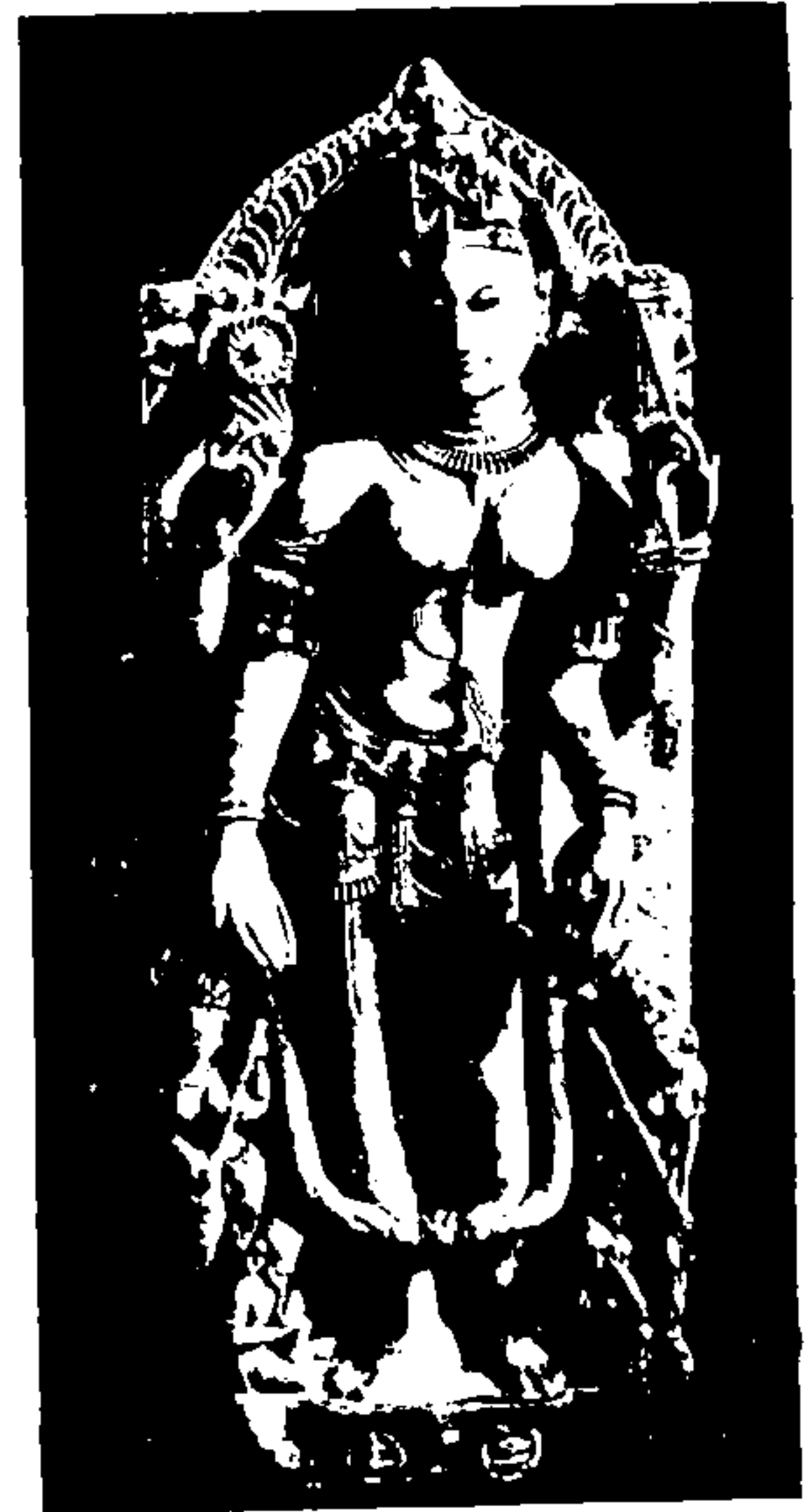
A. DURGĀ FIGHTING THE BUFFALO-DEMON, MAHĀBALIPURAM : SEVENTH CENTURY



B. MAHĀSAMŪRTI OF ŚIVA, ELEPHANTA : C. EIGHTH CENTURY



A. WOMAN WRITING A LOVE-LETTER (SANDSTONE). BHUVANESVAR,
ORISSA : ELEVENTH CENTURY



B. SARASVATI, GODDESS OF LEARNING
(MARBLE). BIKANER : C. THIRTEENTH CENTURY



A. ANCIENT MOTHER-GODDESS
(TERRACOTTA, MOHENJO-DARO: c.
2500 B.C.)



B. LAUGHING BOY (TERRACOTTA, PATNA :
c. THIRD CENTURY)



C. MITHUNA-FIGURE (TERRACOTTA,
AIHOLE-HATRA, BARLET - 200-100 B.C.)



A. HEAD OF PĀRVATĪ WITH SPIRAL HAIR (TERRACOTTA), AHICCHHATRĀ, BARĒLI :
c. FIFTH CENTURY



B. HEAD OF ŚIVA (TERRACOTTA), AHICCHHATRĀ,
BARĒLI : c. FIFTH CENTURY



ŚIVA NĀṬARĀJA (BRONZE), TIRUVALANGADU, CHITTOOR ; c. ELEVENTH CENTURY



A. RĀMA WIELDING THE BOW (BRONZE), VADAK-
RUPANIVAR, TANJORE ; EARLY ELEVENTH CENTURY



B. CHOLA QUEEN (BRONZE), CHINGLEPUT
DISTRICT ; TWELFTH CENTURY



C. CHOLA KING (BRONZE), CHINGLEPUT
DISTRICT ; TWELFTH CENTURY



A. PAINTING SHOWING VILHANA PROPITIATING CHAMPĀVATĪ, WESTERN INDIA :
SIXTEENTH CENTURY



B. PAINTING SHOWING CAMEL-FIGHT, MUGHAL : SEVENTEENTH CENTURY



A. PAINTING SHOWING RĀDHĀ AND KṚISHṆA, PAHĀRĪ;
EIGHTEENTH CENTURY



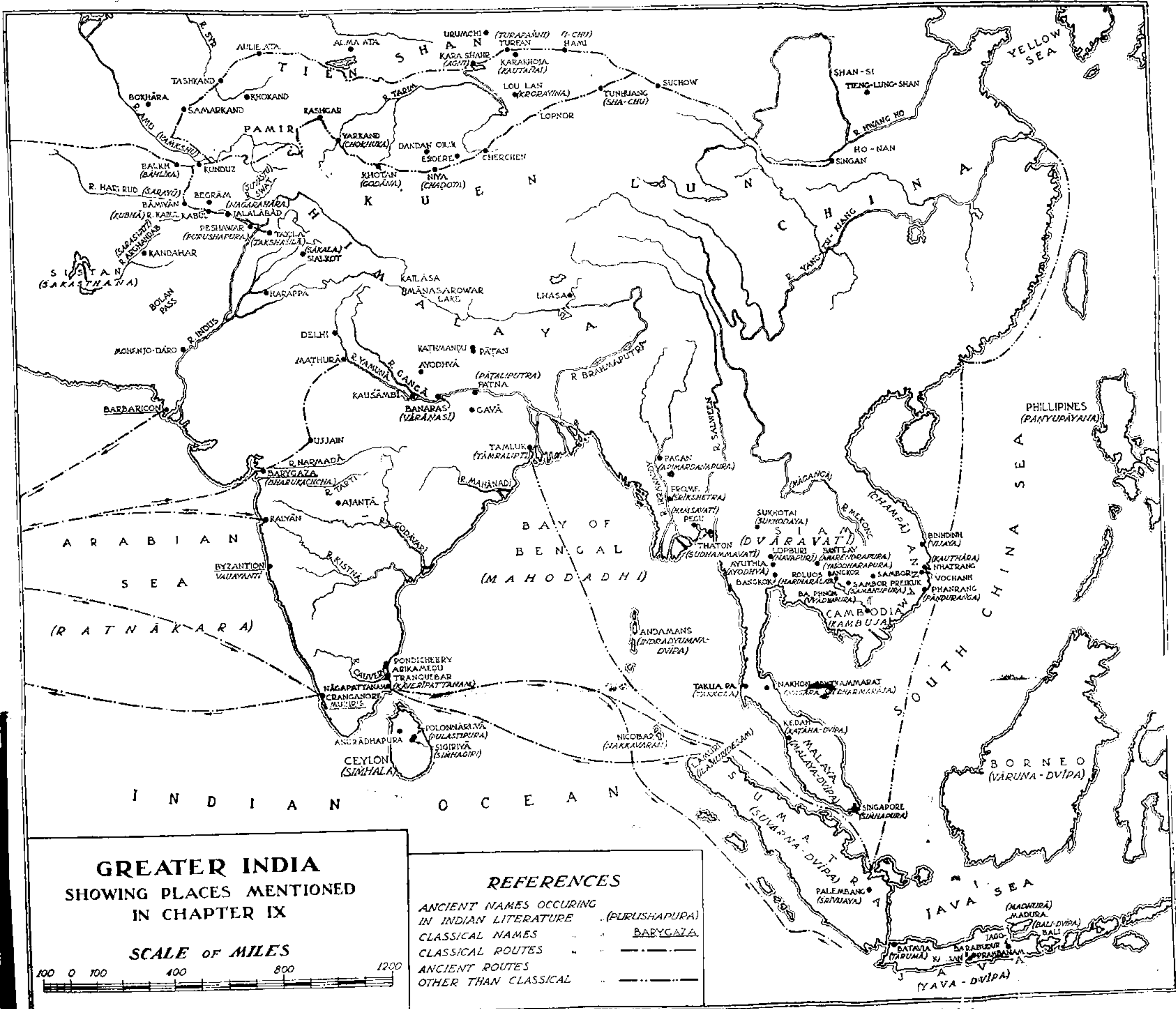
B. PAINTING SHOWING MEGHĀ-RĀGA, RĀJASTHĀNĪ;
SEVENTEENTH CENTURY

ॐ नमो भगवते वासुदेवाय
 ॐ नमो भगवते वासुदेवाय
 ॐ नमो भगवते वासुदेवाय

ॐ नमो भगवते वासुदेवाय
 ॐ नमो भगवते वासुदेवाय
 ॐ नमो भगवते वासुदेवाय

A TYPICAL COPPER-PLATE INSCRIPTION : TWO SIDES OF A ŚĪLAŚĀYANA RECORD OF THE FOURTH CENTURY. SCALE 1.5





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