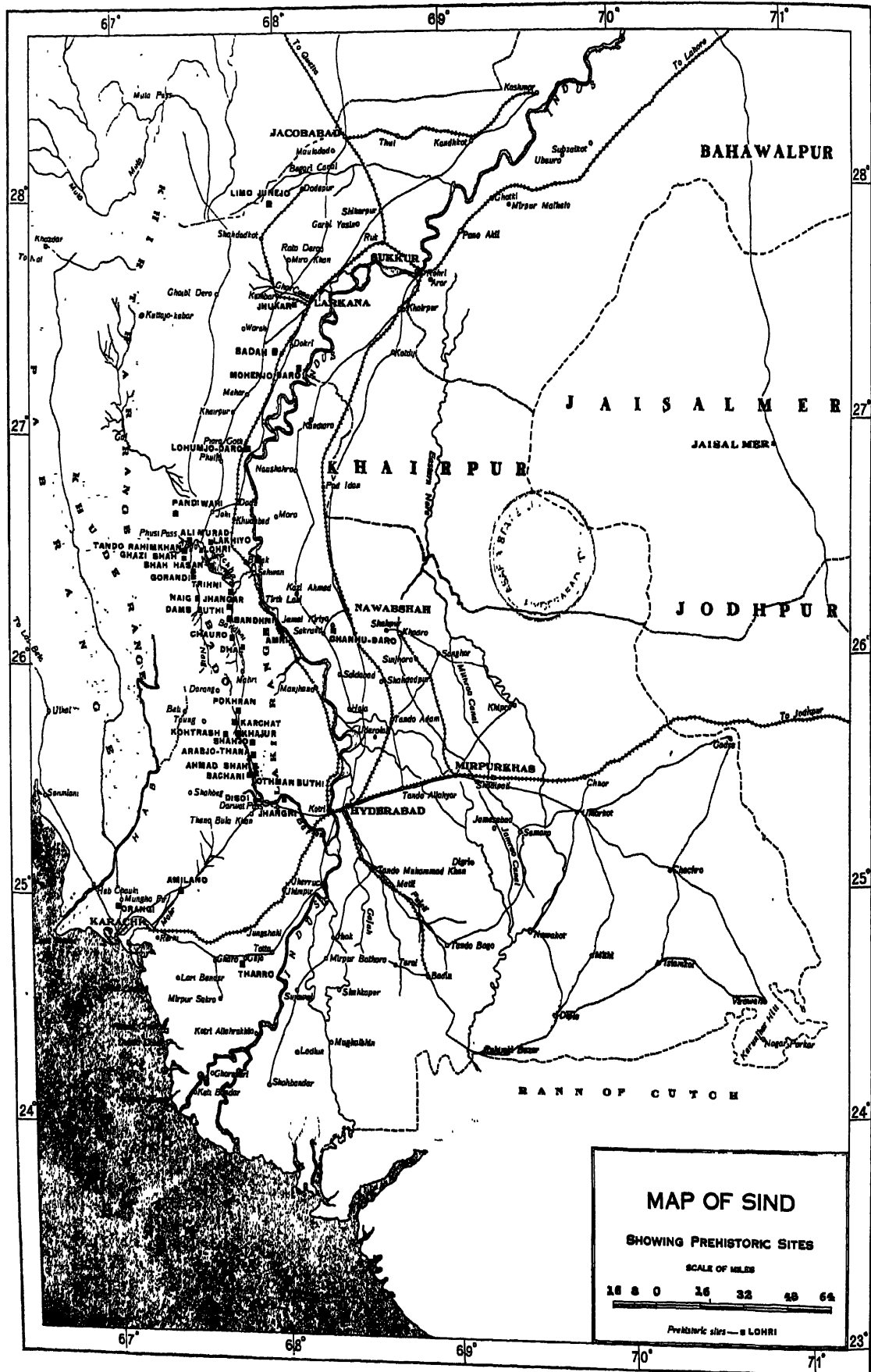




**Memoirs of the Archeological
Survey of India No. 48
Explorations In Sindh
(1934)**



N. C. Majumdar, M. A



MEMOIRS OF THE ARCHÆOLOGICAL SURVEY OF INDIA

No. 48

EXPLORATIONS IN SIND

Being a report of the exploratory survey carried out during
the years 1927-28, 1929-30 and 1930-31

BY

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PREFACE

The epoch-making discoveries at Mohenjo-daro in the Larkana District of Sind have directed the attention of archæologists all over the world to this comparatively unknown corner of India. The history of her civilization has been carried back at a stretch to at least the fourth millennium B.C., an antiquity that now entitles her for the first time to enter into partnership with Egypt, Persia and Mesopotamia, and those centres of early culture that sprang up in Crete and other islands of the Mediterranean. But Mohenjo-daro was not the only site of this period in the Indus valley. The chalcolithic civilization which it represents must have spread over a wide area, as proved by similar discoveries already made at Harappa¹ in the Montgomery District of the Punjab, at a distance of about four hundred miles from Mohenjo-daro. In Sind itself there must have been many more stations wedded to this culture, and indeed occasional reports about the existence of earthen mounds in various localities outside Mohenjo-daro raised hopes for fresh discoveries.

The need for a systematic survey of the Indus valley and its border lands was keenly felt by the Indian Archæological Department almost from the very beginning of its work at Mohenjo-daro. In 1925-26, at the suggestion of Sir John Marshall, the then Director General of Archæology in India, Mr. Hargreaves of the Archæological Department conducted excavations at Nal in the Kalat State of Baluchistan and explored a few other sites in its vicinity; and later, in 1926-27 and 1927-28, a survey of Northern and Southern Baluchistan was carried out by Sir Aurel Stein. These operations yielded splendid results,² showing the wide diffusion of the 'Indus Civilization' and at the same time bringing to light traces of allied cultures which could probably be affiliated, with certain reservations, to the Persian zone. But much spade-work was needed in the Indus valley itself without which a study of these materials would remain partial and incomplete. After his discovery of Mohenjo-daro in 1922, the late R. D. Banerji had collected, so far as he could, information about other probable sites in Sind, and supplied a list of them to the Archæological Department. But very likely he had no opportunity of examining any of these sites himself. In 1925, Mr. K. N. Dikshit, then Superintendent of the Archæological Survey, Western Circle, while carrying on excavations at Mohenjo-daro, examined two other chalcolithic sites, namely Lohumjo-daro in the Larkana District and

¹ D. R. Sahni, *Annual Progress Report of the Supdt., A. S., Hindu and Buddhist Monuments, Northern Circle*, 1921 (Lahore), especially pp. 12 ff.

² The results were published in *Mem. A. S. I.*, Nos. 35, 37 and 43.

Limo Junejo in the Upper Sind Frontier District. But further progress in pushing on this investigation could not be made owing to his transfer from Western India in 1926.

Having had the good fortune to participate in the excavations at Mohenjo-daro since 1925, under Sir John Marshall, Rai Bahadur Daya Ram Sahni and Dr. E. J. H. Mackay, I had gained sufficient familiarity with the remains of the 'Indus' civilization. In the cold weather of 1927, a grant placed by Sir John Marshall at my disposal enabled me to conduct excavations on a modest scale at the mounds of Jhukar near Larkana. During the following season, the duties at Mohenjo-daro having demanded my undivided attention, I could not resume the operations at Jhukar or proceed to any other fresh site. In 1928, Mr. Hargreaves was appointed Director General of Archaeology in India and in consultation with Sir John Marshall, he proposed to Government that I should explore the southern districts of Sind beginning with the deltaic region. After necessary sanction funds were allotted, and steps taken to get together the materials and equipage required for the survey. I left the headquarters of Simla towards the end of October, 1929, and set out soon after on a journey from Karachi, exploring and excavating as I went. Moving northward by gradual stages I reached Rohri towards the end of March, and in the following April returned to Simla, where the spoil of the season was inspected by Mr. Hargreaves and Sir Frank Noyce, then Secretary to the Education Department of the Government of India. Mr. Hargreaves, who was all along taking a keen interest in my exploratory work, wished that I should continue it also in the next cold weather. With great forethought he kindly made all necessary arrangements to facilitate my second journey which commenced from Dokri, the nearest Railway station to Mohenjo-daro, in October, 1930, and was concluded in April, 1931. These two journeys enabled me to examine a large number of sites, and an account of my exploration of these is narrated in the following pages. There remained, however, many areas still unsurveyed, and plans for a third journey for exploration were being considered on my return to Simla in the spring of 1931, but owing to acute financial stringency and my transfer to Bengal this could not be carried out.

My grateful thanks are due to the Commissioner in Sind, the Collectors of the various Districts and their subordinate officers, for the very useful assistance and co-operation rendered throughout my stay in Sind. I have also to record my deep sense of gratitude to Sir John Marshall for the valuable advice and kind encouragement I have all along received from him, to Mr. Hargreaves, but for whose active support my journeys would never have materialized, and to Rai Bahadur Daya Ram Sahni, the present Director General of Archaeology in India, who kindly provided necessary facilities for expediting this publication. I am grateful to Dr. Bains Prashad, Director, Zoological Survey of India and Dr. B. S. Guha, Anthropologist to the Survey, for having examined the animal and human remains collected by me from the various sites in Sind and contributed two notes thereon which are published as an Appendix. I am also obliged to Mr. K. N. Dikshit for having gone through my manuscript and favoured me with a number of

suggestions. For similar help my thanks are further due to Dr. P. Mitra of the Anthropology Department of the Calcutta University.

The Photographic Plates which accompany this Memoir are due to Babu M. N. Sen Gupta, and the sketches of sites to Babu Kashori Lal, both of whom worked with me in Sind. The Plate of Animal Remains has been prepared by Babu S. C. Mandal of the Zoological Survey; and the outline of the Map illustrating prehistoric sites has been drawn by Babu T. C. Chaudhuri of the Geological Survey and filled in by Babu A. Chatterji of the Archæological Survey, Eastern Circle. The drawings of pottery are due to Babu M. M. Dutta-Gupta of the Archæological Section, Indian Museum. The reproduction of all the Plates has been carried out by the Indian Photo-Engraving Company of Calcutta.

N. G. MAJUMDAR.

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ABBREVIATIONS FOR SITE NAMES

Ah	Ahmad Shah
Al	Ali Murad
Am	Amri
Amil	Amilano
Bc	.	.	.	.	.	.	.	Bachani
Bd	.	.	.	.	.	.	.	Badah
Bn	.	.	.	.	.	.	.	Bandhni
Ch	.	.	.	.	.	.	.	Chāñihu-daro
Cr	.	.	.	.	.	.	.	Chauro
Di	.	.	.	.	.	.	.	Disoi
Dl	.	.	.	.	.	.	.	Dhal .
Dm	.	.	.	.	.	.	.	Damb Buthi
Gr (a), (b)	.	.	.	.	.	.	.	Gorandi
Gs	.	.	.	.	.	.	.	Ghazi Shah Pir (Peyarejo-mari)
Jh	.	.	.	.	.	.	.	Jhangar (Kotiro mounds)
Jhan	.	.	.	.	.	.	.	Jhangri
Jk	.	.	.	.	.	.	.	Jhukar
Kar	.	.	.	.	.	.	.	Karachi (Orangi mound)
Kh	.	.	.	.	.	.	.	Khajur
Ko	.	.	.	.	.	.	.	Kohtras Buthi
Kr	.	.	.	.	.	.	.	Karchat (Masumjo Buthi)
Lh	.	.	.	.	.	.	.	Lohumjo-daro
Lk	.	.	.	.	.	.	.	Lakhiyo Pir
Lr	.	.	.	.	.	.	.	Lohri Pir
Ot	.	.	.	.	.	.	.	Othmanjo Buthi
Pl	.	.	.	.	.	.	.	Pokhran Landi
Pw	.	.	.	.	.	.	.	Pandi Wahi
Sh	.	.	.	.	.	.	.	Shah Hasan (Pir Mashak mound)
Sha	.	.	.	.	.	.	.	Shahjo-Kotiro
Ta	.	.	.	.	.	.	.	Tando Rahim Khan
Th	.	.	.	.	.	.	.	Tharro Hill
Tr	.	.	.	.	.	.	.	Trihni (Pir Lal Chhatto mound)

EXPLORATIONS IN SIND

CHAPTER I.—PHYSICAL ASPECTS AND CLIMATE OF SIND

Before proceeding to narrate my explorations in Sind, I should briefly give the reader an idea of the prominent topographical features of the country, and its climate.

The Indus.—If we could take an aerial view of Sind as a whole what would appear before us is a vast stretch of alluvial plain, undistinguishable from the rest of the country to its north and east, and across this plain the long and winding, silvery line of the river Indus.* Close to it on the west, there would be further visible patches of black representing the hill tracts, which continue southward until they fade away in the expanse of the Arabian Sea. The Indus, the *Sindhu* of the Rigveda, which has given the country its name and can be looked upon as its main artery, rises in inundation every summer like the Nile, and as the fertility of Egypt depends on that river, so also does the fertility of Sind depend on the Indus. The people owe to its grace whatever prosperity they have, and as there is no rainy season in Sind properly so called, they eagerly look forward to the advent of the season of inundation. But the floods, before they could be effectively harnessed, must have been a source of danger as well. It has been held that this factor, more than anything else, was largely responsible for the constant need of rebuilding and final abandonment of the city of Mohenjo-daro which sprang up on the bank of the Indus.

Divisions of Sind.—Geographically and geologically,¹ the province of Sind may be conveniently divided into two well-defined sections, Eastern and Western. Eastern Sind lies to the east of the Indus and west of Bahawalpur, Jodhpur and Jaisalmer States. It comprises the desert and deltaic regions included in the Districts of Sukkur, Nawabshah, Thar and Parkar, Hyderabad and Karachi and the Khairpur State. Western Sind is bounded on the east by the Indus, on the west partly by the lofty range of hills called the Khirthar and partly by the river Hab which falls into the Arabian Sea northwest of Cape Monze and on the north by the Bahawalpur State. This section comprises the District of Upper Sind Frontier, parts of Sukkur, the District of Larkana and most of the Talukas of the Karachi District. The province of Sind, including the

¹ See *Gazetteer of the Province of Sind*, 'B' Volumes; and 'A' Volume, 1907, pp. 16-29. For a comprehensive account of the geology of Western Sind, see Blanford, *Memoirs of the Geological Survey*, Vol. XVII, Part 1.

territory of the Mir of Khairpur, covers an area of some fifty-one thousand square miles, which according to native geographers has three divisions, *viz.*, *Siro* (Upper), *Vicholo* (Middle), and *Lār* (Lower). The vernacular term *Lār* denoting deltaic Sind seems to have been akin to the Sanskritic *Lāṭa*, the name applied to the rich alluvial country round the mouths of the Narmadā and the Tāpti in the neighbouring country of Gujarat.

Sukkur and Upper Sind Frontier.—As we enter the province from the Punjab we are in the midst of a desert—the *Registan* of Sind—where the hills of wind-blown sand, interspersed with shrubs such as *Salvadora* (*Khabar*), bear witness to the barren and uninhabitable nature of the country, although here and there, owing to irrigation, there may be seen green patches of cultivation. Lower down, the severe character of the general scenery is surprisingly relieved at Rohri and Sukkur, between which the Indus cuts a passage through a low range of white limestone hills. These, set against a background of palm groves and banian trees which fringe the banks for some distance, present a charming spectacle unequalled in the whole of Sind. At Sukkur, the Indus water is controlled by an extensive barrage system known as the Lloyd Barrage which discharges surplus water from its main head in various directions through a network of canals, recently excavated for the better irrigation of the lands of Lower Sind. To the north of Sukkur lies the tract known as Upper Sind Frontier, which is a perfect plain until it reaches the foot-hills of the Khirthar range. Between the ridges of this range there are valleys intersected by *Nāis* or hill-streams the chief of which is the Khenji Nāi separating Upper Sind from Larkana District.

Larkana.—As we pass on along the right bank of the Indus, through the fertile and rice-growing plains of Larkana, which to the local people is 'the Garden of Sind,' the pleasurable impression gained at Rohri and Sukkur is generally maintained. But there are dreary aspects as well. The District is bounded all along its west by the Khirthar, and a considerable portion of the country abutting on that range—the Talukas of Kambar, Kakar, Johi and Sehwan, is bleak, rugged and barren. This part is scoured by innumerable torrent-beds of which the most important is the Gaj Nāi coming from Jhalawan in Baluchistan. Cultivation, which is necessarily very limited in this area, depends chiefly on irrigation provided by damming the torrent-beds when there is a rush of water from the hills during the rains. Most of these beds become dry as soon as the rush of water subsides. But there are some which are spring-fed and maintain a flow of water throughout the year. To the latter class of perennial streams belong the Angai, Bandhni and the Naig which lie in the Johi and Sehwan Talukas. The water of these is utilised for irrigation, being carried off wherever necessary by means of channels. A feature of the Larkana District is the number of *Dhanda*s or lakes which are famous for fishing and duck-shooting. The largest of all is the Manchhar at the foot of the Khirthar. The water of the hill-torrents and the Western Nara canal, which now issues 8 miles east of Larkana, finds its way into the Manchhar and from there reaches the Indus by way of the Aral near Sehwan. This 'loop' of the

Indus, as it is often described, was formerly preferred by boats proceeding from Sehwan to Sukkur during the inundation, as in this tortuous course they could avoid the excessively strong current of the main stream. Besides the Western Nara there is another canal, the Ghar, which also appears to have been originally a natural channel, receiving a portion of the flood water of the Indus. It issues about 30 miles south of Sukkur, passes through the town of Larkana, and one of its branches finally meets the Dhamrao of the Western Nara system farther south. The richest soil in the District is that of the northern part which has the combined advantage of the waters of the Indus as well as of the Western Nara and the Ghar canals.

The hills of Western Sind.—The Khirthar, the most important range of Sind, which is mainly composed of nummulitic limestone, is about 150 miles long. Commencing in Upper Sind Frontier, it forms the western boundary of the province up to Sehwan. Opposite Sehwan it turns more to the east, finally terminating near Karchat in the *Kohistan* of Karachi. A length of about 120 miles of the Khirthar lies in the Larkana District. The highest parts of the range are to the west of Larkana and Mehar, reaching an altitude of 4,000 to 5,000 ft. at places; but in the south it gradually slopes away. Of the minor ranges the most prominent is the Laki, which begins at Bhagotoro near Sehwan and extends southward for about 80 miles up to the vicinity of Thanu Bula Khan, the headquarters of the *Kohistan* Mahal of Karachi. Between the two chains of hills the country is occupied by the flanking ranges of the Khirthar. But these are much smaller in height, of which the Bado and the Bhit deserve special mention.

The Karachi 'Kohistan'.—Towards the south, the Larkana District gradually narrows down in breadth as it approaches the *Kohistan* section of Karachi. Hemmed in by the Laki and the Indus on the east and the Bado and the Khirthar on the west, the latter District is divided into two prongs. The part of Karachi that falls in Western Sind is watered by the Indus, the Hab coming from the Baluchistan hills, the Baran and the Malir, and a number of other hill-streams the most important of which is the Sann. The *Kohistan* or the Hill Section, comprising principally the *Kohistan* Mahal and the Talukas of Kotri and Karachi, presents a great contrast to the deltaic formation to the south of Tatta and south-east of Karachi. It is a unit by itself, marked off from the rest of the country by a number of natural barriers: on the west, the Khirthar followed up by other minor ranges and by the Hab river which separates Sind from Baluchistan; on the east, the Laki range and its continuations running parallel to the Indus as far as Tatta; and on the south, the Arabian Sea. *Kohistan* has been aptly described as 'a succession of broad valleys lying between ranges of hills running generally north and south.' In these valleys cultivation is very much limited, being dependent on spring water and moderate rainfall. A better prospect of agriculture is afforded to the east and south-east of this area. South of Thanu Bula Khan, towards Karachi, the country is practically uncultivated and devoid of vegetation, degenerating into a stony and sandy waste marked by great scarcity of water.

Nawabshah, Hyderabad and Karachi.—Excepting the low range of hills of Rohri, which penetrate some distance into the neighbouring State of Khairpur, the ridge of Gunjo Takar on which Hyderabad is situated and the Karunjhar hills at the extreme south-east corner of the province at Nagar Parkar, there are no hills in Eastern Sind. The District of Nawabshah, which is in the middle of this vast plain, and the Khairpur State which lies to its north, include a portion of the great desert. The major part of Nawabshah and the whole of Hyderabad consists, however, of the alluvial plain of the Indus. The former is watered by the Indus, forming its western boundary, and by canals such as the Mehrab, Naulakhi, Nasrat, Dad, Dambhro and the Jamrao, some of these representing the natural outlets for the flood water of the Indus. The Hyderabad District, also bounded on the west by the Indus, is intersected by a net-work of canals. Of these the Fuleli, issuing from the Indus west of Hyderabad city, is the largest. In the eighteenth century, the main current of the river used to flow along its channel. The town of Hyderabad, situated between the Indus and the Fuleli, looks picturesque with its numerous flower and fruit gardens some of which are situated along the banks of the latter. The general level of the country in the north, as for instance, in the Hala Taluka, is considerably high, and the irrigation is here carried on to a large extent by lift instead of flow. The southern Talukas, which form part of the Delta, namely Guni, Tando Bago and Badin, are, however, irrigated by flow, and this low-lying and to some extent swampy region is well suited for the cultivation of rice. Badin and Guni together with the Jati, Shah Bandar, Sujawal and Mirpur Batoro Talukas of the Karachi District are characterised by an identical feature: in the south, salt waste with mangrove swamps and in the north, a fertile rice-growing country diversified in places by *Dhands* or lakes, and tamarisk, *Salvadora* and *Acacia*.

Thar and Parkar.—Thar and Parkar is the easternmost District of Sind, bordering on the Rann of Cutch. It is divided into two distinct portions by the Eastern Nara which represents one of the old beds of the Indus and according to some is the *Hakra* or 'the lost river'. To its east is the uninhabitable desert tract that merges in the great desert of Rajputana, and to its west a rich alluvial plain which bears testimony to the success achieved by man over the forces of Nature. Along the course of the Nara there is a dense jungle of tamarisk, *Kandi* and *Babul* trees. There are also a number of *Dhands*, the largest being the Makhi Dhand near Sanghar, reported to be about twelve miles in length and ten miles in breadth. The area under cultivation in this District, thanks to the Eastern Nara and the Jamrao Canal system, is gradually increasing every year, although about three fourths of the District are still nothing but a howling desert.

Climate of Sind.—The climate of Sind, which is included in the dry Afasian zone, is most uninviting, during the hot months, when heat, and swarms of sand-flies and mosquitoes make it an infernal region. The highest temperature recorded in shade is 126 degrees at Jacobabad in Upper Sind Frontier. The maximum temperature in the desert tracts of Thar and Parkar beyond

Mirpurkhas, in Larkana and the northern half of Nawabshah is practically the same, a little over or below 120 degrees. The heat is severest in May and June, especially during the *Chaliha*, when an intolerable hot wind loaded with dust and sand blows continually for 'forty days'. At Sukkur, the heat may be somewhat less due to the proximity of the river, and in Mirpurkhas and in the Nara valley it is not so oppressive. Hyderabad scarcely registers more than 110 degrees which in monsoon may fall to only 100. It gets a steady sea-breeze throughout the hot weather, and the houses remain cool on account of the breeze entering them through the roof ventilators with which they are mostly provided. A share of the sea-breeze also reaches northward as far as Nawabshah. In winter there is again severe cold, the temperature falling to 35 degrees at Larkana. But the climate of Sind during the cold months is dry and bracing on the whole. In the coast Talukas, which are more or less like Karachi, extremes of heat and cold are not in evidence, and these Talukas also receive more bountiful rainfall than their neighbours in the north. Upper Sind records only 2 to 3 inches of rain, whereas Lower Sind including Hyderabad and Kohistan, normally 7 to 8 inches.

CHAPTER II.—THE MOUNDS OF JHUKAR NEAR LARKANA

The site of Jhukar.¹—On the 2nd January, 1928, we left Mohenjo-daro² and proceeded to the mounds of Jhukar on the outskirts of the village of Mithodero, about six miles due west of Larkana. The site is easily accessible, as it lies on the road that leads from Larkana to the well-known village of Vaggan and is only about a mile and a half from the Station of Bero Chandio on the Larkana-Dodapur Branch of the North Western Railway. Compared to Mohenjo-daro this part of the country presents a dreary appearance, having neither the tall forest trees nor the exuberant vegetation which characterizes the landscape round about that site. The mounds of Jhukar lie in two distinct groups, separated by a distance of some 300 feet. The bigger one of the two, which rises to a height of 63 feet, is designated here as 'B'. The smaller one, the 'A' mound (Pl. II, *a*), is only 17 ft. in height. It has a flat appearance and stretches in a line more or less along the north side of the village path that passes between the two groups of mounds. A few Muhammadan tombs have been erected on it in recent times towards its eastern extremity. Mound B is circular in appearance, having a big depression in the middle and four openings in four directions. These probably mark the original entrances to the inner area, and the site may well have been that of a fortress. There is a solid square structure made of débris and beaten earth on this mound, having a platform on the top approached by a crudely built earthen stairway. This represents a Trigonometrical Station of the Survey of India, and is evidently a modern construction. R. D.

¹ For my preliminary account of the explorations at Jhukar, see *A. S. R.*, 1927-28, pp. 76-83. and Pls. XXVII-XXX.

² See Preface, p. ii.

Banerji, who visited the mound in 1918-19, reported that it 'most probably marks the site of an ancient *stūpa*.'¹ Later, he took steps to have it declared a 'protected' monument by the Government in 1921. His report, however, does not mention the smaller group of mounds at all, and it seems to have attracted in the past little attention.

Trial Pits.—A party of Brahui and Sindhi labourers had followed us from Mohenjo-daro to the Jhukar camp, and by local recruitment we obtained whatever additional strength was necessary for excavations. They were set to work on the very next day of our arrival, in two different batches, one at the base of Mound A and another at the base of Mound B. Before starting the operations it was hoped that the latter mound would reveal a number of prehistoric 'strata. Two pits were sunk to begin with, one in each of the mounds. The pit in B mound, quite contrary to our expectations, yielded nothing of importance. But in the other pit, at A mound, almost at the level of the surrounding plain and on the fringe of the mound, was discovered a broken spear-head (Pl. XLI, 35) of copper of the well-known leaf-shaped type as found at Mohenjo-daro. Further operations in this pit did not, however, yield a single other article which could be associated with the prehistoric culture. And even after two days' digging the prospect of discoveries at Mound A seemed as gloomy as ever, specially so in view of the earthen appearance of the mound and the absence of any débris in the excavated pit. It was then presumed that the copper implement, although an object of the early period, had in some way or other found its way there from Mound B by accident. We therefore decided to give Mound B a fair trial, this time confining our operations to the top of the mound instead of its base.

Sun-dried brick structures on Mound B.—Excavations on the top of Mound B brought to light the remains of buildings made of sun-dried bricks, covering a considerable area (Pl. II, b). Over fifty rooms of varying dimensions were cleared, and from these a large collection was made of pottery vessels, copper coins, inscribed sealings and other objects. Nothing prehistoric was, however, found. The floor levels of these rooms show a variation of about five to six feet, resting at places on a foundation of débris and at others on a solid filling of sun-dried bricks, or pure clay. In a 12 ft. wide trench that was driven 60 ft. into the core of the mound, a regular layer of sun-dried bricks was encountered. It rises about 16 ft. from the present ground level and lies below the floor of a number of rooms built of sun-dried bricks on the top of the mound. This stupendous filling was made probably to escape from floods to which the area must have been subjected from time to time. A masonry well was exposed on this mound at a level considerably lower than the floor of the rooms. It was built of burnt bricks laid vertically and horizontally in alternate courses. Digging was carried down inside this well to a depth of about 17 ft. from its mouth, in the course of which fragments of pottery vases with figures in relief were collected.

¹ *Progress Report of the Archaeological Survey, Western Circle, 1918-19, p. 58.*

THE MOUNDS OF JHUKAR



(b) MOUND B : EXCAVATED BUILDINGS OF SUNDRIED BRICKS.



(a) MOUND A, SHOWING POSITION OF A TRENCH.



Their date.—The dating of the buildings and their contents rests entirely on the evidence supplied by the coins and the inscribed sealings. Of the former about 250 were recovered in excavations, while quite a number of them were picked up occasionally also from the surface of the mound. A few of the coins are of the class represented by the thick round pieces issued by the Kushān king Vāsudeva and his successors. But the majority are small pieces, either round or rectangular, which belong to the type well known from the Stūpa Section of Mohenjo-daro. Elsewhere,¹ the date of these pieces has been discussed. But it would be useful to recapitulate briefly the evidence which helps us to determine their date. Most of the coins bear a crude nimbate figure (Pl. XIV, 7-10) wearing dress similar to that of the royal figures on the coins of the Later Kushāns. Such representation occurs on a coin illustrated by Cunningham,² having a legend in characters of about the fifth century A.D. Somewhat similar specimens, though uninscribed, are also known from Taxila and Jamalgarhi. Some of the Jhukar coins were found either in association with, or in close proximity to, terracotta sealings (Pl. XIV, 1-4) bearing inscriptions in characters of the Gupta period, probably not earlier than the fifth century A.D. Further light on the question of the date is thrown by a unique terracotta sealing (Pl. XIV, 6) found in a passage of the buildings laid bare on Mound B. It bears characters, which are evidently Pahlavi, and a male bust showing striking resemblance to that on some of the coins of the White Huns described by Cunningham³ and Marshall.⁴ The resemblance lies in the head-dress forming an angle on the forehead, the peculiar folds of the breast muscles, the profile bust turned to the right and the beardless face. As the White Hun coins belong to the 5th century A.D., this sealing should also be assigned to the same period. It may, therefore, be concluded that the houses on Mound B were erected in or about the fifth century A.D. That the settlement did not continue up to the Arab times is proved by the fact that not a single coin of the Arab rulers of Sind, like those from Bhambor and Bahmanabad, has been discovered at this site.

Antiquities from Mound B.—Of the objects recovered from Mound B, a few deserve special mention. The number of iron tools and weapons, which include knives, daggers, spear-heads, chisel, etc., shows that the houses could not possibly have formed part of any religious establishment. The most interesting of the finds is the pottery which shows four media of decoration, *viz.*, painting, glaze, incision and relief. In Sind painted pottery has a continuity of tradition unparalleled elsewhere. It is practised to-day⁵ and its occurrence as early as the Chalcolithic Age is well established. Evidence of its use in the Indo-Sassanian period now comes from Jhukar. The designs are generally floral in origin and show a great variety. They are painted in black

¹ See my note in *Mohenjo-daro*, Vol. I, pp. 127-130, and Pl. CLXIV.

² *Coins of Mediaeval India*, Pl. VI, fig. 1.

³ *Coins of Later Indo-Scythians*, 1894, Pl. 8, figs. 14, 15.

⁴ *A. S. R.*, 1915-16, Pl. XXVI, figs. 46-50, and p. 37.

⁵ Mackay, *Journal of the Royal Anthropological Institute*, Vol. LX, pp. 127-135, and Pls. I-II.

and red; but frequently in addition to these a selection of other colours, such as yellow, chocolate, pink and cream is also employed. Handled pots and flagons with spouts are rather common. The patterns on the vessels are disposed of in horizontal bands, and slip and wash are often used alternately. Painted flagons, to some extent resembling the Jhukar specimens, have been found by Sir Aurel Stein at Jiwanri in Makran.¹ Two glazed amphoras (Pl. XIII, 10), as well as fragments of numerous other glazed jars, were discovered at Jhukar. Samples of glazed ware are known from Bahmanabad, which cannot be earlier than the 8th century A.D., the date of the Arab occupation of Sind. About this time glazed pottery was much in vogue in Mesopotamia, as at Samarra (9th century).² It was also common in Central Asia, examples of which are in the Stein Collection at Delhi (e.g., Endere Fort No. 0020). The earliest piece in this Collection, which looks exactly like the glazed ware from Jhukar, is one from Lou-lan, probably dating from the 4th century A.D. (No. 007b). This class of pottery seems to occur first in Persia in Sassanian times, although glazed fabric itself can be traced to a much earlier date. In the 3rd century A.D., during the reign of Varhran II (276-93 A.D.), Sind was annexed along with Eastern Iran to the Sassanian kingdom. It is not unlikely that in this period glazed pottery of the style of Jhukar first began to be manufactured in Sind under Sassanian influence.³ Incised decoration is found on the interior of a group of saucers (Pl. XIV, 14, 15, 18, 19). The motifs comprise lotus, branches and other plant forms, and geometrical devices such as the *svastika*, triangles and concentric circles. None of these saucers is painted. In some of the designs the influence of Sassanian art is traceable. The design, for instance, on a saucer in Pl. XIV, 15 reminds us of the foliated pattern on the monuments at Taq-i-Bustan.⁴ As regards decoration in relief mention may be made of an open bowl with pimples all over the outer surface (Pl. XIII, 9), another vessel with female figures holding the lyre (Pl. XIII, 11) and a third showing a number of Buddha figures seated in the Preaching attitude (Pl. XIV, 26). The pimpled vessel is of special interest as it shows the survival down to historic times of a mode of decoration of which the earliest examples come from the chalcolithic strata of Mohenjo-daro.⁵ It is similar to the 'Barbotine' ware of Roman times,⁶ and such pimpled pots occur also as late as the 11th century A.D. in Nubia.⁷ In shape and mode of decoration the vessel with figures in relief is comparable to the one from Depar Ghangro near Bahmanabad described

¹ *Mem. A. S. I.*, No. 43, Pl. IX, e.g., Ji. III. xxxiii.

² R. L. Hobson, *A Guide to Islamic Pottery of the Near East*, 1932, pp. 2 ff.

³ Mackay found a kind of glazed pottery at Mohenjo-daro at the chalcolithic levels (*Mohenjo-daro*, Vol. II, pp. 581-82). But it appears to belong to a different class of ware altogether.

⁴ Cf. Sarre, *Die Kunst des Alten Persien*, Pl. 92.

⁵ *Mohenjo-daro*, Vol. I, p. 315. The 'Barbotine' decoration on pottery has been found also at Knossos. Evans observes, "This decoration was produced by roughening the walls of the vessel. These are sometimes worked up into a thorny surface resembling that of certain forms of crustacean, like a common Mediterranean crab or the shell of a sea urchin, and such natural objects doubtless supplied suggestions for it." *The Palace of Minos at Knossos*, Vol. I, p. 179.

⁶ *Mohenjo-daro* Vol. I, p. 316, and n. 2.

⁷ Firth, *Report of the Archaeological Survey of Nubia*, 1910-11, Pl. 29, fig. f. 2.

by Cousens.¹ The terracotta sealings referred to above fall into two classes, one belonging to private individuals and another issued as tokens or *ex voto* tablets for religious purposes. Of the latter class there are a number of sealings (Pl. XIV, 3) with the inscription *Srī-Karpari-Harasya*, i.e., 'of Hara (Śiva), the wearer of skulls', which shows that these tokens must have been used by the followers of Śaivism. The objects, as stated already, are referable to the 5th century A.D., and may be compared with those discovered at Bhita and other places in Upper India.

Three strata in Mound A.—Excavations on B mound kept us engaged up to the middle of February. According to the programme, thereafter we were to go back to Mohenjo-daro. Although the time at our disposal was short and much of the funds had been already exhausted, it was decided to hazard a little more probing into A mound before our departure. Only so much labour was therefore kept on as was absolutely necessary for this purpose. Forthwith three trenches were sunk at the mound: one was driven north to south, right through the heart of the mound (Pl. II, *a*), measuring 105'×10', a second along the side of the mound lengthwise (Pl. II, *d*), running east to west and measuring 145'×12', and a third trench parallel to it, outside the mound, in the alluvial land itself (Pl. II, *d*). These extensive cuttings revealed traces of three definite strata, superimposed one upon another. The objects that turned up at each one of these were accurately levelled to facilitate study. The latest settlement on the top of A yielded the same class of objects as those found on B, namely pottery, copper coins, inscribed sealings, etc. Moreover, on this mound examples of the sealing with the inscription *Srī-karpari-Harasya* were also found. It was therefore evident that the uppermost strata of A and B were contemporaneous. The surface layer of Mound A has vertically a depth of about 12'. Of the dwellings of this period nothing but a paving of burnt bricks and a few traces of sun-dried brick walls had survived. Reaching the middle stratum (Pl. II, *d*), a number of walls of burnt bricks were discovered, the bricks measuring 10", 10½" or 11" in length, 4¾" or 5" in breadth and 2½" or 2¾" in thickness. In these dimensions they correspond to the bricks used in the buildings of Mohenjo-daro. The bottom levels of the walls of the second stratum range between 12' and 18' from the top of the mound. Proceeding further down, that is below the alluvial plain, a few walls of the third period were brought to light. The bottom levels of these walls vary between 20' and 23', and the bricks used are of the same size as those of the stratum just above it. Excavations at the middle and the third strata (Pl. II, *c*) left no doubt as to their chalcolithic character, representing the same culture as that of Mohenjo-daro. These two strata are designated here as 'Early Jhukar' and 'Late Jhukar' respectively.

Potteries distinctive of 'Late Jhukar'.—The two chalcolithic strata that we came upon at Jhukar were distinguishable also by their respective potteries. Painted pots with decoration in black on dark red slip were characteristic of the Early level. The Late period developed a new technique: some parts of

¹ A. S. R., 1903-04, p. 138.

the design (*e.g.*, balls in compartments) are shown in dark red, and red or pink wash is substituted for the slip. Moreover, new motifs were used, the most typical being the 'sloping oval', 'balls in compartments' and 'the spiral'. Although some of the pieces with these patterns were found also below the Late level, their number was very much limited, and they were met with near about the region where the Early and the Late strata meet. Similarly, the objects of the Indo-Sassanian period representing the latest occupation of the site were often, at the farthest depth of the topmost layer, found mixed up with undoubted chalcolithic pottery and flint scrapers. Barring these stray cases of overlapping, the stratification of the objects of the individual layers was on the whole fairly clear. Another class of pottery, which could be localized amongst the Late deposits, was an unpainted ware with slanting incised strokes at the shoulder. These are different from the 'rope-markings' familiar to us from Mohenjo-daro and must have been punched by some sort of an instrument. Only three specimens of this kind of incised pottery are known from Mohenjo-daro (*viz.*, Hr 1172, Hr 5408 and Dk 4982). One of these (Dk 4982) is a complete pot which, in its incised decoration and fabric, is comparable to a fragmentary vessel from Jhukar illustrated in Pl. XXXV, 9. It should be noted that at Jhukar none of the examples of this class was found at the Early level. If Sir Aurel Stein is right, this class of pottery with identical incised strokes at the shoulder survived down to the historical period at a site called Spet-Bulandi near Mastung in Baluchistan.¹ Among other objects found in the Late deposits are the pointed-bottom and narrow-necked vases, all painted, shown in Pl. XVI, 16-19. No doubt they bear some resemblance in shape to a class of plain vessels from Mohenjo-daro and Harappa, but the latter have wider mouths and are scored at the shoulder. A big vessel (Jk 840), 2' 1" in height, found at this stratum is illustrated in Pl. XXXV, 13. It was evidently used for storage purposes. Lastly, mention may be made of a class of small terracotta blocks (Pl. XV, 19), none more than three inches long, pierced with a number of holes, which came from the Late level. These are unknown at Mohenjo-daro. The stratification of the Jhukar pottery will be further considered when I shall deal with the excavations carried out at Lohumjo-daro² in 1930-31. It would suffice here to say that the results recorded at Jhukar were fully corroborated by these later operations.

Objects other than pottery from Mound A.—Besides pottery vessels of household use, there turned up in the course of excavation, at the two strata, a variety of other objects (*see* 'Catalogue'). Among terracotta and pottery there were figurines of the humped bull, goat and the pig, and toys such as cart wheels, bird-chariot, bangles, bird-shaped whistles and miniature vessels. Two objects of uncertain use were found, namely triangular 'cakes' which are imperfectly fired, and small cones, both well known from Mohenjo-daro. There were also a few personal ornaments, such as discoid beads of white steatite, a faceted bead of the same material, a cylindrical bead of green felspar,

¹ *Mem. A. S. J.*, No. 43, p. 188, and Pl. XXXII, S. Bul. IV. 2.

² *See below*, p. 51.

another cylindrical bead of lapis lazuli and a barrelled bead of green jasper. A polisher of chert which might have been used for polishing jewels was also found. Among implements there were a large number of chert flakes and cores, and also an arrow-head and a spear-head of copper. But the most important of all the finds was a square seal of steatite, bearing a figure of the so-called 'unicorn' and a line of pictographic characters, similar in every description to the hundreds of such seals discovered at Mohenjo-daro and Harappa. The discovery of this seal particularly, which came from the Early deposits in the trench sunk below the plain, near about the water level, left no doubt as to the antiquity of the Jhukar site.

A Catalogue of the principal objects from Jhukar

- I. MOUND A, 'LOWER PREHISTORIC LEVEL' (ABOUT —18·5' TO ABOUT —25').
- Jk 512 Seventy-four painted potsherds with designs in black on dark red slip; plant with broad, pointed leaves filled in by hatching, and tendrils, Pl. XV, 21; also bird-heads, Pl. XV, 27; and creeper, Pl. XV, 34.
- Jk 531 Painted potsherd; design in black on dark red slip; a motif resembling 'double axe' filled in by cross-lines, and a series of ovals. Pl. XV, 26.
- Jk 600 Painted potsherd; design in black on dark red slip; a continuous line of rectangles with incurved sides.
- Jk 661 Painted potsherd; design in black on red slip; plant with conical leaves filled in by hatching.
- Jk 649 Painted potsherd; design in black on dark red slip; bird with body filled in by hatching surrounded by wavy broken up lines; also a circle within a circle, centre marked by a dot. Pl. XV, 23.
- Jk 664 Neck of painted vase; design in black on red slip; a series of biconical hatched leaves in a band; below, in two compartments, biconical leaves and flowers respectively. Pl. XV, 29.
- Jk 665 Six painted potsherds; design in black on dark red slip; two pieces with comb-like branches,¹ Pl. XV, 22. On the rest: stepped parallel lines; continuous line of rectangles with incurved sides; tree with branches in wavy lines; and a circle within a circle having centre marked by a dot, and conical leaf.
- Jk 712 Two painted potsherds; design in black on dark red slip; a continuous line of rectangles with incurved sides.
- Jk 713 Painted potsherd; design in black on dark red slip; a line of rectangles with incurved sides.
- Jk 713 Neck of painted vase; design in black on dark red slip. parallel wavy lines intersected at intervals by vertical lines.
- Jk 513 Terracotta animal figurine; head and legs missing. Pl. XXI, 9.

¹ It occurs also on Sistan pottery.—F. H. Andrews, *Burlington Magazine*, December, 1925, fig. 72. That it represents the branch of a tree will appear on comparison with Pl. XXVI, 13.

- Jk 513 Terracotta animal figurine, probably a pig; L. 1.9". Pl. XXI, 8.
- Jk 513 Terracotta figurine of goat; legs missing; L. 1.4". Pl. XXI, 13.
- Jk 804 Terracotta bull figurine with slight indication of hump; horns missing; L. 2.3". Pl. XXI, 11.
- Jk 513 Terracotta humped bull figurine; horns missing; L. 3.3". Pl. XXI, 12.
- Jk 513 Terracotta bull figurine; it had a loose movable head¹ fitted, which is missing; L. about 3". Pl. XXI, 10.
- Jk 543 Two bird-shaped terracotta whistles; L. 2.4" each. Pl. XXI, 15.
- Jk 582 Terracotta bull figurine with slight indication of hump; horns missing; L. 3.2". Pl. XXI, 14.
- Jk 574 Two terracotta toy-cart wheels; diam. 3.25" each. Pl. XV, 12.
- Jk 576 Miniature pottery lid with traces of chocolate paint; diam. 2.65". Pl. XV, 11.
- Jk 578 Miniature pottery bangle; diam. 2.45".
- Jk 682 Miniature pottery bangle; diam. 2.5". Pl. XV, 15.
- Jk 660 Terracotta ring; diam. 1.45".
- Jk 564 Terracotta net-sinker; diam. 1". Pl. XV, 1.
- Jk 641 Terracotta net-sinker; diam. 1".
- Jk 662 Terracotta net-sinker; diam. 1.16".
- Jk 541 Model cake; terracotta; triangular; max. L. 2.5". Pl. XV, 16.
- Jk 541 Model cake; terracotta; triangular; max. L. 3.1". Pl. XV, 17.
- Jk 521 Terracotta cone; L. 2.6". Pl. XVII, 11.
- Jk 559 Terracotta cone; L. 2.7". Pl. XVII, 10.
- Jk 604 Terracotta; pot-bellied human figurine; ht. 2.9". Pl. XV, 18.
- Jk 709 Oval-shaped concave terracotta, resembling mother-of-pearl valve, with a hole at edge;² max. L. 3.5". Pl. XV, 13.
- Jk 710 Solid cylindrical terracotta resembling a pestle; L. 3.15"; diam. 1.2". Pl. XV, 14.
- Jk 714 Miniature pottery vase; ht. 1.35". Pl. XV, 2.
- Jk 655 Miniature pottery vase with flanged neck; four red bands painted below neck; ht. 1.9". Pl. XV, 4.
- Jk 653 Miniature pottery vase; ht. 1.8". Pl. XV, 3.
- Jk 659 Miniature pottery vase with pointed bottom; ht. 2". Pl. XV, 5.
- Jk 639 Miniature pottery vase with traces of cream slip; ht. 2.7". Pl. XV, 10.
- Jk 580 Miniature pottery vase; ht. 2.1". Pl. XV, 9.
- Jk 656 Miniature pottery vase; cylindrical and flat-based; ht. 2".
- Jk 579 Miniature pottery vase; cylindrical and flat-based; ht. 2.9". Pl. XV, 8.
- Jk 640 Miniature pottery vase of jug-shape; chocolate slip on outer surface and traces of it also on the inner side near the neck, probably the result of dipping the vase in paint; ht. 2.25". Pl. XV, 6.

¹ Cf. *Mohenjo-daro*, Vol. III, Pl. CLIII, fig. 39.

² Similar specimens are known from Mohenjo-daro. There is also an example in copper from that site, which is likewise pierced with a hole (Hr 5627).

- Jk 658 Miniature pottery cup; cream paint on chocolate slip; ht. 2.25"; diam. 2.55". Pl. XV, 7.
- Jk 529 Steatite seal with figure of 'unicorn' and a line of pictographs; white; .9"×.9"×.35". Pl. XVII, 1.
- Jk 557 Steatite bead; discoid; thin; white; diam. .3". Pl. XVII, 2.
- Jk 644 Steatite beads; discoid; thin; white; diam. varying between .35" and .55". Pl. XVII, 3, 5, 6.
- Jk 602 Steatite bead; faceted; square in section. Pl. XVII, 4.
- Jk 584 Green felspar bead; cylindrical; L. .4"; diam. .25". Pl. XVII, 7.
- Jk 663 Jasperbead; green with red and white specks; barrelled shape; L. 1.15"; max. diam. .35". Pl. XVII, 8.
- Jk 553 Lapis lazuli bead; cylindrical; no pyrites; L. .7"; diam. .25". Pl. XVII, 9.
- Jk 632 Flint bead; round; grey; diam. 1.2".
- Jk 569 Ivory pin fragment; chocolate colour. Pl. XIX, 9.
- Jk 676 Chert core; brown; L. 1.35". Pl. XIX, 7.
- Jk 556 Chert core; grey; L. 2.15". Pl. XIX, 10.
- Jk 652 Chert flake; brown; L. 2.35". Pl. XIX, 3.
- Jk 575 Chert flake; brown; L. 3.5". Pl. XIX, 2.
- Jk 650 Copper arrow-head; L. .85". Pl. XLI, 21.

II. MOUND A, 'UPPER PREHISTORIC LEVEL' (ABOUT -12' TO -18').

- Jk 284 Painted potsherd; sloping biconical leaf in black on cream slip. Pl. XV, 30.
- Jk 622 Painted potsherd; triangles with incurved sides in semicircular compartments in black on cream slip; interior of triangles filled in with cross-lines.
- Jk 493 Painted potsherd; continuous line of rectangles with incurved sides, separated from one another by circle within circle, in black on dark red slip. Pl. XV, 33.
- Jk 108 Painted potsherd; conical leaves in black, and balls in compartments in red on pink slip.
- Jk 622 Painted potsherd; cross-hatched triangles with incurved sides and oval leaves in black on cream slip. Pl. XVI, 20.
- Jk 481 Painted potsherd; red balls within compartments in black on red wash.
- Jk 468 Neck of painted vase; continuous line of rectangles filled in by cross-lines, with incurved sides, separated from one another by circle within circle; design in black on light red slip.
- Jk 376 Painted potsherd; conical leaves in black on red slip.
- Jk 343 Painted potsherd; hatched biconical leaves in black on red slip. Pl. XV, 28.
- Jk 502 Painted potsherd; a horizontal row of vertical strokes in black on cream slip.

- Jk 605 Two painted potsherds; flower and biconical leaf in the upper band, and hanging spirals¹ in the lower; design in black on dark red slip. Pl. XV, 32.
- Jk 381 Painted potsherd; zigzag horizontal lines intersected at intervals by verticals, in black on dark red slip. From —10·41'.
- Jk 685 Painted potsherd; rectangles with incurved sides, interior filled in by cross-lines, in black on dark red slip. Pl. XVI, 21.
- Jk 262 Painted potsherd; tree with branches hanging down, interior of branches filled in by hatching, in black on dark red slip. From —7'. Pl. XV, 31.
- Jk 667 Painted potsherd; continuous line of rectangles with incurved sides forming oval figures against each side, having a thick stroke in each compartment; design in black on dark red slip. Pl. XV, 25.
- Jk 515 Painted toy bird with horns of a ram, side pierced with a hole for fixing it on to a pair of wheels of a toy-chariot; another hole below neck for the propelling string; irregular lines in black on red wash; ht. 3·85". Pl. XVI, 14.
- Jk 490 Painted pottery vase with pointed bottom; ovoid leaf, vertical line of loops and triangle with incurved sides in a row in the upper band; spirals at intervals in the lower; design in black on light red wash; a chocolate line separating the two bands; ht. 5·25". Pl. XVI, 18.
- Jk 474 Painted pottery vase with pointed bottom; red balls in looped compartments with outlines in chocolate in two bands, on pink wash; ht. 5·25". Pl. XVI, 19.
- Jk 475 Painted pottery vase with pointed bottom; plain black slip band at neck; balls in looped compartments, and a row of spirals at intervals, respectively in two bands; design in black on red wash; ht. 4·6". Pl. XVI, 16.
- Jk 489 Painted pottery vase with pointed bottom; plain black slip band at neck, and also above the base; red wash on body; no design; ht. 5·3". From —8·4'. Pl. XVI, 17.
- Jk 549 Painted pottery dish; fragment; diam. about 9"; border decorated by a series of arc-shaped loops along a circular band enclosing a series of conical leaf, group of uprights, and lozenge with interior filled in by cross-lines; design in black on red wash. Pl. XVI, 22.
- Jk 545 Pottery vessel with wide mouth probably for cooking; fragmentary; red wash at neck and chocolate slip on shoulder; the neck shows three ribs; below, two horizontal rows of slanting strokes incised; ht. 8·25". Pl. XXXV, 9.

¹ The spiral motif does not occur on the Mohenjo-daro pottery, but is found in Baluchistan (Noetting, *Zeits. f. Eth.*, 1898, p. 469, fig. 42, and some examples in the Indian Museum, e.g., Nos. 56A and 56B). For its occurrence on Honan pottery see Arné, *Stone Age pottery from Honan*, Pl. II, and on Hittite and 'Hyksos' pottery see Frankfort, *Early Pottery of the Near East*, Part II, p. 164, fig. 19 and Pl. XIII, fig. 15. Cf. below, p. 99, Gs. 206.

- Jk 593 Pottery vase fragment with ribbed neck and chocolate slip at shoulder; below, two rows of crescentic strokes incised; next, three incised lines around body and below, two rows of incised strokes. Pl. XV, 24.
- Jk 547 Pottery tumbler; cream wash; ht. 4·75". Pl. XVI, 15.
- Jk 472 Pottery tumbler; ht. 5·5".
- Jk 840 Pottery vase with traces of chocolate paint over cream slip; ht. 25"; diam. at mouth 9·9"; four lines of string marks on body about the middle. Pl. XXXV, 13.
- Jk 501 Terracotta with six holes; decorated all over with red dots; L. about 2". Pl. XV, 19.
- Jk 552 Terracotta block with nine holes; decorated all over with red dots; rectangular; 2·85"×2"×·8". Pl. XV, 20.
- Jk 525 Terracotta toy-cart wheel; two standing human figures in chocolate on pink wash; diam. 2·25".
- Jk 596 Terracotta cone; black; L. 2·7".
- Jk 603 Ivory pin flattened at the end; chocolate colour; L. 3·45". Pl. XVI, 23.
- Jk 524 Chert polisher; brown; L. 4·2". Pl. XIX, 12.
- Jk 109 Chert core; grey; L. 1·5". Pl. XIX, 8.
- Jk 467 Chert flake; brown; L. 1·8". Pl. XIX, 11.
- Jk 76 Chert flake; brown; L. 2·4". Pl. XIX, 6.
- Jk 467 Chert flake; brown; L. 2·15". Pl. XIX, 4.
- Jk 76 Chert flake; brown; L. 1·95". Pl. XIX, 5.
- Jk 629 Chert flake; brown; L. 4". Pl. XIX, 1.
- Jk 601 Chert pounder; brown; L. 2·85". Pl. XIX, 13.
- Jk 1 Copper spear-head; leaf-shaped; fragmentary; L. 7·5"; breadth at the middle 3·3". Pl. XLI, 35.

III. 'THE INDO-SASSANIAN LEVEL' (MOUND B; AND MOUND A, FROM SURFACE TO ABOUT —11').

- Jk 92 Painted pottery vessel; a continuous festoon in black on red wash around shoulder;¹ two plain bands of red slip enclosed by black lines below shoulder; ht. 10·5"; diam. at mouth 7·8". Mound B. Pl. XIII, 3.
- Jk 8 Painted flagon; spout missing; bands in black, red and white around the neck; design consisting of four flowers equally spaced, in black; ends of petals marked by white dots; three ribbed bands below shoulder painted in black, white and red respectively; ht. 5". Mound B. Pl. XIII, 7.
- Jk 99 Painted flagon; fragment; bands in black at neck and around shoulder; birds pecking at flowers in a band, in black on red slip. Mound B. Pl. XIII, 8.

¹ Pottery with this design was found by R. D. Banerji in the clearance of the Stūpa at Mohenjo-daro.

- Jk 339 Painted potsherd; lotus design within concentric circles in chocolate on cream wash. Mound A. Pl. XIV, 16.
- Jk 398 Painted potsherd; triangles with incurved sides in black, filled in by hatching; the sides of triangles enclose a leaf in red with border in black; design on red wash. Mound B. Pl. XIV, 17.
- Jk 169 Neck of a painted vase; red slip and pink wash alternating; a line of dots around neck on pink wash; below it, a plain red slip band and triangles having incurved sides, their apexes pointed downwards; semicircular compartments formed by the two sides of such triangles contain each a solid triangle; decoration in chocolate on pink wash. Mound A. Pl. XIV, 20.
- Jk 143 Neck of a painted vase; a row of slanting serrated lines in black on pink wash; alternate red slip and pink wash; triangles with incurved sides, filled in by cross-lines, two sides of such figures enclosing a leaf in red with black border; decoration on pink wash. Mound B. Pl. XIV, 21.
- Jk 433 Painted potsherd; flowers and animal figure; interior of pattern in chocolate and outlines in black. Mound A. Pl. XIV, 22.
- Jk 34 Neck of painted vase; a band of two interlocked wavy lines in black on natural ground of pottery; alternate red slip and pink wash; a line of cross-hatched triangles with incurved sides enclosing at intervals a floral motif and a red ball with outline in black; design in black on natural ground of pottery. Mound B. Pl. XIV, 24.
- Jk 177 Painted potsherd; balls in loops, in chocolate on pink wash. Mound A.
- Jk 257 Painted potsherd; a row of balls separated from another by four vertical strokes, in chocolate on pink wash. Mound A.
- Jk 100 Pimpled ware bowl; plain; ht. 4"; diam. at mouth 6-7". Mound B. Pl. XIII, 9.
- Jk 98 Pottery amphora with two ring-handles; blue glaze all over; ht. 16-25". Mound B. Pl. XIII, 10.
- Jk 94 Pottery amphora with two ring-handles; blue glaze all over; ht. 9-5". Mound B.
- Jk 279 Neck of a pottery vase with four handles, each decorated with a ram's head. Mound B.
- Jk 817 Spouted pottery vase with pedestal; spout missing; grey ware with designs in relief; a line of pimples at shoulder; below, six lyrist female figures standing in six compartments separated from each other by a panel filled in by pimples; below, a line of pimples again; after blank space, stars above lines shooting upwards from the top of pedestal. Ht. 9". Mound B, about 17' below mouth of well. Pl. XIII, 11.
- Jk 816 A number of potsherds representing Buddha in relief, seated in Preaching attitude, in temple with *Dharmachakra* symbol on *sikhara* Mound B, about 17' below mouth of well. Pl. XIV, 26.

- Jk 816 Potsherd with conch, flower, lion and other motifs in relief. Mound B, about 17' below mouth of well.
- Jk 432 Pottery saucer; fragment; *svastika* and other designs incised on the inner side; diam. 7". Mound A. Pl. XIV, 14.
- Jk 131 Pottery saucer; fragment; branches arranged in the form of a cross, incised on the inner side. Mound B. Pl. XIV, 15.
- Jk 813 Pottery saucer; fragment; floral design around a triangle containing dots and a circle, incised on the inner side; diam. 4.5". Mound B. Pl. XIV, 18.
- Jk 526 Pottery saucer; a row of branches around concentric circles, incised on the inner side; diam. 5". Mound B. Pl. XIV, 19.
- Jk 586 Pottery saucer; concentric circles incised on the inner side; diam. 5". Mound B.
- Jk 436 Pottery flask of tortoise shape;¹ narrow mouth and flat; ht. 2.4"; diam. 4.45". Mound B.
- Jk 151 Potter's dabber; below the neck the Brāhmī letters *pra i* inscribed four times; ht. 2.95". Mound B. Pl. XIV, 23.
- Jk 285 Human head in terracotta; bluish grey; ht. 2.3". Mound B.
- Jk 555 Terracotta plaque with lotus design; plano-convex; hole at the centre for fixing; diam. 2.75". Mound A.
- Jk 129 Terracotta plaque representing human head with moustache; L. 4.15". Mound B. Pl. XIII, 1.
- Jk 507 Terracotta tablet, inscribed with three Kharoshthī letters *Musasa* (?) 'of Musa'; L. 5.1", breadth 1.6". Mound A. Pl. XIV, 25.
- Jk 585 Terracotta sealing; max. L. .55"; inscription in Gupta characters (circa 5th century A.D.): *Śrī-Ajadhāmasya*(?) 'of Ajadhāma(?)'. Mound A. Pl. XIV, 1.
- Jk 533 Terracotta sealing; max. L. about .5"; inscription in Gupta characters (circa 5th century A.D.): *Śrīr-Mmamakasya* 'of Mamaka'. Mound A. Pl. XIV, 2.
- Jk 763 Terracotta sealing; max. L. .75"; inscription in Gupta characters (circa 5th century A.D.): *Śrī-karpari-Harasya* 'of Hara (*i.e.*, Śiva), the wearer of skulls'.² Mound B. Pl. XIV, 3.
- Jk 457 Terracotta sealing; max. L. .7"; inscription in Gupta characters (circa 5th century A.D.): *Śrī-Rumachisa* 'of Rumachi'. Mound A. Pl. XIV, 4.
- Jk 777 Potsherd bearing traces of writing in ink in Gupta characters; only *bha* and *sa* are recognizable.³ Mound B. Pl. XIV, 5.

¹ Similar vessels, both big and small, are frequently discovered at Taxila and other sites on the Northwestern Frontier. Blanford published an illustration of one of these from Makran (now in the Indian Museum, Calcutta) in *Proc. A. S. B.*, 1877, Pl. II, fig. 4. For other examples from Baluchistan, see Hargreaves, *A. S. R.*, 1924-25, Pl. XV, and Stein, *Mem. A. S. I.*, No. 43, Pl. V, Ji. I. iv.

² A number of sealings with this identical inscription were found on Mounds A and B.

³ Along with it were found a sealing of the same class as Jk 763 and the painted potsherd, Jk 339 (Pl. XIV, fig. 16). Very close to them were excavated ten more sealings of this class and a coin with the device of a crude human figure (Jk 765).

- Jk 756 Terracotta sealing with bust of male turned to the right; max. L. .8"; inscriptions probably in Pahlavi characters. Mound B. Pl. XIV, 6.
- Jk 69 Copper coin with crude human figure on one side; round; diam. about .7". Mound B. Pl. XIV, 11.
- Jk 188 Copper coin with crude human figure on both sides; the dress of the figure is copied from that of Kushān kings; round; diam. about .7". Mound B. Pl. XIV, 12.
- Jk 252 Copper coin, being imitation of the issues of the Kushān king Vāsudeva; obverse represents king standing wearing long robe; reverse indistinct; round; diam. about 1".¹ Mound B. Pl. XIV, 13. For imitations of Late Kushān pieces from Jhukar, see Pl. XIV, 7-10.
- Jk 71 Limestone fragment representing a Bodhisattva figure; upper part of the body bare; seated on a stool; right hand in the attitude of offering Protection; L. about 2". Mound A. Pl. XIV, 27.
- Jk 31 Circular stone plaque; hole at the edge for fixing; figure of a tailed and winged horse in relief in the middle; diam. 4.2". Similar stone plaques are well known from Taxila. Mound B. Pl. XIII, 2.
- Jk 241 Iron dagger; L. 8.4". Mound B. Pl. XIII, 4.
- Jk 271 Iron dagger; L. 5.6". Mound B.
- Jk 243 Iron dagger; L. 6.6". Mound B. Pl. XIII, 6.
- Jk 355 Iron spear-head; L. 4.15". Mound B.
- Jk 119 Iron scythe; L. between two ends 3.75". Mound B.
- Jk 254 Iron knife; L. 6.15". Mound A. Pl. XIII, 5.

CHAPTER III.—IN SOUTHERN SIND AND ALONG THE INDUS

SECTION I.—IN THE DELTA COUNTRY

The First Journey.—After the lapse of a year since the excavations of Jhukar, I was deputed to carry out an exploratory survey of the Lower Indus Valley. The purpose for which this work had to be undertaken was twofold. In the first place, our knowledge of the southern limit of the Indus culture was extremely meagre, and it became necessary therefore to gather as much information as possible regarding 'mounds' situated in the Delta country. Secondly, a list of sites definitely ascribed to the Prehistoric period by R. D. Banerji was in the hands of Sir John Marshall, which required a thorough checking in the light of observations made on the spot. When all necessary preliminaries for this survey were settled in correspondence with the Commissioner in Sind, and tents and other equipage obtained, we left Simla at the end of October, 1929, and proceeded directly to Karachi which was fixed as the starting point of our journey.

Bhambor.—Our first camp after leaving Karachi was Gharo which lies in the midst of a sandy plain near Dabheji Station on the Kotri-Karachi Line of

¹ This piece belongs to a lot of thirteen coins. The rest are of the type of Pl. XIV, figs. 11, 12.

the North Western Railway. About $3\frac{1}{2}$ miles from this place is the rocky site of Bhambor on the Gharo Creek. It stands on a hill about fifty feet high, locally known as 'Sasui-jo-takar,'¹ or 'the hill of Sasui,' being the scene of the legend² of Sasui and her lover Punhu which is so familiar to the people of Sind. According to some scholars the site represents an outpost guarding the Gharo Creek and is not earlier than the Arab invasion of 712 A.D.³ This dating was confirmed by the surface finds of glazed pottery, a kind of 'honey-comb' terracotta and small copper coins of the Arab rulers of Sind. The terracotta has been noticed also by Cousens,⁴ who thinks that it was used as moulds for coins. But in all probability they are fragments of that peculiar hand-mill known as *jandi* in Sind. Of these many specimens were subsequently collected from various sites of the Muhammadan period during my journey. Exploratory trenches were sunk at Bhambor to find out if it rested on pre-Muhammadan deposits, but this expectation was not fulfilled. The buildings, which were made of stone, probably belonged to a single period of occupation. By the side of a stone wall, revealed in one of the trenches, about eighty copper coins of the Arab rulers were collected together with fragments of glazed pottery, like those noticed on the surface of the mound.

Tatta and Budhjo Takar.—Further work at Bhambor being thought unnecessary, the camp was shifted to Tatta, about twenty-four miles to the east of Gharo. In centuries past Tatta was the capital of Sind, and had the reputation of being one of the biggest marts of India. On a spur of the Makli hills are the ruins of Kalankot, about five miles to the southwest of Tatta. It is a fort of the Muhammadan times with a mosque on its west, and is surrounded on three sides by a lake, representing no doubt an arm of the Indus which once used to flow by the side of Tatta. An Englishman writing of Tatta in the 17th century observes, "the town is so encompassed with the river Indus that it makes a peninsula."⁵ There was nothing at Tatta or at Kalankot to show that this area had ever been occupied in an earlier period. From Tatta was visited Budhjo Takar, a couple of hillocks on the left bank of the Indus. This is just opposite Jherruck, thirteen miles from Meting station which was reached by train from Jungshahi, the nearest station to Tatta. The road from Tatta to Jungshahi is an excellent one for Sind. This road as well as the one from Meting to Jherruck was found motorable, so that we could reach Jherruck in the course of a few hours. But crossing the Indus to Budhjo Takar and the return journey to Jherruck took much time, as opposite the latter place there was insufficient water and our boat had to follow an extremely circuitous route to reach the other bank. Eventually, the boat had to be left a quarter of a mile away from the bank, and this distance we had to wade through mud and shallow water. Towards the close of the day we reached Budhjo Takar. At this place, Mr. G. E. L. Carter

¹ Banerji, *Prog. Rep., A. S. I., W. C.*, 1919, p. 57.

² Burton, *Sindh* (1851), pp. 389 and 92 ff. Cf. also Elliot, *History of India*, Vol. I, pp. 332-36.

³ Cousens, *Antiquities of Sind*, pp. 80-81.

⁴ *Ibid.* p. 80 and Pl. XV.

⁵ Raverty, *J. A. S. B.*, 1892, Part I, p. 321.

is said to have collected some flints 'upon two tumuli of brick débris.'¹ The tops of the hillocks no doubt looked like tumuli from a distance, but in reality they were nothing but the outcrop of natural rock and did not show any traces of ruins upon them. Not a single flint flake or potsherd could be detected in the whole area, and it did not seem to have ever been a site for human habitation. A local contractor had engaged labourers to cut away stone from various parts of the hillocks, and when we were on the spot they were still busy in collecting their material. Being questioned they told us that they had been for some time past working in this area, but never saw any structural remains, pottery or chert anywhere. It is therefore not clear where exactly Carter got his flints. In the Indian Museum, Calcutta,² there is a flint 'scraper' stated to have been found by Dr. Fedden of the Geological Survey, on the surface at 'Jhirak in Lower Sind,' in 1876. The exact findspot of this scraper also we have not been able to locate. It is quite unlike the implements peculiar to the Indus civilization, and has probably to be regarded as a relic of the Neolithic times.

The Tharro Hill near Gujo.—Returning from Jherruck we proceeded to Gujo, midway between Tatta and Gharo. The village of Gujo lies about ten miles to the west of Tatta on the Karachi road. This place had also been previously visited by Carter, about which Cousens writes: "At the Tharro near Gujo.....where there is a wonderful neolithic city, he made a fine collection of flints."² Tharro is a small hill (Pl. IV, a) about two miles to the southwest of Gujo. The hill rises thirty to thirty-five feet above the plain and has a more or less flat top. Its northern side is occupied by the remains of a series of Muhammadan tombs and a temple, locally known as the *Hāt*,³ which has decayed almost beyond recognition. To the south of these is an area extending to about 1,600 feet by 800 feet, which is studded with innumerable chert flakes. There is a range of low mounds or heaps of earth, five to six feet in height, enclosing portions of this area. This probably led Carter to think that it was the site of 'a walled city.' At three places on the rocky surface of this hill are carved a number of symbols. At one of these spots no less than six signs have been engraved, but at the other two only a single sign is found. Among these 'the man,' 'the bow and arrow' and 'the intersected rectangle' are reminiscent of similar ones occurring on the seals of Harappa and Mohenjo-daro, although the available evidence is not enough to establish a prehistoric date for these symbols or trace their connection with the pictographic script of the Indus Valley.

Prehistoric Pottery.—Excavations across the chain of mounds mentioned above led to the discovery of a fairly large number of potsherds, mostly of a light red ware. The bulk of this pottery appears now quite plain, but some specimens bear traces to show that originally they had painted decoration. One of the painted pieces (Th 54) is illustrated in Pl. XVIII, 34. It is part of a vase ornamented with rectangles filled in by cross-lines. The pattern is executed in chocolate on the natural ground of the pottery, and above it there are traces of a

¹ *Antiquities of Sind*, pp. 46-47. Cf. also Carter in *Ind. Ant.*, 1932, p. 88, n. 13.

² Coggin Brown, *Catalogue*, p. 121, No. 816. The findspot is incorrectly given as 'Shirak' in the Catalogue. But in the original register of the Museum it appears as 'Jhirak.'

³ Carter describes it in *Ind. Ant.*, 1932, p. 87 (see Pl. I, fig. 3 and Pl. II, fig. 4).

reddish brown band. This fragment agrees, in point of technique and design, with certain potsherds from Amri shown in Pl. XVIII. Another interesting sherd is Th 53 (Pl. XVIII, 33) which represents a class of buff ware with buff slip. It belonged to a vase having a chocolate band at neck and some uncertain ornament painted in this same colour below. Th 53, and another fragment Th 23, are shown in their profile view in Pl. XXXVIII, 24, 17. Although it is difficult to judge of the actual shape of the pots of which they form part, it is clear that they conform to a type of straight-shouldered vessels.

Contents of small mounds.—A feature that at once attracts notice, on this part of the hill, is a group of over one hundred small isolated mounds, or piles of stones, which at first sight appear to be Muhammadan graves. Since, however, they are oriented north to south in some cases and east to west in others, it was thought worth while to examine their contents. The majority of the mounds are rectangular, and the rest circular in shape. Three of the rectangular ones were opened, and after a quantity of earth and stones had been removed the remains of a chamber in each one of them, none exceeding nine feet in length and four feet in breadth, were laid bare. The chambers are crudely built; their walls which are of rough hewn stones stand only two to three feet high. From each of the chambers were recovered pottery articles comprising vases,¹ both large and small, and dishes-on-stand (Pl. XVI, 24: ht. 16·5"), the latter recalling the specimens discovered at the chalcolithic sites of the Indus Valley. No bones were found in the course of the digging, and it is difficult to imagine what purpose these deposits served. The pottery is unpainted red ware which does not furnish any definite criteria as to its age, although it is probable that it may, along with the rude stone structures with which it was found associated, belong to some prehistoric epoch, like the chert flakes and cores lying about on the top of the hill.

Nature of the Site.—Besides the pottery, a collection of flints numbering over two hundred and sixty was made from Tharro. These comprise flakes as well as cores (Pl. XIX, 19-22), some of the former being quite of the 'pigmy' type. There was no trace, however, of any dwellings in this area and the earth deposit over the natural rock was found to be only a few inches deep. In all likelihood Tharro hill was merely a centre of flint-knapping industry, and not a regular dwelling site. The future explorer may not, therefore, find it a suitable ground for excavation, but it may be useful to open a few more of the small mounds.

Buddhist Remains.—Some of these small mounds, it may be noted, contain deposits of a much later period. From one of the circular mounds, only when six inches of earth was removed, there came out a large clod of fine clay which, when broken, yielded over a hundred offertory tablets of the Buddhists. Two types could be distinguished among these tablets of unbaked clay: one figuring a seated Buddha and another a row of *chaitiyas*, in either case with the Buddhist creed written in North-Indian characters of the 7th-8th century A.D. The tablets are generally similar to those discovered in the excavations at Mirpurkhas² in the Thar and Parkar District.

¹ E. g. Th 7, ht. 16·5": Pl. XVI, 25.

² Cf. *Antiquities of Sind*, p. 91, fig. 11.

Remains of the Muhammadan period.—The Muhammadan tombs on the northern section of the hill deserve more than a passing mention, as some of them exhibit fine workmanship and probably represent a style of architecture earlier than that of the monuments on the Makli hills at Tatta. The most interesting monument on the Tharro hill, probably dating from the 14th century, is a rectangular enclosure, approximately 28 feet by 18 feet, within which there are two tombs. It is open to the sky and entered on the south by a door surmounted by a heavy lintel. The entire structure is of stone, and the enclosing wall, which is about 6 feet high, is crowned by a battlemented parapet. Below this parapet there are six courses of ashlar masonry. The door, the *mibrab* as well as the tomb are beautifully carved with geometric and arabesque patterns, but the rest of the building is severely plain, indicating a comparatively early age. Similar tombs, but of lesser importance, were also noticed near the Mausoleum of Sheikh Haji Turabi close by. Built into a wall of this building is an Arabic inscription which according to the *Tufatu-l-Kiram* is dated in 171 A. H.¹ A photograph of the inscription supplied to Mr. Ghulam Yazdani has, however, elicited the information that it is dated in 782 A. H., equivalent to 1380 A.D., and in the reign of Firoz Shah Tughlaq, and that it has nothing to do with the tomb itself or with the memory of the saint who is said to have been a contemporary of the Abbaside Khalifa Mansur. The *Tufatu-l-Kiram* mentions that the Sheikh 'took the fort of Tharra, in the district of Sakura, the city of Bagar, Bhambur, and some other places in western Sind.'² There is no doubt the 'Tharra' is the same as the Tharro hill, and 'Sakura' identical with the Taluka now called Mirpur Sakro.

Across the Baghar.—Retracing our steps to Tatta, a trip by a motor car to some of the eastern Talukas of the Delta, namely Mirpur Batoro, Jati, Guni and Dehro Mohbat, was arranged. Accordingly, the Baghar river, which is a branch of the Indus, was crossed on the 22nd of November, and the same day we reached Mirpur Batoro. Our motor could be taken with us in the steamer that plies between the right bank of the Baghar and Syedpur on the other bank. From Mirpur Batoro the mounds at Shahkapur, Kakeja, Katbanan and Rarri were examined, but none of them appeared to be older than Muhammadan times. After inspecting a few more of these late mounds we came to Tando Muhammad Khan on the Fuleli canal. Near this place, on the spurs of the Gunjo Takar Range, there are two Buddhist stūpas, of which the most well known is Sudheranjo Daro. It is situated close to the village of Saidpur and the Gajah Wah, a branch of the Fuleli. This stūpa has been excavated and conserved by the Archaeological Survey. Both the stūpas, however, are built on rocky foundations, and as such there was no possibility of discovering here any earlier strata. Next were examined the mounds at Nidamani and Tharri, which are situated between Matli and Tando Ghulam Ali, but none of them appeared to be even of the pre-Muhammadan period. Kotri was reached by the middle of December,

¹ Cf. *Karachi District Gazetteer*, p. 100.

² Elliot, *History of India*, Vol. I, p. 446.

and from there, as well as from Hyderabad on the opposite bank of the Indus, journeys were made in diverse directions. Mention may here be made only of the visits to Mirpurkhas, Umarmkot and Badin.

Mirpurkhas, Umarmkot and Badin.—Near the town of Mirpurkhas, in the Thar and Parkar District, there is the site known as Kahujo-daro, where excavations were conducted by Cousens and Bhandarkar in 1909-10 and 1916-17 respectively. These resulted in the clearance of a Buddhist stūpa which has since been conserved by the Archæological Department. But encircling the stūpa there are several mounds still awaiting excavation, which probably mark the monastery area. In order to test whether earlier remains exist below the level of the stūpa, a trial trench was excavated to its north. This yielded, at a depth of five to six feet, a chalcedony bead, two copper coins and some plain pottery fragments. Digging was also carried on to the south of the stūpa, but it did not bring to light anything that could be assigned to the prehistoric period. While in Mirpurkhas several other mounds were visited in this District, including those near Shadipalli Station, at Khirah about thirteen miles to the northeast of Mirpurkhas and those near Sindhri about fourteen miles to the northeast of the same town, and the mound called Mumalji-mari near Umarmkot. But at none of these places could be found any trace of the early culture. On return to Hyderabad we proceeded immediately to visit a few mounds in the Badin area. Near Peeru Lishari Station of the Hyderabad-Badin Line, we came across a late mound called Otjo-daro which is cut through by the Badin road. Half a mile to the south of Badin town were also examined the ruins of Old Badin, a cluster of tiny mounds with a varying height of six to eight feet. The site certainly belongs to the Muhammadan times, a fact to which the fragments of pottery handmills (*jandi*), glazed pottery and small copper coins lying here and there bear witness. Some of the other mounds visited near Badin are Kandawaro Daro, about three miles north of the town and Dodojo-mari or Ropa-mari, about five miles to the southwest of Bahadmi which is twenty-two miles to the south of Badin. Dodojo-mari is situated in the midst of a barren sandy plain which beyond Badin takes the character of the Great Rann of Cutch. At none of these sites could there be seen anything of the pre-Muhammadan period.

Recent formation of the Delta.—The result of these journeys in the Delta is not altogether valueless, in spite of its negative character. It suggests that the present delta probably came into existence in comparatively recent times, and demonstrates also the futility of searching for early remains, beyond the hilly region of Lower Sind. As noticed by Raverty, the district of Badin was the southernmost part of Sind in the reign of Akbar, when the Sarkar of Tattah, which included Badin, was bounded on the south by the Ocean.¹ If a line is drawn, connecting Tatta and Gujo in the west with Badin in the east, that would in all likelihood represent the utmost limit to which the Indus country could have extended in the south in the prehistoric period.

¹ *J. A. S. B.*, 1892, Part I, p. 317; Jarret, *Ain-i-Akbari*, Vol. II, p. 336.

SECTION 2.—FROM KOTRI TO AMRI

To the north of Kotri.—It has often been observed that the civilization discovered at Mohenjo-daro was one that grew up in the environments of a great river, like the civilizations of Egypt and Mesopotamia. A thorough investigation along the banks of the Indus was, therefore, felt necessary. The task that now lay before us was to explore the riparian tract to the north of the Delta, that is to say, beyond Hyderabad and Kotri. In this region there exist prosperous villages on both banks of the Indus where supplies are available, and there are roads and railways leading to northern Sind, which could be conveniently utilized at times. But all the same the difficulties of the journey were considerable. Just before the autumn of 1929, there had been heavy floods from which, even in the beginning of the winter, Sind had not yet fully recovered. Most of the roads were still closed to vehicular traffic, and many parts of the country were under water and difficult of approach. To crown all, malaria and other diseases followed in the wake of floods, raging all over Sind in an epidemic form. While touring in the delta some of us had been affected with malaria and we were now obliged to stop at Kotri and Hyderabad for several weeks to obtain necessary medical help. During this interval, investigations were pushed on along the right bank of the Indus. But due to frequent outbreaks of malaria in the camp the work could not be pursued continuously.

Laki Hills near Kotri.—We had received the report of a prehistoric site full of flints on a part of the Laki hills called Karri which is near the Kotri Station. The site was located without much difficulty, and it was found strewn over with dark-coloured flints of various shapes and dimensions. These flints, however, were not artefacts being in their natural unwrought condition. Consequently, they were of geological rather than archaeological interest. We walked over the whole area, but could find no trace of pottery, nor was there any sign of past human habitation. We then proceeded northwards along the valley between the Indus and the Laki Range, and passed through Petaro, Budhapur and Manjhand. A halt was now made at Amri to the east of the Range, where also the existence of an old site was reported.

The Site of Amri.—In 1834 Burnes¹ visited Amri of which an account appears in his "Narrative of a voyage on the Indus." It runs as follows: "About eighteen miles below Sehwan, and on the same side of the river, is the village of Amree, believed to have been once a large city, and the favourite residence of the former kings. It is said to have been swept into the Indus. Near the modern village, however, there is a mound of earth, some forty feet high, which the traditions of the country point out as the halting-place of a king, who ordered the dung of his cavalry to be gathered together, and hence the mound Amree! There are some tombs near it, but they are evidently modern." Cousens² draws attention to this account, but does not add any further information; and it

¹ *Travels into Bokhara, etc.*, Vol. III, 1834, pp. 58-59. Amri also appears in a report on routes in Sind by Lt.-Col. Holland, in which it is described as 'a small village, with much cultivation in the vicinity.'—*Selections from the Records of the Bombay Government*, No. XVII, New Series, Part II, 1855.

² *Antiquities of Sind*, p. 175.

THE SITE OF AMRI



(a) MOUND 2 WITH THE LAKE RANGE IN THE BACKGROUND.



(b) SURFACE VIEW OF MOUND 2.



appears that the site had never been examined by an archæologist before 1929. The mound mentioned by Burnes is to the west and northwest of the village which is about two miles from Amri Station and falls on the way from Sehwan to Manjhand. Close to it there are also other mounds, and the area is hidden here and there by an exuberant growth of bushes and trees, due to the proximity of the river. The mound visited by Burnes, referred to here as 'Mound 1,' seemed to be composed of the débris of sun-dried brick houses built on the vestiges of an earlier occupation. A cutting made by the local people at the base of the mound showed that in the construction of the earlier structures burnt bricks measuring $10'' \times 7\frac{3}{4}'' \times 1\frac{3}{4}''$ were used. To what age this lower stratum belongs is difficult to say without proper excavation. But the *kachcha* brick buildings of the top layer cannot be earlier than Muhammadan times, judging from the glazed pottery and other objects noticeable among the débris. From surface examination the most important one of the mounds appeared to be that lying to the west of Mound 1. It rises to a height of only thirteen feet (Pl. III, *a*), and is littered with potsherds of a different fabric and also fragments of terracotta bangles and triangular 'cakes' (Pl. III, *b*), objects so familiar to us at Mohenjo-daro. This mound, which is called here 'Mound 2,' would therefore strike an observer as altogether of a different category. On a closer search a few chipped flakes of chert were picked up from the western side of the mound. This find above all left no doubt as to the prehistoric character of the site, which was further to be confirmed by excavation. There are a number of graves on the top of the mound, as is the case with a vast majority of ancient sites in Sind, and the local Muhammadans were opposed to the carrying out of excavations in any part of it. The help of the Revenue Officer concerned had therefore to be obtained and the people had to be convinced about our *bona fides* before any operation could be undertaken. These preliminaries took about a week, and during Christmas of 1929 excavations were started (Pl. XLIII).

Trench I.—The first trench was sunk in Mound 2, midway between the highest point of the mound and the level of the plain, near the spot where the chert flakes had been found. It was made fifty feet long by twelve feet broad. Owing to the presence of the graves, the diggers had to proceed with great caution, and operations had to be confined only to a narrow area, as far away from the graves as possible. At a depth of three to five feet from the surface of Trench I, three courses of stone (Pl. III, *d*) were exposed, and digging was carried down, reaching a level slightly lower than that of the surrounding plain. The three courses of stones were standing only 2' to 3' high and formed part of the foundations of walls of which the superstructure no longer existed. In all 253 objects (Am 1-252 and Am 521) were registered from Trench I. These came from two distinct levels: (i) the surface of the mound down to the top of the stone courses, from a depth of 1' to 4', and (ii) the lower levels, from a depth of 6' to 7'.

Objects from Trench I.—Of the objects from the top level, the most noteworthy is a collection of over one hundred potsherds (Am 1-118) representing vessels of red ware with thick walls, having decorations painted in black on dark

red slip. This class of pottery (Pl. XVI, 1-13; pp. 32-33) is already familiar to us from the excavations at Mohenjo-daro and Jhukar in Sind, and Harappa in the Punjab, being typical of the Indus civilization. The motifs occurring on this pottery are also identical with those on the Indus ware. Some of the commonest are: fish-scale, flower within circle, leaves of plants, biconical leaves and zigzag lines, square with incurved sides with a flower in centre, and birds and flowers. Along with the painted pottery were found a number of other objects which also are typical of Indus. Noteworthy among these are a cylindrical bead of green felspar, biconical terracotta spindle-whorls, terracotta toy-cart frames, bull figurines, semi-fired 'cakes,' chert flakes and cores, and fragments of high-footed pottery dishes with incised decoration.

In this trench, at a depth of 6', we lighted upon a darker soil, unlike that of the upper levels, in which was found painted pottery (Am 130-161 and 176) of an altogether different fabric, hitherto unknown in Sind. The pots had generally thin walls having a plain reddish brown band at the neck, a chocolate band on the inner side of the lip and geometric patterns on the body, in black or chocolate on pink, and in some cases on cream wash. The general effect of the decoration is not so striking as that of the rich Mohenjo-daro pottery recovered from the upper stratum of the trench. This pottery also was associated with chert flakes and cores.

Trench II.—With a view to determine whether this new class of pottery lies also outside the mound, that is below the alluvium, Trench II, measuring 35'×26', was started to the east of Mound 2. This new trench revealed, within a foot of the surface, remains of a stone-built structure. A wall, two feet in width, belonging to this structure, was found standing to a height of about four feet (Pl. III, c). It was followed up to a length of some thirty-five feet and along its eastern face the foundations of a number of small chambers were exposed. In this process, heaps of nodular gravel, evidently used for foundations, were cleared from the bottom of the walls. Here, once more we touched the same stratum as that encountered in the lowermost part of Trench I. The same layer of black earth reappeared, and with it the pale colour pottery bearing geometric patterns. Of this pottery, 214 specimens (Am 253-462, 522-525) were recovered in the course of excavation. Trench II was excavated to a depth of four to five feet, and all the pottery and associated objects (chert flakes, etc.) were discovered within two to three feet from the surface of the trench. In it the upper layer seems to have been completely washed away by the action of floods,¹ leaving the lower one practically exposed. Considering that in Trench I the 'geometric' pottery occupies a lower level than the 'black-on-red,' it would be reasonable to assume that the former belongs to an *earlier period*. Moreover, the fundamental difference, both in technique and decoration, between the two wares, would suggest not merely a difference in age but also one in culture between the two strata. The later pottery of Amri, on account of its affinities to that of

¹ The tradition recorded by Burnes in 1834 that the old city of Amri was swept away by the Indus seems to be based on fact.

Mohenjo-daro, should be regarded as a typical product of the Indus civilization.¹ The earlier pot-fabrics of Amri, which will henceforth be called the 'Amri pottery,' should be looked upon as representing an earlier phase of the chalcolithic civilization than that represented by Harappa and Mohenjo-daro. The Indus civilization had undoubtedly a long history, and it is therefore possible that the 'Amri' culture, while co-existent or identical with some of its phases, antedated others.

Potteries of Amri and Baluchistan.—In decoration and colour-scheme, no less in fabric and style, this ware (Pl. XVIII; pp. 29 ff) will be found identical with a class of pottery recently discovered by Stein in Baluchistan,² for which the term 'hybrid wares' has been improvised by Sir John Marshall.³ The finds come from Mehi, Kulli and several other sites of Southern Baluchistan. These potteries betoken certain affinities with that peculiar ceramic product which was discovered for the first time at Nal⁴ and subsequently farther south at Nundara and other sites in Makran. The discovery of Amri now proves that the province of the hybrid pottery extended as far east as the Indus. As we shall have occasion frequently to refer to the Amri pottery in connexion with our further explorations in Western Sind, a few preliminary observations may be made here regarding its technique, decoration and typology.

(i) *Technique and Decoration.*—The Amri pottery is wheel-made, and generally thin and porous. Like the 'hybrid wares' of Baluchistan its paste and ground are of a buff, cream or pink colour, and the vessels have usually a plain band of reddish brown at the neck. The colour of the designs is in many cases of a fugitive character, and seems to have been applied after firing. In all these respects the resemblance to the 'Nal' technique is evident. Like Nal these potteries also show an attempt to produce a *polychrome* effect. At Amri and at some of the Baluchi sites,⁵ this is contrived merely by the introduction of the reddish brown band side by side with black or chocolate as the case may be. The surface is treated with a thin slip or wash, but does not show any sign of polish. The patterns, which are painted over this slip or wash in black or chocolate, are all geometrical, a feature that is common to Nal and the hybrid potteries as well. So far as the decorative ornaments are concerned, the Amri pottery shows the greatest resemblance to the so-called hybrid group of Southern Baluchistan and also to some extent to the pottery of sites like Periano-Ghundai and Moghul-Ghundai in Northern Baluchistan.⁶ Characteristic are the row of lozenges, either solid or filled in by hatches, chevron, rectangles within rectangles, the row of sigmas, and so on. Of these patterns there are some which appear on the painted pottery of Persia including Sistan, and Mesopotamia, where they are treated also in an almost identical manner. As at Amri, the lines of hatched lozenges

¹ Cf. Marshall, *Mohenjo-daro*, Vol. I, p. 100, n. 1.

² *Mem. A. S. I.*, No. 43, Pls. II, V, XX, XXIV, XXV and XXVI.

³ *Mohenjo-daro*, Vol. I, pp. 97 ff.

⁴ *Mem. A. S. I.*, No. 35.

⁵ An additional dark red colour is introduced e.g., at Kulli (*Mem. A. S. I.*, No. 43, p. 122), Zik (*ibid.*, p. 112) and in a few instances at Mehi (*ibid.*, p. 159).

⁶ *Mem. A. S. I.*, No. 37, Pls. V, VI and XI.

and sigmas, for instance, are used at Musyan in Western Persia and Shahr-i-sokhta in Sistan,¹ and also at Al-Ubaid² in Mesopotamia, to decorate the shoulder of the vessels. The purely geometric character of the majority of Nal patterns is also well known. On the Nal ware, the 'geometric' tendency is so pronounced that even zoomorphic designs consisting of the humped bull, the ibex or the fish, which are of such rare occurrence on this pottery, are delineated like geometric figures, as in Susa I, so as to harmonize with the other ornaments with which they are associated in the composition. The motifs peculiar to Nal are 'the step,' 'omega,' enclosing rectangles, and circles enclosed by multiple curves. The motif of enclosing rectangles occurs on the Amri and the 'hybrid' Baluchi wares, and of the rest of the motifs either the one or the other is found on the latter class of pottery and on the kindred specimens which we have since collected from a number of sites in Sind. The 'omega' is absent at Amri, but appears in an inverted and slightly modified form³ on the ceramic remains of Kulli and Mehi. There are also other points of resemblance, so far as the decoration is concerned, between the Nal and the 'hybrid' potteries. But Nal undoubtedly represents a more developed style, and has a much superior fabric too from an æsthetic point of view. It is, therefore, possibly of a somewhat later date than the Amri-Kulli-Mehi group.

(ii) *Types*.—It is not possible fully to reconstruct the shapes of the various types of pots that were prevalent at Amri during the earlier period of its occupation. But a glance at the profile views of some of the fragments (Pl. XXXVIII, 1-11) will convince any one that the pottery forms were quite different from those we are accustomed to associate with the remains of Harappa and Mohenjo-daro. Open and 'rimless' vessels⁴ like bowls and beakers were the types peculiar to Amri. There are two forms which are extremely common, viz., steep-sided vessels, and those having a bulged out body and straight shoulder. A predilection for open vessels is shown also by the potters responsible for the Nal ware and the hybrid wares of Baluchistan, but it is the latter which offer almost perfect analogies to the Amri types.⁵

Ruins at Thati.—When the work at Amri was over, we examined the ruins of an old town, about two miles to the northwest of the Railway Station. These lie along the Sehwan road, to the southeast of Thati village, spread over an area of about four acres. Some samples of painted pottery and a few copper coins were picked up from the site, and the local people drew our attention to certain pits from which big pottery jars had been recovered by men in search of 'treasure.' Traces of quite a number of these jars, still embedded in the earth, could

¹ *Mem. Del. en Perse*, Vol. VIII, p. 97, fig. 145 and p. 105, fig. 166; *Innermost Asia*, Vol. III, Pl. CXIII, K. G. 055, 0135, 011 and Pl. CXIV, S. S. 0105 and 06.

² *Al-Ubaid*, Pl. XVII, 1691, 1695; and Pl. XVIII, 1542, 1959.

³ Cf., e.g., *Mem. A. S. I.*, No. 43, Pl. XXIX, Mehi 111. l. 1. It is probably related to the W-shaped motif occurring on the painted pottery of Musyan (Persia)—*Mem. Del. en Perse*, Vol. VIII, p. 101, fig. 156. (Cf. also Ta 12 bearing similar motif (p. 105 below). The 'omega' might have developed from it.

⁴ By this I mean vessels the rims of which are not differentiated from the wall.

⁵ Sections of Nal pottery appear in *Mem. A. S. I.*, No. 35, Pl. XVI. But no sections of the pottery discovered by Stein have yet been published. I examined the materials in the Central Asian Antiquities Museum at Delhi.

be seen, thanks to a shower of rain that had occurred just before our visit. The origin of the site is attributed to King Dalu Rai, a semi-historical figure looming large in the legends of Sind. In view of the pottery and other surface relics it is not possible to refer the Thati site to a date earlier than the Arab times.

Return to Hyderabad.—Originally our intention was to carry on the operations at Amri for at least another week, that is to say up to the end of January, 1930. But a fresh outbreak of malaria, and this time in a much more virulent form, compelled us to cut short our stay. It was now decided that we should go back and halt at Hyderabad, not only to mature further plans, but also to render necessary medical aid to the members of the camp. Before the party left for Hyderabad, the antiquities collected up till then from excavations as well as from surface of mounds were packed and despatched to our temporary laboratory at Mohenjo-daro for treatment. Further exploration along the right bank of the Indus, beyond the limits of the Karachi District, had to be left over for the next year.

A Catalogue of selected specimens from Amri

I. LOWER LEVEL (CULTURE I).

Painted Pottery. Pl. XVIII, Figs. 1-32.

- Am 219 Bowl fragment; ht. 2"; diam. 2·7". Light red ware; alternate groups of slanting lines in chocolate on natural ground (no slip). Trench I. Fig. 1.
- Am 258 Vase fragment; ladders in a row in chocolate on natural ground (no slip), with traces of reddish brown band above and below. Trench II. Fig. 2; also Pl. XXXVIII, 4.
- Am 259 Vase fragment; greyish red due to imperfect firing; chocolate band at lip, both inside and out; a zigzag line in a band and a row of cross-hatched rectangles (lattice pattern) in another; decoration in chocolate on cream wash. Trench II. Fig. 3.
- Am 321 Vase fragment, showing straight shoulder; light red ware; alternate cross-hatched triangles in black enclosed by reddish brown bands;¹ decoration on light red wash. Trench II. Fig. 4.
- Am 442 Vase fragment with reddish brown band at neck, and below, a row of hatched triangles pointing downwards; decoration in black on light red wash; traces of a black band on the inner side of lip; light red ware. Trench II. Fig. 5.
- Am 384 Vase fragment; chequer in compartment;² traces of uncertain motifs in reddish brown in the adjoining compartments; decoration in chocolate on light red wash; greyish due to imperfect firing. Trench II. Fig. 6.

¹ Cf. a Shahr-i-sokhta (Sistan) potsherd with this pattern. *Innermost Asia*, Vol. III, Pl. CXIII, S. S. 024.

² Cf. Nundara (S. Baluchistan) examples. *Mem. A. S. I.*, No. 43, Pl. XXV, Nun. 1. 2, and Pl. XXVI, Siah. 7

- Am 134 Vase fragment; light red ware; the vessel had a short and straight shoulder, and bulged out body; reddish brown band at neck between two black bands; below, triangle motif with black outline, filled in solid by reddish brown colour;¹ decoration on buff slip; black band on inner side of lip. Trench I. Fig. 7; also Pl. XXXVIII, 7.
- Am 394 Vase fragment; chequer between the two sides of two concave triangles placed sidelong, filled in by hatches; decoration in chocolate on cream wash; light red ware. Trench II. Fig. 8.
- Am 523 Vase fragment, showing straight shoulder; chocolate band at lip, both inside and out; festoon with hanging uprights, in chocolate on buff slip; reddish grey ware. Trench II. Fig. 9; also Pl. XXXVIII, 5.
- Am 150 Vase fragment; a row of sigmas in black on buff slip; traces of a reddish brown band at neck; buff ware. Trench I. Fig. 10.
- Am 406 Vase fragment; light red ware with buff slip; decoration as on Am 394. Trench II. Fig. 11.
- Am 390 Vase fragment; decoration as on Am 394. Trench II. Fig. 12.
- Am 149 Vase fragment; comb-shaped motif with the two end lines extended; decoration in chocolate on buff slip; traces of reddish brown band; light red ware. Trench I. Fig. 13.
- Am 140 Vase fragment; light red ware; reddish brown band at neck; below, a band divided into hatched triangles containing solid triangles at corners; decoration in chocolate on buff slip. Trench I. Fig. 14.
- Am 144 Vase fragment with straight shoulder; traces of reddish brown band at neck and chocolate band inside on lip; a row of sigmas in chocolate and below, traces of cross-hatched rectangle; buff ware with decoration on buff slip. Trench I. Fig. 15.
- Am 146 Vase fragment; light red ware; reddish brown band at neck and chocolate band inside on lip; ornament consisting of two sidelong hatched triangles with incurved sides, and in between a column of solid triangles in two vertical rows; decoration in black on light cream wash. Trench I. Fig. 16; also Pl. XXXVIII, 3.
- Am 398 Vase fragment; greyish ware due to imperfect firing; a row of solid triangles with incurved sides² in chocolate on buff slip. Trench II. Fig. 17.
- Am 264 Vase fragment; light red ware; traces of reddish brown band; a row of small uprights at shoulder in a band; decoration in chocolate on light red wash. Trench II. Fig. 18.
- Am 367 Vase fragment; greyish red ware with light red slip; chocolate band at lip, both inside and out; a zigzag line forming a series of triangles, in chocolate. Trench II. Fig. 19.
- Am 389 Vase fragment; part of a straight-sided vessel; light red ware with traces of a wash on outer side; reddish brown band at shoulder; chocolate band at lip, both inside and out, and similar chocolate

¹ This pattern occurs at Shahr-i-sokhta. *Innermost Asia*, Vol. II, p. 971, S. S. 03 and Vol. III, Pl. CXIII.

² It occurs at Kulli, *sg.*, *Mem. A. S. I.*, No. 43, Pl. XXII, Kul. V. vii. 1 and Pl. XXIII, V. v. 1.

bands all over the body; a band of solid lozenges¹ in chocolate. Trench II. Fig. 20.

- Am 313 Vase fragment; part of a vessel with straight shoulder and bulged out body; reddish brown band at neck; below, a band of sigmas; below again, a broader band consisting of detached ladder motifs; light red ware with wash of same colour. Trench II. Fig. 21; also Pl. XXXVIII, 1.
- Am 148 Vase fragment; black and reddish brown bands on shoulder and a band of chevron² in black on buff slip; light red ware. Trench I. Fig. 22.
- Am 443 Vase fragment; buff ware; a continuous line of eye-shaped compartments with a row of vertical strokes below; decoration in chocolate on buff slip. Trench II. Fig. 23.
- Am 288 Vase fragment; chocolate band on inner side of lip and traces of reddish brown band at neck; a motif probably composed of rectangles within rectangles, alternating with a group of verticals in a band; decoration in chocolate on buff wash; buff ware. Trench II. Fig. 24; also Pl. XXXVIII, 9.
- Am 133 Vase fragment; part of a rimless vessel with slightly bulged out body; pale terracotta ware with thin wash; chocolate band on inner side of lip as usual; a band of hatched lozenges in a continuous line on terracotta wash between two reddish brown bands. Trench I. Fig. 25.
- Am 135 Vase fragment; a band of hatched lozenges as on Am 133; two reddish brown bands; decoration in chocolate on natural ground of pottery; light red ware. Trench I. Fig. 26.
- Am 369 Dish fragment, showing part of the ring base; a line of hooks in chocolate in the interior, on natural ground of pottery; light red ware. Trench II. Fig. 27.
- Am 440 Vase fragment; light red ware; traces of a reddish brown band at neck and of another similar band down below; between the two there are further traces of a band of chevron and of a series of hatched triangles laid on one side;³ poor state of preservation; no slip. Trench II. Fig. 28; also Pl. XXXVIII, 10.
- Am 351 Vase fragment; part of a vessel with straight shoulder and bulged out body; chocolate band on inner side of lip and a much broader band of same colour outside; light red ware. Trench II. Fig. 29.
- Am 299 Vase fragment; part of a rimless wide-mouth vessel with straight shoulder and slightly bulged out body; light red ware; a band of cross-hatched lozenges in a continuous line in chocolate on natural ground. Trench II. Fig. 30.

¹ Cf. Nundara examples, e.g., *Mem. A. S. I.*, No. 43, Pl. XXVI, Nun. 40. It occurs frequently in Baluchistan.

² This pattern occurs frequently in Baluchistan, e.g., *Mem. A. S. I.*, No. 43, Pl. V, Kar. a. 2.

³ The latter pattern occurs at Kulli. *Mem. A. S. I.*, No. 43, Pl. XXI, e.g., Kul. I. ii. 7.

- Am 522 Vase fragment; light red ware; part of a vessel with straight shoulder and slightly bulged out body; light red ware; traces of two reddish brown bands and of chocolate on lip, both inside and out; a band of hatched lozenges in a continuous line in chocolate on light red wash. Mark that the hatches vary in direction from one figure to another, alternately. Trench II. Fig. 31; also Pl. XXXVIII, 8.
- Am 260 Vase fragment; part of a vessel with straight shoulder, slightly bulged out body and wide mouth; light red ware; a band of lattice motifs at shoulder in black on light red wash. Trench II. Fig. 32; also Pl. XXXVIII, 11.

Miscellaneous Objects.

- Am 537 Miniature pottery vase; light red ware; cylindrical; ht. 2.25"; diam. at mouth 1.75". Trench II. Pl. XXI, 28.
- Am 467 Biconical terracotta bead or spindle whorl with incised decoration; L. 1.05". Trench 2. Quite a number of these beads were found at Amri. Pl. XVII, 13.
- Am 463-64, 542 Three semi-fired terracotta 'cakes'; max. L. 2.5" to 3" each; thickness about 1" to 1.25". Trench 2. Pl. XVII, 14 (Am 464).
- Am 162 Chert core; L. 2.7". Trench 1. Pl. XIX, 18.
- Am 345 Chert blade; L. 3.8". Trench 2. Pl. XIX, 14.
- Am 483 Chert flake; rectangular; L. 3.2". Trench 2. Pl. XIX, 15.
- Am 488 Chert flake; pointed; L. 1.9". Trench 2. Pl. XIX, 16.

II. UPPER LEVEL (CULTURE II, 'INDUS').

All the objects are from Trench 1, depth 1' to 4' below its surface.

Painted Pottery. Pl. XVI, Figs. 1-13.

- Am 71 Vase fragment; red ware; fish-scale in black on dark red slip. Fig. 1.
- Am 58 Vase fragment; red ware; rectangles with incurved sides and dotted flower in centre; biconical hatched leaf; black on dark red slip. Fig. 2.
- Am 7 Vase fragment; red ware; flower within circle in black on dark red slip. Fig. 3.
- Am 68 Vase fragment; red ware; a bird with body filled in by hatches and dotted flowers; in black on dark red slip. Fig. 4.
- Am 21 Vase fragment; red ware; hatched leaf motif, together with zigzags, laid in a slanting position; decoration in black on dark red slip. Fig. 5.
- Am 49, 39, 47 Three vase fragments; red ware; pointed dagger-shaped motifs laid horizontally, probably denoting blades of grass; also vertical strings of hatched biconical figures; decoration in black on dark red slip. Figs. 6, 7, 8.
- Am 32, 78 Vase fragment; red ware; a zigzag line between two rows of hatched semi-circular compartments, in black on dark red slip. Fig. 9.
- Am 41 Vase fragment; red ware; a vertical string of loops with a dot in each probably denoting bird-heads; decoration in black on dark red slip. Fig. 10.

- Am 14 Vase fragment; red ware; solid triangles with incurved sides enclosing hatched biconical leaves; decoration in black on dark red slip. Fig 11.
- Am 34 Vase fragment; red ware; a vertical string of hatched ovals alternating with conical hatched leaves placed horizontally in a column; decoration in black on dark red slip. Fig. 12.
- Am 3, 4, 6 Vase fragments; red ware; branch with hatched conical leaves in black on dark red slip. Fig. 13.

Plain Pottery, Terracotta, Beads, etc.

- Am 119 Pottery dish fragment with incised crescentic marks.
- Am 167-171 Pot fragments with incised shooting rays.
- Am 172-175 Pot fragments with incised cord-marks.
- Am 166 Miniature pottery vase; light red ware; ht. 1.75"; diam. at mouth 1.6". Pl. XXI, 17.
- Am 120-128 Semi-fired terracotta cakes; triangular in shape; max. L. 2.75" to 3.75"; thickness .75" to 1.5".
- Am 129 Round terracotta cake; diam. 3.75"; thickness 1.25".
- Am 179-190 Terracotta toy-chariot fragments; frames pierced with holes. (Cf. Mackay, *Mohenjo-daro*, Vol. II, p. 554). Pl. XVII, 15 (Am 180).
- Am 195-201 Terracotta toy bulls; L. 3" to 4.5" each.
- Am 202 Terracotta bull-head, painted, having two holes for fixing it to the body which is missing; L. 1.3".
- Am 218 Twenty-five terracotta bangle fragments, either plain, or marked with blotches of red or chocolate (e.g., Pl. XVII, 12).
- Am 233-236 Four biconical terracotta beads or spindle whorls with incised decoration; L. .9" to 1".
- Am 252 Green felspar bead; cylindrical; uneven surface; hexagonal in section; L. .6"; max. B. .4".
- Am 251 Steatite bead; discoid; diam. .45".
- Am 243 Limestone ball; diam. 2.25".
- Am 239 Limestone ball; diam. 1.5".
- Am 220 Terracotta bead; long-barrelled shape; L. 2.75"; max. diam. .45".
- Am 230-32 Chank bangle fragments.
- Am 250 Chert flake; L. 2.5". Pl. XIX, 17.

SECTION 3.—FROM HYDERABAD TO ARORE

Halt at Hyderabad.—About a week was spent at Hyderabad in making necessary preparations for a journey across the Hyderabad and Nawabshah Districts. It was thought advisable to keep ourselves as close to the Indus bank as possible, visiting by turn the headquarters of Hala, Shahdadpur and Sakrand Talukas, as well as Nawabshah itself, to collect information about 'mounds.' Already the local officers had reported a number of them, but

information regarding their exact location was lacking. It was further necessary to ascertain at Hyderabad the condition of the roads by which we were to travel. On enquiry it was learnt that most of the roads in this part were in a fairly satisfactory condition, and a motor car could fortunately be engaged here for a month for the journey. But we were obliged to take with us as little kit as possible, leaving most of the equipage at Hyderabad.

To Thul Rukan and Naushahro.—On the 8th of February, the party left Hyderabad, and after a day's halt at Hala, well known for its lacquer work, reached Nawabshah on the 10th. Near Hala there are some remains of recent origin on the road to Bhanot, called Naushahrjo-bhit. Similar remains known as Sohnijo-bhiro were seen between the Awat *Wah* and Kambulimo, and also near the Pinjaro *Wah* at Miyan Chhutto, ten miles farther north on the way to Nawabshah. The latter part of the journey was rather difficult, as at more than one place the car got jammed in the sand. Nearing Nawabshah we could proceed more conveniently along the 'inspection path' of the Dad Canal. A large number of places reported in the Nawabshah Taluka were now visited, but none of them appeared to be connected with 'early' culture. The most noteworthy of them is Bahumjo-bhiro between Daur and Bandhi Railway stations. The ruins cover a very extensive area. The mounds are not more than 15 ft. high and consist of the débris of brick-built structures in which bricks of the size of $10\frac{3}{4}'' \times 7\frac{1}{2}'' \times 1\frac{1}{2}''$ were used. Specimens of glazed pottery and stamped pottery impressed with 'circles,' as well as a few copper coins, apparently of the early Muhammadan period, were picked up from the site. Another mound called Rati Bhiri, surrounded on all sides by sand, is at a distance of twelve miles from Nawabshah, near a Regulator of the Nasrat Canal. The area was full of red pottery fragments, and a brick wall was found exposed in a part of the mound. The pottery included painted and stamped specimens, the designs being impressed on the necks of vessels as at Bahumjo-bhiro. There were also a few copper coins lying about here and there. The size of the bricks used in the wall is $14\frac{1}{2}'' \times 8'' \times 2''$. There was, however, no sign of the prehistoric period anywhere to be seen. The mounds that were examined in Moro and Naushahro Talukas did not also reveal any early features. The people of this part attach much importance to a mound called Bhirāijo-daro near Tharushah, which does not, however, appear to be earlier than Muhammadan times. Of a similar character are also the ruins that fall on the way from Moro to Naushahro. The oldest site among those in the two Talukas seems to be what is known as Thul Rukan which was reached *via* Sakrand and Kazi Ahmad. Thul is the name of the village outside which is a towerlike Buddhist stūpa, a monument unique of its kind, already protected by the Archaeological Department. In some respects its elevation recalls the stūpas of Gandhāra. It is surrounded by a belt of smaller mounds about 8 ft. high, probably marking the site of a monastery, none of which has been so far excavated. An inspection of the mounds did not reveal any traces of prehistoric habitation. After visiting a few débris-covered areas in this District we returned to Hyderabad towards the middle of the month.

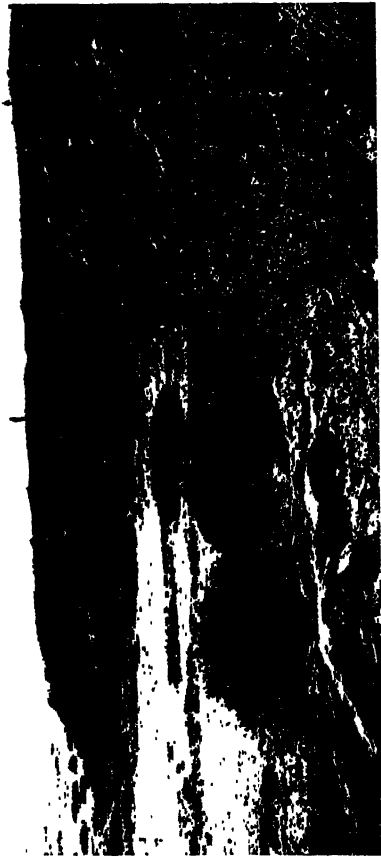
Tando Allahyar and Shahdadpur.—Soon after our return to Hyderabad a mound called Daro Suta, near Tando Allahyar, was examined. It looked like a fort of Early Muhammadan times. Next we took the road to Shahdadpur via Udero Lal and Tando Adam, and visited two sites, separated by a distance of about half a mile. These, called respectively Dhakanjo-daro and Batriwaro Bhira, are about 4 miles from Shahdadpur, on the road to Sarhari station. The former, which consists of a roundish mound about 20 ft. high and is surrounded by a chain of smaller mounds, appears to have been the site of a Buddhist stūpa. It was built of burnt bricks, but the site unfortunately is being used as a quarry by the local people. As at Mirpurkhas, carved bricks had been used here for the decoration of the stūpa, a number of which were found lying over the area. Batriwaro Bhira appeared to be a promising site, marking the position of a town of the Indo-Sassanian period (5th to 7th century A.D.). There are here three or four mounds occupying a considerable area, which reach a height of thirty to forty feet. The mounds consist of mouldering heaps of earth thoroughly interspersed with potsherds. In general appearance these accumulations resemble those at Mirpurkhas. Painted pottery was not noticed anywhere, but unpainted pottery fragments and burnt bricks were plentiful. Some of the bricks measured $11\frac{1}{2}$ " square by $2\frac{1}{4}$ " thick. Two beads, one of chalcedony and another of cornelian, were picked up from the area. Fragments of iron met with on the surface indicated that the Chalcolithic Age was not to be associated with this site. Even then it looked sufficiently interesting, and we felt that it would repay excavation. At a distance of 17 miles from Shahdadpur is the prosperous village of Shahpur where we halted for a day. Two late mounds probably of the Muhammadan period, in Khairo Rind *Tapa*, were inspected on the way to Shahpur. At both the places, a class of painted pottery was found in association with small copper coins of the early Muhammadan period, and similar finds at three other mounds in Barhun *Tapa* near Shahpur suggested that all these remains should be referred to one and the same period. After a journey of 18 miles from Shahpur we came to Nawabshah.

Chāñhu-daro near Jamal Kiriyo.—So far our attempts to discover prehistoric sites on the left bank of the Indus had not been successful. But investigations near the Dad Canal between Nawabshah and Sakrand now brought us by a happy chance to a group of mounds called Chāñhu-daro, to the south of the village of Jamal Kiriyo. These are situated on the Hazari Wah, a branch of the Dad Canal, to the south-east of the point where this canal is crossed by the Nawabshah-Sakrand road. In the course of an hour we collected from the slopes of the mounds not only chert flakes but also a good many specimens of painted pottery, beads and terracotta, of the type familiar to us from Mohenjo-daro. The largest number of painted sherds were lying scattered over a mound which was the smallest of the group. These finds made it clear that a chalcolithic site was represented by Chāñhu-daro. It was now decided to open a few trial trenches into these mounds, and for this purpose the requisite labour was obtained through the Collector of the District.

Old Indus bed.—At present the Indus flows at a distance of about twelve miles to the west of Chāñhu-daro. The nearest ferry-station is almost opposite Amri which is on the other bank of the river. There are, however, reasons to believe that in olden times the Indus was much nearer to Chāñhu-daro, being only at a distance of three miles from it. An old bed of the Indus, which is very well marked, falls on the way to Sakrand near the ruined fort of Mir Nur Muhammad. It is immediately to the west of the fort and runs north to south for a considerable distance. An eminence in the middle of the bed, which looks like an islet, goes by the name of Lidhar-jo-daro. It is not, however, of any archaeological importance. This bed is supposed by the elderly people of the Sakrand Taluka to have been the continuation of what is popularly known as *Sohnijo-dariya*, probably identical with an ancient course of the Indus, traces of which can yet be seen in the Kandiaro, Naushahro, Nawabshah, Shahdadpur and Sinjhoru Talukas of the District. Whether this is the same as the Mihran of the Arab geographers cannot be definitely ascertained. But it is not improbable in view of the fact that the Mihran has been described as flowing in the vicinity of Bahmanabad-Mansura, near Dalor in the Sinjhoru Taluka, in the 8th century A. D. A portion of the old Indus bed, no doubt another link of the same Sohnijo-dariya, was subsequently visited by me at the village of Piyo Naich (marked as 'Pyareh Naith' on the Survey of India map), 11 miles to the north-east of Naushahro and to the west of the road to Hakani. Whether this was the course of the Indus also in the Chalcolithic Age, when Chāñhu-daro was in occupation, is of course more than we can say.

Excavations at Chāñhu-daro.—There are altogether three mounds (Pl. IV, b) at Chāñhu-daro, which are referred to here as 1, 2 and 3 respectively. Mounds 2 and 3 are connected with one another and are respectively 19 ft. and 10 ft. high. Mound 1 is detached from these two, and is about 17 ft. in height. The three mounds roughly cover an area of about 1,000 ft. long by 700 ft. broad. On the 21st February, excavations were started on Mound 3 (Pl. IV, d). Two trenches (I and II), both sixteen feet wide and at right angles to each other, were extended to a length of 150 ft. and 70 ft. respectively, and carried down to a depth varying between 7 and 12 ft. The composition of the deposits in the two trenches showed that the structures that once stood here must have been principally of sun-dried bricks, the use of burnt bricks being strictly limited. Excepting a few fragmentary wallings the only other instance of the use of burnt bricks was a well, discovered about six feet below the level of the plain and thirteen feet below the surface of the mound. This well, which had a diameter of 3' 6", was built of wedge-shaped bricks like the wells at Mohenjo-daro. At places the excavation reached a depth of 12', as already stated, but even at this level pottery was found in plenty. It was, therefore, evident that the virgin soil at Chāñhu-daro lies much lower down. Near the well, only about a foot below the ground, was discovered a big painted vessel (Ch 401), and after its removal a similar one (Ch 448) was found resting just below it. Not far from this spot was lying a pottery trough (Ch 445) which, as well as the two painted vessels, were extracted in fragments, and later pieced together by Mr. Q. M. Moneer

THARRO HILL AND CHANHU-DARO



(a) THARRO HILL, SHOWING THE AREA OF CHERT IMPLEMENTS.



(b) THE MOUNDS OF CHANHU-DARO.



(c) EXCAVATED WAYS AND A DRAIN ON MOUND NO. 1



(d) MOUND NO. 3 AT CHANHU-DARO, SHOWING THE

(Pl. XX, 26-28). Over four hundred objects were recorded from these two trenches, all of them being of the same type as those from Mohenjo-daro. Trench III, 80 ft. long by 12 ft. broad, was started on Mound 1, in which a depth of 7 to 8 ft. was reached. In the course of this digging, remains of burnt brick structures including a few walls and a drain were brought to light (Pl. IV, c), the walls in their additions and alterations bearing distinct evidence of *two stages* of occupation. The bricks measured $10\frac{1}{4}"$ or $11" \times 5\frac{1}{4}"$ or $5\frac{1}{2}" \times 2\frac{1}{2}"$, thus exactly corresponding to the standard size bricks of Mohenjo-daro. About one hundred antiquities of the same class as those from Trenches I and II were registered from Trench III. A point worth noticing regarding the finds in the three trenches is that painted pottery was found in great abundance at Mound 3, whereas at Mound 1 it was not so plentiful. The brief time at our disposal did not allow us to probe further into the lowermost parts of the trenches. But judging from available evidence, the remains of Chāñhu-daro seem to represent a long period of occupation of the Indus people, like Mohenjo-daro.

Finds.—A few observations may be made regarding some of the finds from Chāñhu-daro (pp. 40—44). The painted pottery,¹ which was the commonest of all, is the familiar thick ware with decoration in black on bright red slip. Some of the interesting designs are: figures of birds, for instance the peacock; stags forming a row; and the *Pipal* leaf which often occurs in very attractive and pleasing patterns. The stags are treated in a highly conventional manner, not unlike those on the pottery from Susa and from certain sites in Baluchistan. The stag design occurs rarely at Mohenjo-daro, and at Chāñhu-daro only one example of it was found. That the peacock was considered to be a sacred bird by the Indus people seems now almost certain after the recent discoveries at Harappa. There, on a class of necropolitan pottery, peacocks carrying departed human beings are represented. At Chāñhu-daro, the peacock is depicted probably as pecking at a serpent,² on two potsherds shown in Pl. XX, 2, 13. The hatched ovolo (leaf) alternating with the wavy line (Pl. XX, 20), both the motifs placed vertically in a band, may be compared with those on the pottery of the Second Period of Susa.³ A common motif is that of concave squares in an interlaced pattern (Pl. XX, 28), which was widespread in the Chalcolithic Age. It has been traced as far as Dabarkot in Northern Baluchistan.⁴ Of the chert flakes, some are rectangular, while others are pointed at an end, evidently to suit a variety of purposes. One of these having a serrated edge (Pl. XIX, 28) is comparable to some of the flakes from Kish in Mesopotamia,⁵ while two mace-heads, one plain and the other with incised decoration (Pl. XIX, 27, 36), bear striking resemblance to Susan examples illustrated by De Morgan.⁶

¹ See Pl. XX, especially figs. 26 and 28.

² Cf. Toscanne, *Mem. Del. en Perse*, t. XII, 1911, p. 215, fig. 430 and p. 216, fig. 432.

³ *Prehistoire Orientale*, t. III, p. 75, fig. 110.

⁴ *Mem. A. S. I.*, No. 37, Pl. XV, D. 58.

⁵ Mackay, *A Sumerian Palace and the 'A' Cemetery at Kish*, Part II, 1929, Pl. XLII, 17.

⁶ *Prehistoire Orientale*, t. III, p. 101, figs. 3, 4.

Among other stone objects mention may be made of a cubical weight and a jewel-polisher which have their parallels from Mohenjo-daro. The limited number of copper objects including a spear-head, a straight-backed knife and several awls and chisels do not exhibit any new forms. Beads were found quite numerous, these being of a variety of substances, e.g., steatite, cornelian, lapis lazuli, chalcedony, terracotta and faience. They also present a number of shapes, e.g., discoid, globular, long and short barrel, cylindrical and biconical. Among beads the commonest were those of steatite having a discoid shape. The decorated cornelian bead shown in Pl. XVII, 25 is interesting as its exact parallel has been discovered at Kish¹ (cir. 3000 B.C.), both the beads bearing the pattern of 8 encrusted in white. Regarding pottery vases, no special remark is necessary. The types are already familiar to us, for instance the pointed bottom vases and those with perforated body. Of terracotta objects, the most interesting is the figurine of an animal with one horn (Pl. XXI, 24). It suggests the possibility that the 'unicorn' so common on the Indus seals may after all have been intended for an one-horned animal, and not a two-horned creature seen in profile.² The figure of the Mother Goddess (Pl. XXI, 1) is treated exactly like the examples from Mohenjo-daro and Harappa. The fragment of a terracotta bangle, in Pl. XVII, 40, shows that such bangles were imitated from conch shell prototypes of which one is seen in Pl. XVII, 39. Numerous cut pieces of conch shells (Pl. XVII, 33) which must have been fashioned with a saw, were discovered in Trenches I and II. There is no doubt that bangles, etc., would have been carved out of these sections. They are mostly columella or cores, not unlike those from Korkai in the Tinnevely District of Madras, illustrated by Hornell.³ Similar sawn sections of conch are reported also from prehistoric sites in the Deccan, Gujarat and Kathiawar. The saw that must have been employed for cutting the conch was probably of the same lunate type as that used today in Bengal of which the earliest known example seems to be the one discovered at Mohenjo-daro.⁴ The most important discoveries from the trenches at Chāñhu-daro were the three seals reproduced in Pl. XVII, 34, 38, 44. The shield sign in Pl. XVII, 38 is interesting as it occurs here for the first time. Pl. XVII, 44 probably depicts the *Pipal* tree (*ficus religiosa*), but no other example of this type of seal from Mohenjo-daro or Harappa is so far known, although representations of the tree itself are fairly common. This tree had evidently a religious significance,⁵ and may have had some connection with tree-worship.

Arore.—By the middle of March, after concluding the excavations at Chāñhu-daro, we came to Arore, 5 miles to the south-east of Rohri, and encamped there for about a week. Arore was the capital of Dahar, King of Sind and was invaded by the Arabs under Muhammad Kasim in 711 A.D. Its ruins overlook the old bed of the Indus which during the Arab times used to flow near by. In

¹ *A Sumerian Palace and the 'A' Cemetery at Kish*, Part II, p. 186, Pl. XLIII, No. 6, fig. 4 and Pl. LX, 55. For the origin of these cornelian beads found in Mesopotamia, see Mackay, *J. R. A. S.*, 1925, pp. 698 ff. I drew the attention of Mr. Mackay to the aforesaid analogy which he has since noticed in *Antiquity*, 1931, p. 490.

² Cf. *Mohenjo-daro* Vol. II, p. 382, n. 2.

³ *Memoirs of As. Soc. Beng.*, Vol. III, Pl. XIII, fig. 2.

⁴ *Mohenjo-daro*, Vol. II, pp. 563-64 and p. 500.

⁵ Cf. *ibid.*, Vol. I, pp. 63 ff.

a later period the river changed its course and made a passage, through the hills between Rohri and Sukkur, which it has retained ever since. There is a cluster of small mounds just to the north-east of the Arore village along the Junojee road, which are locally known as Garhi-gor. The biggest of them is not more than eight feet high. A trench cut into one of these brought to light a number of carved bricks of about the 7th or 8th century A.D. The common belief that this part of Arore represents the pre-Arab Hindu city was thus corroborated.

Rohri and Hakrah.—About $3\frac{1}{2}$ miles to the south of Rohri is the small village of Hakrah between which and Arore flows the Nara Supply Channel. Hakrah is no doubt called after 'the lost river'. A place near Mohenjo-daro has also this name; where also the same origin could probably be traced. According to the *Sukkur District Gazetteer*, there 'are the ruins of an ancient town' at Hakrah. But in fact there is no trace here of these ruins now. The information given in the *Gazetteer* is based on an account of Captain Kirky. In 1855, in connection with the excavation of the Eastern Nara, he reported as follows: "In excavating the great Nara Canal we occasionally came upon detached masses of brickwork, and at length, at a depth of about 10 feet below the surface of the ground, the foundations of a very large number of houses were laid bare. These foundations consisted of stone or of mingled stone and brick work and resembled those to be seen in the ruins of the city of Aror at the present day. Among these ruins were found a number of articles made of brick clay such as drinking cups, a *khuja*, some water spouts and a large number of children's toys."¹ The correctness of this account of a buried city at Hakrah was vouched for by an old man of the village who had heard about this discovery from his father. He brought us to a spot two miles and one furlong from the Nara Head and pointed out a place in the bed of the Canal where the 'Sahibs' in by-gone days came across a 'Bazar' in the course of their diggings. No trace of the buried structures was, however, visible anywhere near the spot. The very fact, that the remains were found at a depth of ten feet below the surface of the plain, shows that these must have been of great antiquity, and the nature of the finds, which consisted of pottery vases, terracotta toys, etc., led us to suspect that there was probably a prehistoric settlement here. A portion of it has no doubt been destroyed by the canal diggers, but the rest may perhaps still be found underneath the layer of silt somewhere in its neighbourhood. That a prehistoric settlement, or at any rate a mining site for flint, existed in this region seems certain. In 1866 a number of finely wrought flint cores were discovered by Lieutenant-Colonel E. Twemlow in the Indus bed at Sukkur,² and in 1875 some imperfect flakes and cores were gathered from the limestone hills around Sukkur and Rohri.³ Sir John Evans who described some of the earlier finds assigned them to the Neolithic Age,⁴ and W. T. Blanford pointed out that they are made of flint derived

¹ *Sukkur District Gazetteer*, p. 43.

² *Geological Magazine*, 1866, p. 433 and 1867, p. 43.

³ These are now in the Indian Museum, Calcutta. See Coggin Brown, *Catalogue of Prehistoric Antiquities*, pp. 120-

⁴ *Geological Magazine*, 1866, p. 435 and Pl. XVI.

from nummulitic limestone.¹ This limestone being local at Rohri it was naturally concluded that there must have existed in the Neolithic Age a settlement of people practising flint industry somewhere in this region, on the banks of the river Indus. According to Blanford "the cores found in the Indus were made by a different people from those who chipped their flakes on the hills around". But it has not been possible to locate the exact position of this settlement.

To Mohenjo-daro.—At Arore, we closed for the season our exploratory journey and came from there to Mohenjo-daro. The remaining days of the season were spent here in cleaning and photographing the objects and studying them after treatment. Thereafter, with the spoil of the expedition we left for Simla, as desired by the Director General of Archaeology. The journey had taken us over two thousand miles of the Sind valley, in the course of which more than a hundred mounds and old sites were examined, at about seventy places in the Districts of Karachi, Hyderabad, Nawabshah, Thar and Parkar, and Sukkur. Out of these at only three places, the remains of the prehistoric period were brought to light, viz., at Tharri hill, Amri and at Chāñhu-daro. Tharri hill, lying in the deltaic region, marks the southernmost prehistoric site so far known; Amri represents two cultural strata, one anterior to, and another coeval with Mohenjo-daro; while in Chāñhu-daro we have one more station of the Indus civilization. The rest of the sites, to judge from surface remains, belong to much later dates, ranging from the period of the Indo-Sassanians to that of the various Muhammadan dynasties of Sind.

A Catalogue of the principal objects from Chāñhu-daro.

- Ch 309 Two steatite globular beads; diam. .25" and .2" respectively. Pl. XVII, 16 a-b.
- Ch 72 Five steatite beads; discoid; three sizes: diam. .35", .5" and .6" respectively. Pl. XVII, 17-19.
- Ch 364 Steatite bead; cylindrical; L. .9". Pl. XVII, 20.
- Ch 69 Steatite bead; barrel shape; L. .45"; diam. .3". Pl. XVII, 22.
- Ch 363 Steatite bead; plano-convex; segmental in section; L. .5". Pl. XVII, 23.
- Ch 309 Faience bead; globular; diam. .35". Pl. XVII, 16 c.
- Ch 366 Unfinished stone bead with black and white bands; L. .8". Pl. XVII, 21.
- Ch 73 Half of a cornelian bead; plano-convex; 8-shaped design encrusted in white on both sides; original L. .9". Pl. XVII, 25.
- Ch 67 Two cornelian beads; cylindrical; L. .6" each; diam. .15" and .25" respectively. Pl. XVII, 27, 28.
- Ch 456 Cornelian bead; barrel shape; L. 1"; diam. at ends .25" and at middle .4". Pl. XVII, 29.
- Ch 269 Chalcedony bead; globular; diam. .55". Pl. XVII, 26.
- Ch 460 Lapis lazuli bead; cylindrical; L. .55". Pl. XVII, 30.

¹ *Proc. A. S. B.*, 1875, p. 134.

- Ch 280 Green felspar bead; cylindrical; L. .4".
- Ch 417 Conical ivory object; corrugated; fragment; L. 1.15". Pl. XVII, 24.
- Ch 358 Chank bangle fragment. Pl. XVII, 39.
- Ch 60 Chank bangle fragment with two original holes. Pl. XVII, 45.
- Ch 484 Chank bangle; diam. 1.9". Pl. XVII, 35.
- Ch 459 Chank ball with concentric circles incised; diam. 1.2". Pl. XVII, 47.
- Ch 368 Section of chank made by saw; L. 2.75". Pl. XVII, 33.
- Ch 412 Steatite cube with trefoil design on five faces and H-shaped design on another to which is fixed a copper pin; decoration encrusted in white against orange ground; max. L. .75". Pl. XVII, 41.
- Ch 248 Steatite seal with two lines of pictographs; boss at the back; 1" × 1" × .25". Pl. XVII, 44.
- Ch 372 Steatite seal with the device of an ibex and pictographs in three lines; boss at the back; the pictographs include 'the shield' and two man figures holding bow and arrow; 1" × 1" × .2". Pl. XVII, 38.
- Ch 458 Steatite seal with *Pipal* (?) tree device; no pictographs or animal figure; boss at the back; .8" × .8" × .1". Pl. XVII, 34.
- Ch 422, 483 Two terracotta rattles; diam. 2.2" and 2.5" respectively.
- Ch 371 Terracotta rectangular block with five holes; 2.4" × 1.6" × .9". Pl. XVII, 32.
- Ch 437 Terracotta biconical bead with incised decoration; L. .9". Pl. XVII, 37.
- Ch 358 Terracotta bangle fragment. Pl. XVII, 40.
- Ch 190 Terracotta bangle; diam. 2.9". Pl. XVII, 36.
- Ch 310 Terracotta bangle fragment with blotches of red; diam. 2.6". Pl. XVII, 31.
- Ch 332 Terracotta cone marked with chocolate bands; L. 2.6". Pl. XVII, 48.
- Ch 204 Terracotta bead; long barrel shape; L. 3.1"; diam. at ends .25" and at middle .4". Pl. XVII, 42.
- Ch 263 Terracotta 'cake' with incised strokes on one face; max. L. 4.2". Pl. XVII, 49.
- Ch 125 Terracotta toy-chariot wheel; diam. 3.35". Pl. XVII, 43.
- Ch 39, 128 Two terracotta toy-cart frames; fragments.
- Ch 195 Terracotta toy-cart frame; fragment; painted with cross-lines in red.
- Ch 46 Terracotta bull; head painted in red and neck pierced with a hole; L. 2.85". Pl. XXI, 7.
- Ch 179 Terracotta bird; body painted with cross-lines; L. 3.6". Pl. XXI, 2.
- Ch 239 Terracotta Mother goddess figurine; fragment; ht. 6". Pl. XXI, 1.
- Ch 43 Terracotta 'unicorn'; pierced with a hole at the belly; L. 2.6"; ht. 2.1". Pl. XXI, 4.
- Ch 424 Terracotta monkey figurine; pierced with a hole; painted in red; ht. 1.8". Pl. XXI, 3.

- Ch 369 Terracotta buffalo head fragment; L. 2.15". Pl. XXI, 5.
- Ch 376 Terracotta painted whistle; ht. 2.1". Pl. XXI, 6.
- Ch 463 Terracotta lump (clay mixed with straw), bearing impressions of two fingers by which it was held when wet; L. 3.3"; max. B. 2.5".
- Ch 252 Pottery vase; ht. 2.15". Pl. XXI, 16.
- Ch 319 Pottery vase; ht. 1.7". Pl. XXI, 19.
- Ch 330 Pottery cup with handle; ht. 1.7". Pl. XXI, 18.
- Ch 247 Pottery miniature jar-cover; dotted with red pigment; diam. 1.6". Pl. XVII, 46.
- Ch 28 Pottery vase; ht. 2.6". Pl. XXI, 23.
- Ch 34 Pottery vase; ht. 2.1". Pl. XXI, 24.
- Ch 171 Perforated pottery vase; ht. 2.6". Pl. XXI, 26.
- Ch 487 Pottery vase; cylindrical; two holes at the rim; ht. 1.9", Pl. XXI, 27.
- Ch 120 Pottery vase; ht. 2.4". Pl. XXI, 29.
- Ch 235 Pottery vase with pointed base; ht. 4.4". Pl. XXI, 30.
- Ch 35 Pottery vase; ht. 3.6". Pl. XXI, 31.
- Ch 468 Pottery tumbler; ht. 3.5". Pl. XXI, 32.
- Ch 474 Pottery vase; cylindrical; body decorated with three chocolate bands; ht. 3"; diam. at mouth 5".
- Ch 479 Pottery jar-stand; ht. 3.9"; diam. 9".
- Ch 329 Faience vase; white; ht. 1.7".
- Ch 445 Plain pottery trough with flanged neck; ht. 11.25". Pl. XX, 27.
- Ch 298 Painted pottery vase with chocolate bands on red wash; ht. 1.4". Pl. XXI, 20.
- Ch 206 Painted pottery vase with red slip at neck; below, black bands and three groups of black dots, four in each, on pink wash; ht. 1.3". Pl. XXI, 21.
- Ch 328 Painted pottery vase with red bands on pink wash; ht. .9". Pl. XXI, 22.
- Ch 425 Painted pottery vase with black bands on red slip; ht. 2.1". Pl. XXI, 25.
- Ch 401 Painted pottery vase with tapering bottom and flanged neck; ht. 25.5"; *Pipal* leaves, ovolos and zigzag lines placed vertically, followed by repeating crosslike patterns, in the upper band; in the lower band, concave squares forming an interlaced pattern; between two sides of squares an ovolo, and a dotted flower in the middle of each of the squares; decoration in black on dark red slip. Pl. XX, 28.
- Ch 448 Painted pottery vase with tapering bottom and flanged neck; ht. 26"; decoration in the lower band same as on Ch 401; in the upper band, figures of birds (probably peacocks), *Pipal* leaves and ovolos; decoration in black on dark red slip. Pl. XX, 26.

Besides the above about two hundred painted pottery fragments with decoration in black on red slip were registered. Some of the typical ones are illustrated in Pl. XX, 1-25.

- Ch 409 Flower between a pair of birds. Cf. also Ch 342. Fig. 1.
- Ch 144 Upper part of a vase; a peacock catching a serpent. Fig. 2.
- Ch 230 Peacock and flower. Fig. 3.
- Ch 342 Upper part of a vase; flower between a pair of birds. Fig. 4.
- Ch 87 *Pipal* leaves and birds, the latter represented in a conventionalized manner. Fig. 5.
- Ch 207 Upper part of a vase; peacock with hatched body. Fig. 6.
- Ch 107 Upper part of a vase; bird, a chain of bird-heads and *Pipal* leaf. Fig. 7.
- Ch 289 Probably lower part of a dish-on-stand; fowls in vertical rows, and branches. Fig. 8.
- Ch 243 Upper part of a vase; schematic representation of stags in a horizontal row. Fig. 9.
- Ch 157 Upper part of a vase; peacock, flowers and leaves. Fig. 10.
- Ch 234 Flowers in semicircular compartments. Fig. 11.
- Ch 210 Circle with a flower in centre and spreading leaves along the circumference. Fig. 12.
- Ch 214 Upper part of a vase; tree, and a peacock probably holding a serpent by its beak. Cf. Ch 144. Fig. 13.
- Ch 101 Flowers in compartments, and squares with incurved sides forming an interlaced pattern. Fig. 14.
- Ch 89 Comb-shaped branches placed one above another, and an entanglement of curves. Fig. 15.
- Ch 81 Upper part of a vase; flowers in semicircular compartments in the upper band and in the lower, hanging bird-heads and leaves. Fig. 16.
- Ch 145 Flowers in compartments; and below, cross-hatched triangles with incurved sides, and flowers. Fig. 17.
- Ch 10 Tree with biconical leaves as on Ch 214. Fig. 18.
- Ch 286 Upper part of a vase; *Pipal* leaves. Fig. 19.
- Ch 343 Upper part of a vase; hatched ovolo placed vertically, alternating with a zigzag line. Fig. 20.
- Ch 287 Fish-scale pattern. Fig. 21.
- Ch 25 Body of vessel divided into horizontal registers; dotted flowers in compartments in a band; and squares with incurved sides having a flower in the middle and a biconical leaf against each side of a square, forming an interlaced pattern, in another band. Fig. 22.
- Ch 14 Probably part of a dish-on-stand; an entanglement of branches indicated by curves. Fig. 23.
- Ch 218 Upper part of a vase; a continuous line of eye-shaped ovals placed vertically, alternating with dagger-shaped curves similarly placed. Fig. 24.
- Ch 284 Upper part of a vase; a horizontal row of ovolos, and leaves. Fig. 25.
- Ch 115, 118, 119, 349 Four fragments of painted dish-on-stand with incised decoration.

- Ch 237 Dish-on-stand fragment; the dish painted with floral pattern, in black on red slip.
- Ch 373 Mace-head; alabaster; decorated with incised lozenge pattern; ht. 2.45"; max. diam. 2.65". Pl. XIX, 36.
- Ch 394 Mace-head; alabaster; ht. 1.9"; max. diam. 1.7". Pl. XIX, 27.
- Ch 192 Mace-head; stone; ht. 1.5"; diam. 1.75". Pl. XIX, 26.
- Ch 339 Stone ring; fragment; diam. 2". Pl. XIX, 31.
- Ch 205 Chert weight; cubical; 1.65" × 1.65" × 1.2". Pl. XIX, 32.
- Ch 74, 355, 383, 439, 411 Five chert flakes; L. 1" to 3.3". Pl. XIX, 29, 25 24, 23 and 30 respectively.
- Ch 202 Chert flake with serrated edge; L. 1.6". Pl. XIX, 28.
- Ch 482 Chert core; L. 3.3". Pl. XIX, 35.
- Ch 303 Chert polisher; flat and rectangular; indented mark of rubbing; L. 4.5"; B. 1.7"; thickness .25". Pl. XIX, 33.
- Ch 395 Chert polisher fragment, like Ch 303; L. 4.2"; B. 1.4"; thickness .3". Pl. XIX, 34.
- Ch 438 Copper knife; L. 4.35". Pl. XLI, 5.
- Ch 359 Copper object of 8-shape; L. 1.65". Pl. XLI, 15.
- Ch 76 Copper fishing hook; L. 1". Pl. XLI, 14.
- Ch 275 Copper awl; L. 2". Pl. XLI, 8.
- Ch 66 Copper chisel; L. 2.25". Pl. XLI, 9.
- Ch 62 Copper chisel; L. 4.8". Pl. XLI, 10.
- Ch 465 Copper awl, bent; L. 4.7". Pl. XLI, 11.
- Ch 201 Copper awl; L. 3.95". Pl. XLI, 13.
- Ch 452 Copper awl; L. 5.7". Pl. XLI, 7.
- Ch 415 Copper borer; L. 2.7". Pl. XLI, 12.
- Ch 464 Copper spear-head; L. 7.4". Pl. XLI, 6.
- Ch 400 Copper bangle fragment; diam. 1.95". Pl. XLI, 16.

NOTE.—Antiquities from Mound 3 are Ch 1-75, 78-204, 206-234, 247-317, 401, 445, 448, 461, 463 (depth 1' to 6' below surface of trench); and Ch 318-368, 372-400, 402-418, 424-444, 446-447, 449-451, 455-458, 402 and 481-489 (depth 6' to 12' below surface of trench). Those from Mound 1 are Ch 76, 77, 205, 235-246, 369-371, 419-423, 452-454, 459, 460, 464-480 (depth 1' to 6' below surface of trench).

CHAPTER IV. FURTHER JOURNEY ALONG THE INDUS

Stay at Dokri.—Returning to Sind in the autumn of 1930, we resumed the survey, starting from the small town of Dokri in the Larkana District, which is the headquarters of the Labdariya Taluka and has a station on the Ruk-Kotri Section of the North Western Railway. Its recent importance is due to its being the halting place for travellers visiting the excavations at Mohenjo-daro which is situated at a distance of 9 miles. For various reasons, therefore, Dokri was considered to be a convenient starting point. Enquiries made from local officers of the District showed that there existed a number

of *Daros* (mounds) in the eastern portions of the Talukas bordering on the Indus, viz., in Rato-Dero, Warah, Mehar, Khairpur Nathan Shah, Dadu and Sehwan. It was thought necessary to inspect these mounds before moving up to the western section of the District.

Sehwan.—The first place to be visited was Sehwan. It is famous throughout Sind on account of the shrine of the saint Lal Shahbaz in whose memory a fair is held here annually. Sehwan, which in the past was known as 'Sijistan', is usually identified with *Sindimana* of Alexander's historians and with *Sadusan* 'to the west of the Mihran' mentioned by Ibn Haukal and other Arab geographers.¹ The province, of which it was the capital, comprised, according to the *Chachnama*,² the whole country of Western Sind up to the borders of Makran. Its main portion must have been the 'Kohistan' or the hilly tract which lies partly in Larkana and partly in Karachi District. Sehwan admittedly had in ancient times a great strategic importance.³ It is surrounded by the waters of the Aral on the north and west, and partly also on the south, and by the Indus on the east, and it commands the Laki Pass by blocking which the city could successfully arrest the entry of invaders from Baluchistan. In the *Tarikh-i-Tahiri*,⁴ the Laki Pass is said to have been the 'key of the country'. The Arab invader Muhammad Kasim, after having stormed and captured the port of Deval in the Delta, proceeded to a place called Nirun by road, while his troops were despatched by boats up the river Indus. After taking Nirun he advanced farther north by road, in order to conquer the country of Sijistan or Siwistan, that is Sehwan, which had to be dealt with first before he could march on Bahmanabad on the other side of the Indus, in the present Nawabshah District. This meant a backward journey to Nirun, situated at or near Hyderabad, whither he came for crossing the river. It shows the great importance that must have been attached in those days to the position of Sehwan. The strategic importance of this place was also recognised by British military officers, just before the conquest of Sind, when it was pointed out that "a force at Kurachee, with detachments at Sehwan and Bukkur, would hold Sind in complete subjection."⁵

Land route followed by Muhammad Kasim.—The land route followed by the Arab invader through Lower Sind, from the port of Deval in the Delta to Sehwan, seems to have been the one between the present course of the Indus and the chain of hills that stretches northward through the Tatta Division, along the Laki hills and their southern continuations. This track, which passes through a hilly country, must have been used by travellers from time immemorial. Being joined with a similar line of communication, which connects the Makli hills, through Bhambor and Gujo, with the Karachi side, it must have served

¹ Elliot, *History of India*, Vol. I, p. 401.

² *Ibid.*, p. 138.

³ *Larkana District Gazetteer*, p. 36.

⁴ Elliot, *History of India*, Vol. I, p. 285.

⁵ *Selections from the Records of the Bombay Government*, No. XVII, New Series, Part I, p. 266.

as one of the principal routes leading from Sind to the Western countries. The only other route from the coast of the Arabian Sea to Sehwan would be the difficult track that lies through Thano Bula Khan across Kohistan. Its importance for military purposes was admitted by Capt. Delhoste in 1839. But Muhammad Kasim must have naturally felt the necessity of keeping himself in close touch with his army who went by boats along the Indus, and for him the Kohistan route would have proved exceptionally difficult and inconvenient. It is, therefore, most unlikely that he should have preferred this route to the other. A tradition persistent at Gharo avers that the Arab general coming from Makran halted at Vatteji which is on the Karachi-Tatta road. Although its authenticity cannot be proved, the story is quite in accord with the circumstances of the expedition as related by Arab historians.

The Fort at Sehwan.—In view of the identification of Sehwan with Sindimana accepted by Cunningham¹ and others, it has often been contended that the ruined fort outside the modern town goes back to the time of Alexander the Great. But nothing could be more erroneous. On inspection it appeared to be the remains of a fort of Muhammadan times, in the débris of which glazed pottery and bricks of this period were lying in abundance. It is probable, however, that at this site there had existed some ancient buildings and over their remains the fort was erected. According to some visitors, pre-Muhammadan remains are occasionally found at its lower levels. It is even possible that the modern town is built on earlier Hindu ruins, but as Sehwan is a living town this could not be verified. In view of its being on an eminence it does not seem likely that the site of Sehwan has much changed since the earliest times.

The process of decorating cornelian.—At Sehwan, the opportunity was taken to investigate the interesting process of decorating cornelian with a permanent white paint. This appears to have been practised here when Bellasis visited the place about the middle of the last century. He collected some samples of encrusted cornelian beads in his excavations at Bahmanabad,² and such beads have also been reported from other ancient sites of India.³ Recently the excavations at Mohenjo-daro and Chāñhu-daro,⁴ as well as Kish in Mesopotamia, have yielded some examples of encrusted cornelian dating from the Chalcolithic period. In view of these discoveries it was important to learn the details of the technique. The process as practised in out-of-the-way places of Sind might, it was presumed, turn out to be a survival of what prevailed in the Early times. On enquiry it was found that this art had now practically died out in Sind; at Sehwan, the process was known only to a single man named Sahebdino who was about seventy-five years old when we saw him. A brief account of the process which is rather a simple one

¹ *Ancient Geography of India*, 2nd ed., p. 303.

Cousens, *Antiquities of Sind*, p. 55, and Pl. XIII.

² There are some cornelian beads with white incrustation in the Indian Museum, Calcutta, from Indor Khara (Ir. K. 35) in U. P., Nagar in Eastern Rajputana (Nr. 24) and Maribetta Hill in N. Coorg (M. B. 5-9).

⁴ *Ante*, p. 38.

is given here.¹ Half a *chhatak* of washing soda is dissolved in two *tolas* of water, in which are rubbed pieces of the young shoots of the *Kirar* plant (*Capparis aphylla*). The juice of the *Kirar* is thoroughly mixed in water, and the liquid is then strained through a piece of linen. The pattern is then drawn on the cornelian with a steel pen, using this liquid. Encased in an open clay mould, with the decorated portion exposed, the stone is next fired between two layers of charcoal. After some time the mould is taken out of the fire and allowed to cool under a cover. The soot adhering to the cornelian, from which the mould has now been separated, is then brushed off, bringing into view the decoration which has now permanently stuck to its body and assumed white colour. This artificial white incrustation set against a red background seems to have been much prized in older days, and continued to be in vogue even as late as the reign of the Talpur dynasty. After the British conquest cornelian and other semi-precious stones gradually went out of use, as more attractive and cheaper jewels of artificial make began to be imported into the market of Sind. The *Kirar*, which plays such an important part in the decoration of cornelian, grows wild in Sind, Baluchistan, parts of the United Provinces and Southern Punjab, and at spring-time puts on masses of small red flowers. It serves as a fodder for camel, sheep and goats, and its fruits are eaten by some people in the form of pickles. The word *Kirar* is derived from Sanskrit *Karīra* which occurs for the first time along with *Kharjjura* or the date-palm in the *Taittirīya-samhitā* of the *Yajurveda*.² In the *Satapatha-Brāhmaṇa*³ there is a reference to the scattering of *Karīra* fruits on dishes of curd. These references show that the Vedic people were thoroughly acquainted with the uses of this plant.

Badah.—On return from Sehwan our camp was shifted from Dokri to Badah which is also a station on the Ruk-Kotri Line. Near the village of Badah, on the way to Mehar, there is a mound called Adatjo-daro, about 20 feet high, which had been examined previously by Mr. Dikshit⁴ in 1925-26, and also visited by us in 1927-28. As he had taken it to be of prehistoric antiquity, it was decided to carry out some trial excavations at the place. A trench 50'×20', running east to west, was driven through the heart of the mound and made about 6' deep. Pottery, painted or otherwise, was conspicuous by its absence, whether on the surface or in the excavated area. As regards chert flakes, one was found by Mr. Dikshit and four tiny pieces, none more than an inch long, have been recently collected from the spot by Mr. K. N. Puri of the Archaeological Department. Three cornelian beads (Bd 1-3), one of chank shell (Bd 4) and two of crystal (Bd 5-6) were found in the excavations. Of the cornelian beads (Pl. XXXIII, 73-75) one is spherical and the other two are lozenge-shaped. The remaining three beads (Pl. XXXIII, 76-78) are of the barrel type. Part of a copper pin or awl (Pl. XLI, 4), three pieces

¹ I brought Sahabdin to the notice of Mr. Mackay at Sehwan, where the former gave a demonstration of his process. Mr. Mackay has since published an account of it in *Man*, September, 1933, 150.

² Macdonell and Keith, *Vedic Index*, Vol. I, p. 139.

³ *Sacred Books of the East*, Vol. II, p. 394, and n. 2.

⁴ *A. S. R.*, 1925-26, p. 99.

of terracotta bangles (Pl. XXXIV, 8) and the fragment of a terracotta animal figurine, which might represent a dog, were also collected. Some of these, if not all, can reasonably claim prehistoric antiquity. The only other noteworthy relics are pieces of ivory hair-pins (Bd 7, 8: Pl. XXXIII, 79, 80) and chunk shell bangles. But no structural remains could be found; and as the existence of some modern burial was apprehended in a part of the trench, further work had to be stopped. The mound seemed to represent a very small habitation of the prehistoric period.

Mounds in Warah and Rato Dero.—A few mounds in the Warah and Rato Dero Talukas were also visited from Badah. Close to it is the site well known in the District as Dhamrahojo-daro, already reported on by Banerji and Dikshit, which seems to be purely a Buddhist settlement comprising a stūpa and monasteries. The other mounds are those at Bothro to the south-west of Dhamraho on the road to Mehar, Nasuijo-daro, farther south on the same road, and Chanhajo-daro to the north of Nasirabad on the way to Vaggan. Probably older than these are the mounds called Bambhrojo-daro,¹ in the Rato Dero Taluka, about 5 miles from Naundero Railway station, which were inspected by Mr. Dikshit in 1925-26. But at none of these places was there any sign of prehistoric occupation. Investigations along the Indus up to Phulji and Dadu further made it clear that the only traces of the 'early' culture surviving in this area were those at Lohumjo-daro, a site already discovered by Mr. Dikshit and brought to the notice of the Archaeological Department.²

Lohumjo-daro.—On the 18th November, we arrived at Lohumjo-daro, which is within two furlongs of Piaro Goth station on the Ruk-Kotri Line and near the well-known village of Pat in the Dadu Taluka. The mounds (Pl. V, a) are situated in a plain which is quite barren in their vicinity, but towards the river-side green patches of cultivation are frequently to be seen. To the north-east of Lohumjo-daro there is a lake called Chikan Dhand which irrigates all the neighbouring area. In times of inundation, when there is heavy rush of water from the Indus, this lake overflows its banks, and the neighbourhood of the mounds becomes one unbroken sheet of water. There is a protective *bandh* all along the river bank, commencing from Larkana and extending up to Sehwan. In spite of it the flat plain of Lohumjo-daro is regularly subjected to the ruinous effects of floods. It is, therefore, no wonder that the area of the prehistoric settlement, as it now stands, should be only about 900 ft. long by 600 ft. broad. The mounds reach a height of 23 ft. above the plain, and stretch more or less from east to west. In recent times they seem to have been considerably disturbed, evidently by local treasure-hunters; the last attempt at such spoliation is said to have been made at the instance of a Taluka officer, who, however, was possibly actuated by a genuine antiquarian spirit. The pits dug by him on the mounds all testify, however, to careless digging which at places has effaced the original features of the site.³ These encroach-

¹ A. S. R., 1925-26, p. 100.

² *Ibid.*, pp. 99-100.

³ This is indicated in Pl. XLIII by crooked lines in dots.

THE MOUNDS OF LOHUMJO-DARO



(a) THE MOUNDS AS SEEN FROM A DISTANCE.



(b) A NEARER VIEW FROM WEST, SHOWING THE POSITION OF
A TRENCH BETWEEN TWO MOUNDS.



(c) A TRENCH SHOWING WALLS IN THE TRENCH



(d) A TRENCH SHOWING WALLS IN THE TRENCH

ments of man and nature have thus combined to bring about its thorough denudation. During his visit Mr. Dikshit was able to collect 'a few copper rods, chert scrapers, shell fragments and pottery distinctive of the Mohenjo-daro epoch', as he stated in his report. Objects of a like nature were also noticed during our inspection. We were further convinced that the northern side of the principal mound was best suited for test operations, as it showed little sign of disturbance. While at Dokri we had engaged a few Brahui workmen to accompany us from place to place throughout the season. A re-inforcement was now made at Lohumjo-daro for the intended excavations.

Excavations (Pl. XLIII).—Trench 1, 70 feet long by 20 feet broad, was dug east to west on the northern side of the mounds (Pl. V, b). Its top was 9 feet above the level of the surrounding plain. At its western end we reached a depth of only 10' 6" below its surface, but at the eastern end the digging was carried down in a pit to the water level at a depth of 20'. Trench 2 was driven into the mound, north to south, branching off from the middle of Trench 1 at right angles. In Trench 1, remains of a tiny wall of burnt bricks were exposed, and another wall, but of a more substantial character, was laid bare at the southern end of Trench 2. The latter wall was followed up to a length of 33' (Pl. V, c). It rested on a substratum of sun-dried bricks, showing a variation in level, due to unequal sinking, from 3" to 1'. A mass of sun-dried bricks in a regular layer was also found below the level of the burnt brick walls in the middle of Trench 1. The bottom of the walls in Trenches 1 and 2 was found resting about 4' above the plain. In both the trenches, débris of pottery etc. were lying underneath the layer of sun-dried bricks, which therefore seemed to intervene between *two strata* of occupation (Pl. V, d). Trench 2, however, was not sunk deeper than the bottom of the walls exposed. The bricks used in the principal wall showed at least three different sizes, *viz.*, $11\frac{1}{2}'' \times 5\frac{1}{2}'' \times 2\frac{3}{4}''$, $10\frac{3}{4}'' \times 5'' \times 2\frac{1}{2}''$ and $9\frac{3}{4}'' \times 4\frac{1}{2}'' \times 2''$. Masses of débris of the earlier level were cleared in Trench 1, but in this deeper cutting there was no trace of any structure of burnt bricks. It is possible that the later people got most of their bricks by digging into the buildings of the earlier period which lay buried underneath. The occasional use of broken bricks in the late period walls points to this conclusion. The deep pit in Trench 1, which was continued down to water level, proved rather instructive. The finds of pottery etc. became fewer and fewer as the digging went down. But they were not altogether absent even at the bottom of the pit. This showed that the earliest level of occupation lies deeper still, an experience similar to that gained from excavations at Mohenjo-daro and Jhukar. From the earlier levels, that is from below the brick walls, was collected painted pottery of the typical 'Indus' type, a thick ware with designs in black on dark red slip. It was found lying from about 2' below the level of the plain to about 4' above it. The later levels, on the other hand, yielded an inferior class of ware differing from the other not only in fabric but also in decoration. Trench 2 gave us exclusively this latter class of pottery. It was recovered in the two trenches from 5' to 10' above the ground level.

The principal finds from the two trenches are described below (pp. 52—58) under separate heads, according as they come from the upper level or the lower. But this does not mean that a particular object must necessarily be earlier or later than another. Such chronological distinction could be made only in the case of pottery, particularly the painted fabric, as in this case we could be guided by stratigraphical as well as technical considerations.

Early and Late Painted Potteries compared.—(a) *The Clay.*—The early pottery is usually of a thick fabric and made of well-levigated clay. It is thoroughly baked, and after firing has assumed a deep terracotta red. Sand is visible in the ware in large quantity along with particles of mica. The pottery of Mohenjo-daro, as Mr. Mackay observes, "frequently has sand or lime, or both, mixed with the clay, more often in the painted ware than in the plain ware. There seems to have been a natural admixture of sand in the alluvial clays used at Mohenjo-daro".¹ The clay used by the Lohumjo-daro potters was also of a kindred character; at both the sites it must have been obtained from the Indus silt, which explains the presence in it of sand particles. Incidentally, this proves the existence of the river near Lohumjo-daro in the Chalcolithic times as well. As regards lime, it should be noted that this might be had either by burning chank shells, mother-of-pearl valves, or limestone. In some countries pounded limestone was used in the paste as a *dégraissant*.² The 'Indus' potters had probably some use for mother-of-pearl valves. One of the potsherds from Lohumjo-daro (Lh 112) has sticking in its core part of a valve, which originally might have been lying along with others near the potter and got accidentally mixed up with the paste. The 'late' ware is also characterized by its thickness, but it is not so well fired. Due to indifferent baking this pottery has taken a very much dull appearance, as compared to the 'early' ware. The paste again is not so fine; sand particles are seldom found in the clay; and the make is undoubtedly inferior.

(b) *Colouring.*—The main difference between the two wares subsists, however, in their surface treatment. The early pot-fabrics have a bright red slip over which the decoration is applied in black. These colours are permanent and very evenly applied. The 'late' ware has either a cream slip or light red wash on which the decoration is made in black or chocolate. Occasionally, a polychrome effect is gained, as in the 'Amri ware', by introducing brown or red between two black or chocolate bands. Again, the colours are not very evenly applied. In effect this pottery looks pale, having none of the richness of colour characteristic of the 'early' fabric.

(c) *Designs.*—There is also considerable difference in point of ornamentation between the respective potteries (Pl. XXII). Some of the characteristic designs of the 'early' pottery are: concave squares in continuous parallel rows, often combined with such motifs as dotted flowers; the flying bird; plant consisting of continuous parallel wavy lines laid horizontally, intersected at intervals by uprights; the *Pipal* leaves; comb-shaped branch; and biconical leaves in

¹ Mohenjo-daro. Vol. I, p. 289.

² Frankfort, *Studies in Early Pottery of the Near East*, Part I, p. 6.

vertical rows, each row separated from the other by thick parallel curves laid horizontally. Some designs occurring on the 'late' pottery do not appear on the 'early' specimens at all. These are, *e.g.*, cross-hatched eye-shaped motifs in a row, eye-shaped compartments with a ball in each, concave squares alternating with balls, and a row of cross-hatched triangles with concave base.

'Late' Pottery of Jhukar recalled.—Thus the two wares of Lohumjo-daro differ from each other in a number of essential details, and there is little doubt that they belong to two different epochs. The stratification of Lohumjo-daro is entirely corroborative of the results recorded in the excavations of Jhukar (above, p. 10). There also, the two chalcolithic strata yielded two distinct classes of pottery. The 'late' specimens of these sites resemble each other so closely that they cannot but be attributed to the same epoch and to the same phase of the Indus civilization. Both at Jhukar and at Lohumjo-daro they were preceded by the identical 'Early' pottery of Harappa and Mohenjo-daro, and it appears that while these cities perished and were deserted, the culture survived in some form at Jhukar and at Lohumjo-daro down to a later period. The inferior type of painted pottery that was now in vogue shows, however, the extent to which the aesthetic standard had fallen, and in this one can clearly recognize that an era of cultural degeneration had steadily set in.

Finds from Trenches 1 and 2.—Altogether two hundred and twenty-nine objects were registered (Lh 1-229; pp. 52—58) from the two trenches of Lohumjo-daro, including the specimens of painted pottery discussed above. A number of entire pots were discovered which throw light on the question of typology. Two examples are worthy of special mention, *viz.*, Lh 90 and 92 (Pl. XXII, 24 and 18), both of which come from the Late level. They have narrow mouth, bulged out body and pointed bottom, in which respects they exactly resemble some of the 'late' vases from Jhukar. Lh 1 is another 'late' vessel which is now without paint (Pl. XXXVI, 38). It corresponds to the aforesaid pots in having narrow mouth and pointed bottom, but it had a handle which is now missing. From Early levels a collection was made of plain pottery vases of miniature size, which represent some of the types of vessels that must have been actually used for household purposes. Among these, vases with flanged neck and high ring-base, and tumblers may be mentioned (*e.g.*, Pl. XXXVI, 30 and 40). Fragments of vessels with incised strokes at the neck like those from Jhukar were found here also at the Late level (Pl. XXII, 35, 36). Examples of incised pottery of the Early period are fragments of offering dishes-on-stand. The interior of these bears incised strokes denoting probably the shooting rays of the sun. Terracotta bull figurines came from both the levels, all of them representing the humped species. In these specimens no attempt is made to separate either the fore-legs or the hind legs of the animal. The torso, Lh 229, is interesting as it represents a figure with exaggerated buttocks (*steatopigy*). Parallels of this type are known from Mohenjo-daro. Among other terracotta objects there were spindle-whorls, toy-cart frames, a cone, bangles, a painted rattle, a bird-shaped whistle and model 'cakes' (Pl. XXII). The significance of the last mentioned article, of which hundreds

have been discovered at the Indus sites, is far from clear. In the majority of cases it is only half-burnt, and the clay contains a mixture of something like straw or husk. Some of the examples, for instance those discovered at Chāñhudo, show a depression on both sides. This could happen only if they were held when wet by the tips of two fingers; and it is possible that the objects were meant to be thrown into the fire as an oblation and not for the purpose of baking.

Quite a large number of beads were brought to light at Lohumjo-daro (Pl. XXXIII; pp. 55-56, 58), the commonest being the disc-shaped ones of steatite. Besides, there were cornelian beads of both short and long barrel types, a bead of greenish soapstone of biconical shape with concentric circles incised (Lh 122), some examples in terracotta of barrel shape, and a number of them made of a kind of vitreous paste, of cylindrical, barrel, or globular shape. A round bead of this paste is decorated with incised slanting strokes (Lh 9). Bangles of terracotta were in use side by side with those of vitreous paste or faience. The latter, which bore chevron and other patterns incised, must have been regarded as a finery. Among implements we should mention a chert core and several flakes, and a spear-head, a dagger, a small knife, a razor and an awl of copper (pp. 55-56, 58). A beautiful chalcedony weight of the usual cubical shape (Lh 22) was also found. But an object to which much importance naturally attaches is the steatite boss-seal (Lh 2), bearing about a dozen pictographic signs in a line and the device of the so-called unicorn (Pl. XXXIII, 8; p. 56). This, more than anything else, proved the identity of the culture with that of Mohenjo-daro. The unicorn figure on the Indus seals like the present one has been the subject of much discussion and the real identity of this animal is not yet established.¹ It shares the features of both the bull and the antelope, which might therefore correspond to the *go-mṛiga* mentioned in the Vedic literature.² The scholiast Sāyana takes the term to mean an animal sprung from a cow and a male gazelle or antelope, while Eggeling thinks it may have belonged to a species of 'bovine antelopes' no longer found in India.³ According to other scholars, however, it denotes the 'Gayal', *Bos gavaeus*.

A Catalogue of the principal objects from Lohumjo-daro

I. LOWER STRATUM (DEPTH ABOUT 2' BELOW GROUND LEVEL TO ABOUT 4' ABOVE GROUND LEVEL).

Lh 53 Painted potsherd; tree with branches indicated by wavy lines; black on dark red slip. Pl. XXII, 1.

¹ *Mohenjo-daro*, Vol. II, p. 382.

² *Vedic Index*, Vol. I, s.v. *go-mṛiga*.

³ *Sacred Books of the East*, Vol. XLIV, p. 338. n. I.

- Lh 66 Painted potsherd; squares with concave sides, making eye-shaped compartments with a stroke in each; the compartments form a circle around each square; also dotted flowers within circles; black on dark red slip. Pl. XXII, 21.
- Lh 67 Painted potsherd; fish-scale, and tree with branches indicated by wavy lines; black on dark red slip. Pl. XXII, 3.
- Lh 68 Painted potsherd; squares with concave sides, making eye-shaped compartments with a stroke in each; the compartments form a circle around each square; black on dark red slip.
- Lh 72 Painted potsherd; cross-hatched squares with concave sides in a row; black on dark red slip.
- Lh 74 Painted potsherd; squares with concave sides, making eye-shaped compartments with a stroke in each, the compartments forming a circle around each square; black on dark red slip.
- Lh 136 Painted potsherd; curvilinear strokes as in Pl. XXII, 12 (Lh 166); black on dark red slip. Pl. XXII, 26.
- Lh 75 Painted potsherd; tree and chevron; black on dark red slip. Pl. XXII, 20.
- Lh 146 Painted potsherd; comb-shaped branch; black on dark red slip. Pl. XXII, 25.
- Lh 111 Painted potsherd; hatched biconical leaves in a column alternating with columns of horizontal strokes; black on dark red slip. Pl. XXII, 19.
- Lh 112 Painted potsherd; *Pipal* leaf, and zigzag lines forming branches; black on dark red slip. Pl. XXII, 13.
- Lh 129, 133 Painted potsherds; tree with branches indicated by wavy lines; black on dark red slip.
- Lh 137, 138, 142, 161 Painted potsherds; squares with concave sides, making eye-shaped compartments with a stroke in each; the compartments form an elliptical figure around each square having a central dot; black on dark red slip. Pl. XXII, 14 (Lh 137).
- Lh 162 Painted potsherd; hatched biconical leaves in columns around the neck of vase; black on dark red slip. Pl. XXII, 2.
- Lh 163 Painted potsherd; hatched biconical leaves in columns; dagger-shaped curves laid horizontally between columns; black on red slip. Pl. XXII, 11.
- Lh 39 Painted potsherd; dish fragment with arrow-mark at edge; comb-shaped branches in centre, enclosed by concentric circles and a band of semi-circular compartments each having a hatched crescentic figure; black on dark red slip. Pl. XXII, 28.
- Lh 164 Painted potsherd; sloping and hatched biconical leaves at neck of vase; black on dark red slip. Pl. XXII, 5.

- Lh 166 Painted potsherd; *Pipal* leaf and thick curvilinear strokes; black on dark red slip. Pl. XXII, 12.
- Lh 167 Painted potsherd; tree motif with thick curvilinear strokes probably indicating leaves; black on dark red slip. Pl. XXII, 4.
- Lh 181 Painted potsherd; tree with branches indicated by wavy lines; black on dark red slip.
- Lh 188 Painted potsherd; lower portion of a flying bird in a band; below in another band, balls arranged in a triangular fashion; black on dark red slip. Pl. XXII, 29.
- Lh 194 Painted potsherd; tree with cross-hatched branches; black on dark red slip. Pl. XXII, 27.
- Lh 139 Plain pottery vase with ring-base; ht. 2·7". Pl. XXXVI, 24.
- Lh 141 Plain pottery vase with ring-base; ht. 2·85". Pl. XXXVI, 23.
- Lh 147 Plain pottery vase with ring-base; ht. 3". Pl. XXXVI, 22.
- Lh 203 Plain pottery vase with ring-base; ht. 3". Pl. XXXVI, 30.
- Lh 63 Plain pottery vase with ring-base; ht. 2·8". Pl. XXXVI, 31.

NOTE.—The above five vases bear impression of matting on the base, instead of the usual mark of the wheel.

- Lh 4 Plain pottery vase; ht. 1·5". Pl. XXXVI, 12.
- Lh 25 Plain pottery vase; ht. 1·6". Pl. XXXVI, 13.
- Lh 28 Plain pottery vase; ht. 2·5". Pl. XXXVI, 34.
- Lh 24 Plain pottery vase with high shoulder; ht. 2·75".
- Lh 27 Plain pottery vase with long shoulder, attenuated body and narrow mouth; ht. 3·3" Pl. XXXVI, 33.
- Lh 29 Plain pottery vase; ht. 1·75".
- Lh 26 Plain pottery tumbler; ht. 1·75". Pl. XXXVI, 16.
- Lh 49 Plain pottery tumbler with flat base; ht. 4·6". Pl. XXXVI, 40.
- Lh 228 Plain pottery tumbler; ht. 1·6". Pl. XXXVI, 14.
- Lh 7, 143, 180, 201 Four fragments of offering dishes-on-stand; interior decorated with incised strokes, probably denoting shooting rays of the sun. Pl. XXII, 48 (Lh 201); Pl. XXXI, 7 (Lh 7).
- Lh 172 Perforated pottery fragment.
- Lh 30 Miniature terracotta lid; diam. 1·25". Pl. XXII, 42.
- Lh 82 Pottery lid; diam. 3·25". Pl. XXII, 39.
- Lh 31 Terracotta ball; diam. 1·3".
- Lh 51 Terracotta ball; diam. 2·5".
- Lh 34 Terracotta bull figurine; max. L. 3".
- Lh 10 Terracotta bull figurine; max. L. 2·3". Pl. XXII, 44.
- Lh 115 Terracotta bull figurine; max. L. 2·8".
- Lh 116 Terracotta bull figurine; max. L. 3·35". Pl. XXII, 51.
- Lh 140 Terracotta bull figurine; max. L. 3·2". Pl. XXII, 47.
- Lh 175 Terracotta bull figurine with a hole at the neck for string; max. L. 4·9". Pl. XXII, 52.
- Lh 176 Terracotta bull figurine; L. 3·05".
- Lh 186 Terracotta bull figurine; L. 3·4". Pl. XXII, 53.

- Lh 81 Terracotta toy-cart wheel; diam. 3·1". Pl. XXII, 41.
- Lh 202 Terracotta toy-cart wheel; diam. 3·25".
- Lh 184 Terracotta painted rattle; diam. 2·3".
- Lh 14, 38, 185 Three terracotta toy-cart frames. Pl. XXII, 50 (Lh 185).
- Lh 114 Terracotta cone; broken at end; L. 1·6". Pl. XXII, 45.
- Lh 177 Terracotta; part of a conduit; L. 7". Pl. XXII, 49.
- Lh 170 Terracotta bird-shaped whistle; ht. and L. 1·6". Pl. XXII, 43.
- Lh 169 Terracotta toy-cart wheel; diam. 3·3". Pl. XXII, 40.
- Lh 168 Terracotta painted rattle; diam. 2·2". Pl. XXII, 37.
- Lh 36 Terracotta 'imitation cake'; triangular; max. L. 3·9". Pl. XXII, 46.
- Lh 110 Steatite bead; discoid; diam. ·55". Pl. XXXIII, 12.
- Lh 173 Three steatite beads; discoid; diam. ·4" each. Pl. XXXIII, 11.
- Lh 174 Steatite bead; discoid; diam. ·4".
- Lh 149 Cornelian bead; dark red; short-barrel type; L. ·45"; diam. ·2".
Pl. XXXIII, 21.
- Lh 3 Felspar bead; apple green; flat; segmental in section; L. ·48".
Pl. XXXIII, 16.
- Lh 159 Steatite bead; black; cylindrical; L. ·9". Pl. XXXIII, 26.
- Lh 61 Green stone bead; short-barrel type; L. ·28"; diam. ·28". Pl. XXXIII, 18.
- Lh 65 Vitreous paste bead; long-barrel type; L. ·7"; diam. ·25". Pl. XXXIII, 17.
- Lh 58 Vitreous paste bead; cylindrical and corrugated; L. ·4"; diam. ·2".
Pl. XXXIII, 14.
- Lh 9 Vitreous paste bead; round; diam. 1·1". Pl. XXXIII, 10.
- Lh 17 Vitreous paste bead; globular; diam. ·3". Pl. XXXIII, 13.
- Lh 80 Five terracotta beads; long-barrel type; L. between 1·4" and 1·7".
One of them, L. 1·9", is attached to a short-barrel bead of vitreous paste. Pl. XXXIII, 1.
- Lh 171 Terracotta bead; biconical; decorated with incised strokes; ht. ·75";
diam. ·95". Pl. XXXIII, 4.
- Lh 200 Terracotta bead; round; incised strokes; ht. ·65"; L. ·95". Pl. XXXIII, 5.
- Lh 6, 35 Three terracotta bangle fragments; Lh 35, diam. 2·1". Pl. XXII, 46 (Lh 6).
- Lh 21 Three fragments of vitreous paste bangles, two having incised chevron and another, corrugated outer face. Pl. XXXIII, 7.
- Lh 18 Fragment of vitreous paste bangle with chevron pattern incised. Pl. XXXIII, 6.
- Lh 144 Chank shell bangle; fragment; pierced with two holes. Pl. XXXIII, 2.
- Lh 79 Two fragments of vitreous paste bangles with incised slanting lines,
Pl. XXXIII, 6 a.
- Lh 76 Chessman of vitreous paste; ht. ·6". Pl. XXXIII, 20.
- Lh 56 Chert core; L. 3·2".

- Lh 59 Chert flake; L. 2·5". Pl. XL, 2.
- Lh 109 Chert flake; L. 1·95". Pl. XL, 1.
- Lh 205 Chert flake; L. 2·4".
- Lh 19 Copper spear-head; leaf-shaped; L. 5·52". Pl. XLI, 34.
- Lh 62 Copper razor; L. ·88". Pl. XLI, 32.
- Lh 206 Copper awl; bent; max. L. 1·6". Pl. XLI, 25.
- Lh 217 Copper knife; fragmentary; L. 4·8". Pl. XLI, 33.
- Lh 20 Bit of copper overlaid with gold; probably part of some ornament.
Pl. XXXIII, 24.
- Lh 199 Copper bead; short-barrel type; L. ·22". Pl. XXXIII, 25.
- Lh 187 Copper ring; evidently meant for a child; diam. ·6". Pl. XXXIII,
27.
- Lh 5 Bone pin, damaged at end; L. 2·55". Pl. XXII, 33.
- Lh 22 Chalcedony weight; cubical shape; ·9"×·8"×·8". Pl. XXXIII, 3.
- Lh 2 Steatite boss seal with the device of a unicorn and a line of picto-
graphs; slightly damaged; L. and B. 1·2". Pl. XXXIII, 8.
- Lh 37 Stone ball; diam. 1·9".
- Lh 57 Stone ball; diam. ·88".

II. UPPER STRATUM (DEPTH ABOUT 5' TO ABOUT 10' ABOVE GROUND LEVEL).

- Lh 13 Painted potsherd; fragment of a cylindrical vase with chequer pattern,
the compartments being alternately in cream and red, and their out-
lines in chocolate; cream slip. Pl. XXII, 10.
- Lh 90 Painted pottery vase with narrow mouth, bulged out body and pointed
base; ht. 6·2". A row of cross-hatched triangles with concave base
around the shoulder in black; slip and decoration practically gone.
Pl. XXII, 24.
- Lh 91 Painted pottery vase with pointed bottom; ht. 4·8"; only traces of
paint remain. Pl. XXXVI, 37. Cf. Pl. XXII, 18 (Lh 92).
- Lh 92 Painted pottery vase with narrow mouth, bulged out body and pointed
base; cross-hatched squares with concave sides alternating with balls
in a row at the shoulder; decoration in chocolate on cream slip;
chocolate bands above and below the design; ht. 4". Pl. XXII,
18.
- Lh 86 Painted potsherd; part of a plant design in chocolate on cream slip.
Pl. XXII, 22.
- Lh 97 Painted potsherd; a row of long sigma-shaped curves, and hatched
oval (leaf) in chocolate on cream slip. Pl. XXII, 30.
- Lh 104 Painted dish fragment with interior decoration; two brown bands en-
closed by black lines on cream slip; between the bands, a row of
cross-hatched biconical figures in black. There are cord-marks on
the outer surface of the dish. Pl. XXII, 16. ;

- Lh 119 Painted dish fragments with interior decoration; plant design in the middle of the dish, and segments along the border; design in chocolate on red wash. There are cord-marks on the outer surface of the dish. Pl. XXII, 31.
- Lh 118 Painted potsherd; cross-hatched rectangles with concave sides, and a dotted loop with beak-like projection and hanging wavy lines, at the shoulder of vase; the latter motif may be intended for a bird; traces of brown or red band at neck; design in chocolate on red wash. Pl. XXII, 6.
- Lh 121 Painted potsherds; a row of balls at shoulder of vase; chocolate on cream slip. Pl. XXII, 17.
- Lh 145 Painted dish fragment with chocolate and reddish brown bands. Pl. XXII, 9.
- Lh 151 Painted potsherd; eye-shaped compartments with a ball in each; between the compartments the ground is filled in by horizontal hatches; design in black on pink wash; traces of brown or red band at neck above. Pl. XXII, 15.
- Lh 178 Painted potsherd; hatched *Pipal* leaf; chocolate on cream slip. Pl. XXII, 32. It has a 'Nal' feeling about it. Cf. *Mem. A. S. I.*, No. 35, Pl. XXI, 4.
- Lh 191 Painted dish fragment with interior decoration; red bands between black lines on light red wash; plant motif in the middle of the dish in black. Pl. XXII, 23. Cf. Lh 119.
- Lh 211 Painted potsherd; dagger-like curves placed vertically in a horizontal row followed by cross-hatched rectangle; design in chocolate on cream slip; ht. of vessel, about 2·2". Pl. XXII, 8.
- Lh 226 Painted potsherd; balls in compartments; design in black on cream slip; ht. of vessel about 2·1". Pl. XXII, 7.
- Lh 1 Pottery vase with narrow mouth, bulged out body and pointed base; probably once painted, and had a handle attached to the shoulder, which is now missing; ht. 5·2". It bears general resemblance to Lh 90 and 92 described above. Pl. XXXVI, 38.
- Lh 198 Pottery vase with tapering, but flat bottom; ht. 3·2". Grey ware. Pl. XXXVI, 39.
- Lh 223 Pottery vase with tapering, but flat bottom; ht. 1·6". Grey ware. Pl. XXXVI, 32.

NOTE.—It is not clear whether Lh 223, found in Trench 2, belongs to the Early or Late level, but its resemblance to Lh 198, which certainly came from Late level, suggests that it should be referred to the latter. Lh 1, the first find from Trench 1, because of its affinity to Lh 90 and 92, would also appear to belong to the Late level.

Lh 227 Pottery tumbler; ht. 1·5". Pl. XXXVI, 15.

Lh 189, 208 Fragments of vases with incised strokes at neck.

Lh 152, 153 Two fragments of vase with incised strokes at neck. Pl. XXXI, 1 (Lh 152).

- Lh 212 Fragment of vase with five lines of incised strokes at neck. Pl. XXII, 35.
- Lh 213. Fragment of vase with two lines of incised strokes at neck. Pl. XXII, 36.
- Lh 157 Terracotta bull figurine; max. L. 3·55".
- Lh 229 Terracotta; torso of a steatopigous figure; a hole passing across the shoulder, and another at the belly; L. 2·65". Pl. XXII, 38.
- Lh 122 Steatite bead; greenish; biconical; incised concentric circlets; L. ·65"; diam. ·95". Pl. XXXIII, 23.
- Lh 124 Bone pin, damaged at one end; L. 3·6". Pl. XXII, 34.
- Lh 125, 215 Two fragments of vitreous paste bangles with incised lines.
- Lh 158 Vitreous paste bead; globular; L. ·35"; diam. ·4". Pl. XXXIII, 19.
- Lh 216 Cornelian bead fragment; long barrel type; L. 1·1". Pl. XXXIII, 22.
- Lh 218 Vitreous paste bead; cylindrical; L. ·8"; diam. ·3". Pl. XXXIII, 15. (Although found in Trench 2 it was not clear whether it should be referred to Late level).
- Lh 221 Steatite bead; discoid type; round; diam. ·42".
- Lh 209 Terracotta bead or net-sinker; diam. 1·4". Pl. XXXIII, 9.
- Lh 126 Chert flake; L. 1·85".
- Lh 220 Chert flake; L. 3·55". Pl. XL, 3.
- Lh 222 Copper knife-blade; L. 1·35". Pl. XLI, 31.

NOTE.—Trench 1 yielded Lh 1-83, 109-116, 127-149, 159-188, 201-207, 217; and Trench 2: Lh 84-108, 117-126, 150-158, 189-200, 208-216, 218-229. The depths of the finds are as follows:—Lh 1-12, 14-48 (about 3' to 4' above the ground level); Lh 13 (4·5' above g. l.); Lh 49-62 (about 3' to 3·32' above g. l.); Lh 63-83 (about g. l. to 2·58' above g. l.); Lh 84-89 (9·7' above g. l.); Lh 90-108 (about 7·5' to 9·5' above g. l.); Lh 109-115 (about ·6' below g. l. to 1' above g. l.); Lh 116 (4·29' above g. l.); Lh 117-126 (about 6·5' to 7·8' above g. l.); Lh 127-149 (about 2' below g. l. to 2·9' above g. l.); Lh 150-158 (about 5·2' to 6·9' above g. l.); Lh 159-176 (about ·5' to 1·6' above g. l.); Lh 178-179 (2·7' below g. l.); Lh 180-188 (about g. l. to 1·2' above g. l.); Lh 189 (5' above g. l.); Lh 190-194 (about 5' to 7' above g. l.); Lh 195-197 (about 2·8' to 3·7' above g. l.); Lh 198 (5·6' above g. l.); Lh 199-200 (3' and 3·7' above g. l.); Lh 201-207 (about ·9' to 1·5' below g. l.); Lh 209-216 (about 6·25' to 7' above g. l.); Lh 217 (·74' below g. l.); Lh 218-222, 224-227, 229 (4' to about 5·46' above g. l.); Lh 223 (3·26' above g. l.); and Lh 228 (3·66' above g. l.).

CHAPTER V.—IN AND AROUND LAKE MANCHHAR

To Bhagotaro and Tirth Laki.—Towards the end of November, as the work at Lohumjo-daro was drawing to a close, we set about framing our further programme. This was by no means an easy task, considering that the reports received from the Talukas of Johi and Sehwan were practically blank, and none of the mounds hitherto visited in the neighbouring Taluka of Khairpur Nathan Shah proved to be of any interest. We had in the previous season discovered the site of Amri, and it seemed hard to believe that between that place and Lohumjo-daro, which is almost due north, as also farther to the west of the line, there should be found no trace of the prehistoric civilization at all. Again, at Amri there was unravelled a culture which had its

closest parallel in Baluchistan. Could this culture have developed on the Indus bank in all isolation? In this connexion my attention was fortunately drawn to a reference in Coggin Brown's *Catalogue of Prehistoric Antiquities in the Indian Museum*, p. 10, which states that a copper celt, now missing, was discovered at a place called Bhagotoro in Karachi District. Bhagotoro¹ is the name of that part of the Laki Range which lies to the south of Sehwan, by the side of the Indus, midway between Sehwan and Tirth Laki. The record about the copper celt suggested the existence of a chalcolithic site at or near Bhagotoro. In R. D. Banerji's unpublished list of sites, Tirth Laki and the foot of the Laki Range in its neighbourhood are marked as a prehistoric area. Probably he based his inference on Coggin Brown's statement referred to above. A search made at Tirth Laki, which is well known for its sulphur springs and also regarded as a sacred place of the Hindus, proved, however, fruitless. Nothing was also found between Tirth Laki and Bhagotoro. Just below the Railway station of Bhagotoro, the foot of the hill is flooded every year by the rising water of the Indus, and the alluvium thus deposited produces rich harvest. But the land here is unfit for human habitation, and so far as we could judge, the chance of there being a hidden prehistoric site on the river bank in this locality seemed very much remote. Looking westward from the top of the hill at Bhagotoro, we could see the vast stretch of valley adjoining Lake Manchhar, and beyond it the Khirthar Range that separates Sind from Baluchistan. And it occurred to us that, as nothing of the prehistoric period had been found along the Indus bank between Amri and Lohumjo-daro, probably due to the devastations wrought by floods, there might be some prospect of discovering its traces in the region west of the Manchhar, as it is beyond the reach of the flood water of the Indus. Indeed, a Revenue Officer of the District had reported about certain mounds near this lake, and similar information was probably conveyed also to Banerji. In his list of sites Lake Manchhar is included, and he refers to the existence of 'prehistoric settlements' on its banks, although he does not give the names of the mounds, or their location. Enquiries made at the headquarters of the Sehwan and Johi Talukas, to which the lake belongs, also failed to supply any clue. It seemed, therefore, necessary to pay a visit to Manchhar for investigation. So on the 4th December, on the conclusion of the work at Lohumjo-daro, our party left for Dadu, and after a halt of two days there, proceeded to Bubak, which was regarded to be a convenient starting station for the survey of the Manchhar region.

Halt at Bubak.—On the 7th of December, we arrived at the small but picturesque town of Bubak in the Sehwan Taluka, at a distance of three miles from the Railway station of Bubak Road. It is situated on the high bank of a canal issuing out of the Manchhar lake, and is surrounded almost wholly by

¹ The word 'Bhago-toro' means in Sindhi 'the broken hill', an appellation it came to possess when this section of the Range was partly blasted for the passage of the railway line along the hill side.

an arm of this canal (Pl. XII, a). Boats are available here for going to the lake; these belong to the fishermen of the locality who carry on a rather brisk business, the fisheries of the Manchhar being well known all over Sind.¹ A boat was engaged for our daily trips, and it was arranged that we should set out every day early morning, returning to camp at night. This was to continue for several days, as we had to make a complete circuit of the lake, visiting all the important villages situated along its banks.

Lake Manchhar.—On the 8th December, our journey commenced at day-break. After an hour or so we caught a glimpse of Lake Manchhar, its vast sheet of water edged off on the north, east and west by the Khirthar hills set in bold relief against the distant horizon. The water of the lake dotted with sailing boats here and there, which looked like so many white specks from a distance, and the countless ducks in which the Manchhar abounds, altogether presented a very charming landscape. The Manchhar is normally 8 to 10 miles in length and about the same in breadth. But it swells enormously in inundation time, being directly connected with the Indus by the Western Nara on the north and the Aral on the east. Moreover, as it is at the foot of the Khirthar hills it receives annually a considerable share of the rain water drained off from the Baluchistan side through the innumerable torrent-beds.

The track from Sehwan to Johi.—Along the western bank of the lake, a track is shown in the maps, connecting Sehwan with Johi and ultimately proceeding northward as far as the Upper Sind Frontier. Before it reaches Sehwan, this route meets the old *Kafila* or caravan route passing through Kohistan to Karachi. With this track, which is meant only for camel traffic, I was somewhat familiar from Masson's account² as given in his 'Journeys', and also from an old publication of the Bombay Government.³ Masson joined the company of a Pathan *Kafila* at Kalat, and entered Sind by way of the Mula Pass. He then passed through Ghaibi Dero, the well-known Jagir of the Chandias to the northwest of Larkana, and following the camel-track through Phulji, Johi, Chhini, Trihni and Kot Baluch near Jhangar, set himself on the way to Karachi. Trihni, Kot Baluch and Jhangar are situated on the outskirts of Lake Manchhar, and west of Trihni, lying on the same track, is the important village of Shah Hasan.

Lal Chhatto.—The first place to be visited in this region was Trihni, where a shepherd gave us the information that a site dedicated to a Pir named Lal Chhatto existed within a mile from the village. It was then surrounded by the waters of the lake, and could be reached only by a boat. This information was hardly reassuring. The site of the Pir looked from a distance like a little island (Pl. VI, a) which, situated as it was, seemed

¹ The *Ain-i-Akbari* says, "Near Sehwan is a large lake, two days' journey in length, called *Manchur*, in which artificial islands have been made by fishermen who dwell on them." (Jarrett, Vol. II, p. 338). Practically the same account is given also in the *Khulasat-ut-Tawarikh* (J. N. Sarkar, *India of Aurangzib*, p. 70).

² *Narrative of Various Journeys in Baluchistan, Afghanistan and the Punjab* (London, 1842), Vol. II, pp. 129-158.

³ *Selections from the Records of the Bombay Government*, No. XVII, New Series, 1855, Part II, Appendix, 'Routes from Kurachee' by Lt.-Col. J. Holland.

THE MANCHHAR SITES



(a) THE LAL, CHHATTO MOUND NEAR TRIHNI.



(b) THE MASHAK MOUND NEAR SHAH HASAN.



(c) THE PREHISTORIC AREA AT LOHRI.



(d) A PARTIAL, VIEW OF THE SAME AFTER EXCAVATION.

scarcely deserving of serious attention. At best it might have been a fishermen's settlement of modern times, like those mentioned in the *Ain-i-Akbari* (above, p. 60, n. 1), deserted for some reason or another, and the cult of the Pirs in Sind was one that excited little enthusiasm or curiosity. But as in any case the place would not be far away from the route to be followed in our return journey to Bubak, Pir Lal Chhatto was not ignored; and we had not to regret this little detour at all. For, the Pir, as we shall see presently, had appropriated the site of a prehistoric settlement! The evidence was furnished by a number of chert flakes and fragments of 'perforated pottery' which were lying over this island mound on its south-western side. On the top of the mound, there was a pile of stones marking the spot where the Pir lay buried. The existence of this early settlement in the midst of the lake was most surprising. On the 8th December, its height above the level of the surrounding water was not more than 8 ft. at the most. This water, we were told, considerably dries up after the winter months. The mound is then exposed to a much greater height, and becomes accessible from Trihni by land. In fact, the area between the village and the mound is then brought under cultivation. It was, of course, impossible to carry on any excavations on a large scale at this site, in view of the high water level. We decided to dig here a few small pits, and thus examine the nature of the accumulation. But before this was done we began to enquire if there existed any other site near by, which was likewise sacred to the memory of a Pir. Our boatmen assured us of the existence of a mound on the Manchhar bank called after 'Pir Mashak'. We were further told that there were also two submerged, or nearly submerged, places in the Manchhar itself, known as Māḍi Buṭ and Rohiṇḍo.

Mashak.—Next morning we set out for Pir Mashak, about a mile to the southeast of Shah Hasan. Like Lal Chhatto, Mashak was also surrounded by water on all sides, and appeared to be of the same height (Pl. VI, b). The boat could not be taken direct to the mound, as the water was shallow near its edge. We had to get down at some distance from the mound, and wade through the muddy water. The mound was overgrown with grass and thorny bushes, which added greatly to the difficulty of our inspection. As at Lal Chhatto, here also a heap of stones marked the burial of the saint on its top. The surface of the mound was largely hidden by rank vegetation. But at places there could be seen patches of ground dotted with bits of red pottery mixed with sand and pebbles. In the midst of these, closer search revealed fragments of 'perforated pottery', terracotta bangles, chert flakes, etc. Some samples of these as well as a cornelian bead were collected, which made it clear that here also existed a settlement in the Chalcolithic Age.

Excavations at Lal Chhatto.—On the 13th December, we finally left Bubak and came to Trihni where we encamped outside the village near a small canal. A boat was kept ready, to ply between the mound and our camp daily, as many times as necessary. Excavations were started on the next day of our arrival, on the south side of the mound (Pl. XLV). A trench, 42 ft. by 10 ft., the surface of which rested only 6 ft. above the water level, yielded at a depth

of 6 ins. to 1 ft., chert flakes, painted pottery, etc. But below this depth practically nothing was found. Another trench, measuring 30 ft. by 10 ft., although its surface was only about $4\frac{1}{2}$ ft. above water-level, proved more fruitful. In it was discovered a type of pottery (pp. 70ff), not yet noticed elsewhere, associated with chert flakes. These occurred regularly all through the layer of deposits, down to the water-level. But owing to continuous percolation of water at the bottom of the trench further work had to be abandoned. Three other pits were also sunk, but as they were only 3 ft. above water, much progress could not be made in any of them. These too yielded the same class of pottery as that from the two trenches. But the black-on-red pottery of the Mohenjo-daro type was totally absent.

The Pottery (Pl. XXIII).—The pottery of Lal Chhatto represents a class of red ware painted in two colours. As the collection does not include any entire vessel, it is difficult to imagine the shape of these pots. They have rather thin walls, considering the size, and the clay contains a large proportion of sand particles. As regards the treatment of the surface, the decoration is in black on a thin light red or buff slip. In many cases, there is a reddish brown band at the necks of the vessels. Some of the specimens show the same colour repeated also below the shoulder, and it often occurs side by side with black in the interior of a pattern. Plants and flowers are the predominating motifs. But very often these are so much stylized that it is difficult to recognize them. Tr 47 and 48 are examples of this class. The tendency seems to have been to draw half instead of full rosettes, *e.g.*, on Tr 53 and 104. Tr 53 exhibits something of naturalism, of which the best example seems to be Tr 3. Some of the other motifs occurring on this pottery are: balls in compartments, the balls either in red, as in Tr 69, or in black, as in Tr 204; chequers with a thick curvilinear stroke in each square, *e.g.*, in Tr 149; dots in rows, *e.g.*, in Tr 7; and hatched biconical figures, *e.g.*, in Tr 134. The floral motif is probably derived from the lotus, the predominance of which is significant owing to the fact that the Manchhar lake becomes full of lotuses in the autumn¹, and this was probably so in early times. It is only natural for those ancient lake-dwellers to utilize the lotus form, with which they were intimately familiar, in the decoration of their household pots. It is not easy to determine the place this ware occupies in the chronology of the painted ceramics of Sind. In technique and ornamentation it has very little in common with Amri, excepting that both use the same colours. On the other hand, it has certain points of resemblance with the late prehistoric potteries of Jhukar and Lohumjo-daro. There is a general agreement in the colour-scheme followed by the Jhukar and Lohumjo-daro potters, and those of Lal Chhatto. Then again there are certain designs that are common, the most noteworthy being red balls in compartments. Lastly, there is the evidence furnished by the painted dish, Tr 49, which is exactly similar to a dish from Lohumjo-daro, Lh 119, in shape. They agree also in

¹ Westmacott writing in 1840 observed, "Lake Munchar presents a beautiful sight in the season when the lotus is in blossom; the plants occupy a circle of more than twenty miles, covering the surface of the water with a thick carpet of leaves and flowers far beyond the region of vision." *J. A. S. B.*, Vol. IX, 1840, p. 1207.

having a wavy line at the edge and a chocolate band on the outer side. The floral motifs are no doubt absent on the Late wares of Jhukar and Lohumjodaro, their occurrence at Lal Chhatto being a reflection of its special environment, as hinted above.

Other finds.—Other objects of interest (p. 72) found at Lal Chhatto, besides painted pottery, are a few fragments of big size dishes-on-stand, a number of terracotta bangles, a triangular 'imitation cake', a short barrel-bead of green felspar, a fragment of a chalcedony bead of barrel type and a large number of chert flakes and cores, many of which are of tiny size. No object of metal was discovered.

Trial Pits at Mashak.—On the 21st and 22nd December, we stopped at Shah Hasan for digging a few pits on the Mashak mound. We halted at the Local Board Dak Bungalow in the village, and used to come out with our workmen in boats, by a somewhat circuitous route. The actual distance of the mound from the bank would be only a little over three hundred yards. But the water was found to be too shallow for taking the boat straight to the mound. Three pits were sunk at Mashak, of which two measured 15' by 10', and one 10' by 10'. These diggings brought to light painted pottery (Pl. XXIII, 36-42, 45-47; p. 73) of exactly the same type as that found at Lal Chhatto, which made it clear that the two sites must be looked upon as contemporaneous. Here also, the pottery was found in association with chert flakes, so that about the antiquity of this new class of ware there could not be any doubt.

Objects typical of 'Indus culture'.—Besides a bit of 'perforated pottery' from the surface of the Trihni mound only one or two other objects were found there which could be said to be typical of Indus. But at the Shah Hasan site, we could discover a few more connecting links. These are fragments of pointed-bottom vases, perforated pottery vases, offering dish-on-stand with crescentic marks incised on the dish, terracotta cart-frame, and figurines of bull (p. 73). In view of these finds this site as well as Trihni, with which it has the peculiar type of painted pottery in common, should be referred to a phase of the Indus civilization. What is, however, wanting at both the places is the typical black-on-red pottery of Mohenjodaro. It has been suggested above that the Trihni site is assignable to a later phase of the civilization, and this estimate should hold good in the case of Mashak as well. The combined testimony of the pottery finds of the Manchhar sites and those of Jhukar and Lohumjodaro would go to show that in Sind, the black-on-red pottery of the Mohenjodaro type gradually went out of use, and a bichrome ware once again held the field in the period that followed, but, of course, in a very much modified style.

The fish and the ducks of Shah Hasan.—Shah Hasan, it may be noted, is a centre of the fishing trade like Bubak. A novel system is adopted in these parts for trapping fish.¹ Enclosures are set up in the lake by fixing in water long bamboo poles to which nets are attached, keeping access to

¹ Cf. *Gazetteer of the Province of Sind*, Vol. A. p. 75.

the enclosure open on one side (Pl. XII, b). Through this opening fishes are attracted inside in shoals by the incessant beating of bell-metal utensils by fishermen from their boats, gradually approaching towards the enclosure. Shah Hasan is frequently visited by people also for duck-shooting for which the Manchhar lake is famous in Sind. An enclosure somewhat similar to the above is made in water, and fine nets are hung from the bamboo poles. At night masses of live fire are thrown into the swarms of ducks. Being frightened they begin to fly in the opposite direction, where the nets are spread, and easily get entangled in hundreds. As regards the 'Kheddah' system of fishing, it seems to be practised also in other lakes of Sind, although we have no personal knowledge of it. Burnes¹ noticed a similar method of fishing in the Khinjur Lake near Hilaya in the Tatta Division.

Submerged lands in Manchhar.—From Shah Hasan we visited Rohiṇḍo and Māḍi But. Rohiṇḍo is near the same bank of the lake on which Trilṇi is situated, about half a mile to the northeast of a place called Pir Dhaman which is shown in maps. The spot was located with some difficulty; there was no trace here of any elevated ground, the land being in this part of the season completely submerged in the lake. Its surface could, however, be recognized from the tall grass growing upon it. To its northeast we came upon Māḍi But, a small island like Lal Chhatto and Mashak, but almost completely submerged in water. From a distance its existence could only be guessed from a number of trees growing on the site. There was a Pir's grave here also, and some pottery fragments were lying near it. But these did not furnish any clue as to the existence here of a prehistoric settlement. Investigation made from fishermen, who are thoroughly familiar with the conditions of the lake as they vary from time to time, went to show that like Lal Chhatto and Mashak these two places also emerge into view during the dry months.

Nature of the sites.—Our pits and trenches in the Lal Chhatto mound show that it is composed entirely of earth and does not rest on rocky bed. It may be assumed that the settlement that existed here perched on an eminence artificially made for protection against floods, although it is likely that when these islands were in occupation there was less fear of their being submerged by flood water. We know that at one time the main current of the Indus used to pursue a course much farther to the east of the present one, and that the valley of Sind was watered by two rivers instead of one. Moreover, the history of the Indus seems to have been the shifting of its course from east to west and from west to east, a process that has gone on throughout the ages. It seems likely that in the Chalcolithic Age its course followed a direction somewhat like that recorded in the days of Arab occupation. In that case, the Manchhar lake, which receives now the bulk of its water from the Indus during the inundation period, must have been considerably narrower in extent, being dependent almost entirely on the bounty of rain water from the highlands of Baluchistan.

¹ *Cabool*, 1842, p. 20.

The Lake-dwellers.—Our explorations around the Manchhar now prove for the first time the existence of a lake-dwelling people in Sind, during the later part of the Indus period. That their settlements were on the verge of the lake shows that they could not have been primarily an agricultural people. In fact, the western bank of Manchhar abuts on rocky beds, leaving very little margin for cultivation. The people living in its neighbourhood must have been, therefore, compelled to depend largely on fish and such other game as the lake could afford. Their ways of subsistence could not have been much different from those of the people living in the Manchhar area at the present day. Fishing is their principal avocation, and they like to be as near the water as possible. Many of them live in boats with their families, or in huts constructed on platforms on the surface of water. These huts have a curious likeness to the Neolithic and Chalcolithic pile-dwellings of the lakes of Switzerland and other European countries. Whether the ancient lake-dwellers of Manchhar used to have similar pile-houses it is difficult to say with the data available. The pits and trenches excavated on Lal Chhatto and Mashak mounds have not revealed any brick or stone, nor was there any indication to show that the lake-dwellings were made of these materials. The cuttings reveal a deposit of pure silt; and the find of household objects like pottery etc. in this silt deposit is unaccountable, unless we suppose the existence of wooden or mud houses built on an elevation made by earthwork. It may therefore be supposed that the little islands like Lal Chhatto and Mashak were the predecessors of the modern fishing hamlets of Lake Manchhar, and that the pile-dwellings of the lake are a survival from ancient times. Such dwellings of the prehistoric period were discovered in Europe in times of exceptional drought, and explorations conducted on similar lines in Manchhar lake during the dry season may lead to important discoveries. But unfortunately we had no opportunity for this during our stay in Sind.

Lohri.—At Shah Hasan, the existence of another Pir's 'abode' came to our knowledge. This was the site of Pir Lohri, 4 miles to its north, on the way to Chhini and Johi. At the time of our visit the water of the lake was standing about 2 miles away, but during inundation Lohri is completely submerged. The name 'Lohri' is attributed to a collection of stones lying at the site, but there is no indication here of the burial of the Pir as at Lal Chhatto and at Mashak. A tradition, that a town lies buried underneath the stones, was found very persistent amongst the elders of the neighbouring villages. In support of it they alluded to the occasional find of fragmentary earthenware vessels in digging pits and wells. The significance of this tradition was realized after we had examined the plot of land immediately to the east of the stones. This land from a distance does not show any elevation, as its highest point would not be more than 4 feet above the level of the adjacent cultivated fields. But bits of red pottery mixed with sand, fragments of terracotta 'imitation cakes' and chipped flakes of chert were found scattered all over the area, pointing to the fact that the land had been inhabited by people in antiquity. Another feature drew particular attention. The ground was imprinted with squares

and rectangles (Pl. VI, c), evidently the sign of buried chambers. Naturally there would be lack of vegetation along the lines of the walls, but the area which they enclosed would be left quite green. This is how the figures were formed, and it looked as if somebody had drawn out the plan of a number of rooms on the level land. In view of the flatness of the area there was, however, no doubt that the structures had all disappeared, leaving only their bare foundations. This, of course, must have been the result of continuous flooding to which the locality is subjected every year.

Excavations (Pl. XLIV).—On the 22nd December, we arrived at Lohri from Shah Hasan for excavation. Digging was started along the lines of the 'squares' and 'rectangles' referred to above. The work was found rather difficult, as the soil of the place was hard and gritty. The tough nature of the soil was due to the presence in it, as the operations showed, of the powdery remains of disintegrated stone walls. The foundations of a number of small chambers were exposed (Pl. VI, d), but all the stones were in a hopelessly fragile condition, being in many cases already reduced to powder. Within a few days the remains of stone structures belonging to two different strata, one superimposed upon another, were brought to light. Later, those of a third period of occupation were found almost at the present water level. The excavated area covered about 80' by 60'. The walls of the chambers had for their foundations roughly hewn sandstone blocks. Those of the latest period ended at a depth of only a foot and a quarter below surface. This means that the structures have practically been all swept away by floods. Below these remains, after removing a layer of débris, only one foot deep, yet another level of an earlier date was reached. At this stratum the foundations of a house in a better state of preservation came to light. It consisted of four very small chambers, two side chambers and a verandah. None of the chambers was more than $6\frac{1}{2}'$ by $4\frac{1}{2}'$ in size, and the little house to which they belonged could not be more than 30' by 26'. At four places in this house, there were found traces of the original flooring. Below the foundations of the middle period, after removal of débris, the foundations of the third, or the earliest period, turned up at a depth of about 7'. Further progress was impossible owing to the percolation of subsoil water inside the trenches. The three strata were exposed in two different places in the excavated area. On a higher level of the site, a trench 22' by 10' was dug and made 3' deep, its bottom reaching the top level of the foundations of the middle period.

Pottery.—This was found in abundance within a foot of the surface. It was evident that many of the pieces were originally painted, but none of them bore any traces of paint. The loss of decoration is no doubt to be attributed to the fact that for a considerable part of the year the site remains under water. As soon as the water recedes or dries up, a rapid action of salt sets in, and the paint is gradually effaced. From a depth of 1' onward potsherds with the decoration more or less intact began to be systematically picked up until the water-level, at 7' below surface, was reached. These finds came from the middle and the third strata. The pottery is of a buff or light red

colour, generally of a thin fabric belonging to the bichrome class (Pl. XXIV, 14-15, 18-34; pp. 73-75). The paints used for surface decoration are reddish brown and chocolate or sepia, while the ground bears a thin buff slip. The motifs are geometric, for instance chequers within enclosing rectangles, solid triangles, a row of lozenges with cross-hatched interior, chevron and so on. Some of the colours are of a fugitive character, which begin to run as soon as the pottery is dipped in water. From all points of view this pottery will be found akin to the Amri ware. In the absence of entire pots it is difficult to say anything definitely about their respective shapes. But steep-sided vessels and those having a straight shoulder (*e.g.* Pl. XXXVIII, 25) seem to have been the predominant types, as was the case also at Amri.

Stratification of 'Indus' objects.—It is significant that no example of the painted pottery of the black-on-red Indus type was found here at the uppermost layer. But we must remember that this layer has for centuries remained exposed to the ravages of floods and undergone complete denudation. There were found, however, other objects amongst the latest deposits, which could be recognized as typically 'Indus'. These comprise dishes-on-stand with crescentic markings, perforated pottery, terracotta 'imitation cakes', a bird-shaped whistle and terracotta cart-frame probably used as a toy. The first three objects were found one foot above ground, and the rest about 1' to 2' below this level. It is important to note that none of these objects was associated with the 'geometric' painted pottery of the Amri class, nor were they found at levels more than 2' below ground. The depth of all the objects was carefully observed, and the result of this stratification was found to be in definite agreement with that recorded at Amri. This once again suggested that the 'Amri culture' must be reckoned as anterior in date to the Mohenjodaro phase of the Indus civilization.

Other objects found.—Five terracotta biconical beads with incised decoration, two indeterminable animal figurines, part of a copper ornament, fragment of a vitreous paste bangle, and a number of chert flakes as well as cores were also found in the chambers excavated (pp. 75-76). Some of the flakes had fine cutting edge. Two of the cores are rather interesting, as they show that the chert was obtained by taking off slices from limestone blocks. Such limestone containing bands of chert are available in the Khirthar hills. Another object of interest was a peculiar type of stone mortar having a small cavity in the middle. It would be suitable for grinding small things, and might have been used by apothecaries for pounding drugs.

Lakhiyo.—From our camp at Lohri the site of yet another Pir was examined. This place, which is called after Pir 'Lakhiyo', is 4 miles to the northeast, not far from the Western Nara canal. The soil of this locality, between the Johi road on one side and the Western Nara on the other, is very fertile owing to the rich deposits of silt from inundation water. In recent years floods have become a standing menace to this region, and at the time of our visit a dam was being raised to control the excess water according to a scheme of the Lloyd Barrage. A mosque marks the site of the

Pir at Lakhiyo. The land adjoining it is more or less level and surrounded on all sides by field under cultivation. Like Lohri this place also does not bear the appearance of a mound, and looks completely denuded. But it is strewn over with terracotta bangles and 'imitation cakes' from which its real character was apparent. People had dug a pit for water near the mosque, in which pottery débris were noticed in abundance.

Trial Pits.—There was no time at our disposal for a systematic excavation. Two pits were sunk near the mosque, measuring 15' by 10' and 10' by 10' respectively, and carried down to an average depth of 6' below surface. The cuttings showed a layer closely packed with pottery débris, from the surface to the bottom of the pits. We could not, however, come to the end of the layer. A very large quantity of potsherds were cleared from the two pits, an examination of which on the spot revealed very few painted specimens. Plain pottery appeared to be much more common than painted pottery, as was our experience also at Mohenjo-daro. The finds recorded from this site include black-on-red pottery, terracotta cone, terracotta figurines of the Mother Goddess and of the bull, perforated pottery, terracotta bangles, terracotta beads of long barrel type, terracotta toy cart-frame, steatite beads of discoid and other shapes, a cubical stone weight and chert flakes (pp. 76-78). The painted pottery is made of a clay full of sand particles and represents a thick ware. The only mentionable motif appearing on the few fragments that were collected is hatched leaves in compartments (Pl. XXIII, 48). Plain pottery, the number of which was legion, showed various types of vessels. Of these some with pointed base and others with ribbed shoulder have their exact parallels at Mohenjo-daro. Semi-fired cake-shaped lumps with circular depressions on two sides, which were found at Lakhiyo, are similar to those from Chāñhu-daro and Ali Murad described elsewhere.¹ The number of chert flakes recovered at this site was very much limited.

Objects of 'Mohenjo-daro culture'.—The objects from Lakhiyo enumerated above bear very close resemblance to the corresponding ones from Mohenjo-daro, not only in typology but also in the individuality of execution. Indeed, the similarity is so striking that the Lakhiyo specimens are apt to be mistaken as those from Mohenjo-daro. There is, therefore, no doubt that this is another station of Indus and must be assigned to the same period as Mohenjo-daro. Here also people were devoted to the cult of the Mother Goddess whom they represented in terracotta as a standing figure with high head-dress and cup-like ears, wearing a neck-lace and a girdle.²

The Mounds near Jhangar.—To the south of Trihni, on the camel-track from Johi to Sehwan, is the prosperous village of Jhangar, situated near the point where the track bifurcates, a branch of it leading towards Karachi. Information had been received at Trihni of certain mounds (Pl. IX, a), about two miles to the south of Jhangar, which were inspected subsequently, when the excavations at Shah Hasan were over. The mounds are situated immediately to the

¹ *Ante*, p. 42, Ch 463; cf. p. 52, and below, p. 108, Al 12.

² Cf. *Mohenjo-daro*, Vol. III, Pl. XCIV, figs. 5, 14.

southwest of the Pirari village, not far from the Karachi road, and are hemmed in by cultivated land on two sides. The site has no particular name, but is locally known as 'Kotiro'. The maximum height of the mounds is about 17' and the main portion of the site stretches from north to south. It covers approximately an area of about 700' \times 375' (Pl. XLV). But it is difficult to say how much of the original site has been brought under, and thus obliterated by, cultivation. Traces of pottery etc. could be seen in the adjacent corn fields which belong to a Baluch Zemindar named Sher Muhammad Khan. The entire cultivation of this locality depends on spring water. Four miles to the south of the mounds, at the foot of the Bado hills, there is a hot-spring the water of which is diverted towards Pirari by means of channels. The principal water-course from which these channels emanate is known as the Pirari *Wahi*. The mounds are dotted with limestone pebbles, chipped flakes of chert, mostly of irregular shape, and grey potsherds. None of the potsherds were painted and they showed no affinities whatsoever either with the Amri or with the Indus wares so far known.

Trenches and finds.—Two trenches were dug, one on the principal mound at the north of the area, and the other on a small mound at its south end. From both the trenches a kind of black pottery with incised decoration was recovered in large numbers (p. 78). Painted pottery was not altogether absent, but only a few pieces could be found. The black pottery is unique of its kind in Sind¹ and should be compared with the polished black ware with incised decoration from a grave of the Early Iron Age at Huttanahalli near Bangalore in the Madras Presidency, recently acquired by the Indian Museum, Calcutta. The black pottery from Jhangar bears patterns incised on a polished body (Pl. XXXI). These comprise a row of circlets, triangles, lozenges and slanting strokes, a group of uprights alternating with a cross,² and two parallel zigzag lines. Most of the fragments recovered are those of beakers. The specimens also include some spouted vessels and quite a number of pots with rim. One of the vessels, Jh 1 (Pl. XXXV, 5), which was found in fragments and afterwards restored, bears curious resemblance to the 'bell-beakers' of the Danubian civilization. These Danubian bell-beakers, it may be noted, also represent a black ware with incised decoration.³ Another vase, Jh 54 (Pl. XXXV, 10), 16·5 inches high, has a row of circlets around the neck, and below, in another band, a line of slanting strokes. Pots having the former ornament incised at the neck have been found in the Tinnevely District of Madras, at sites belonging to the Early Iron Age. As regards the latter motif, we have already seen that it is typical of the Late Indus culture, as at Jhukar and Lohumjo-daro. The painted pottery, which is a rarity at the Jhangar mounds, is a light red ware with decoration in chocolate on light red or buff slip (p. 79). The ornaments appearing on it are very few, the only mentionable patterns being a row of lozenges

¹ Some specimens of black pottery akin to this were also found by the side of the Stūpa at Mohenjo-daro, on the surface.

² This pattern occurs on the incised pottery of the Neolithic age in Europe—Dechelette, *Manuel d'Archéologie Préhistorique*, Vol. I, p. 558, fig. 207.

³ For a parallel see Childe, *The Danube in Prehistory*, fig. 24, c. I am indebted to Mr. Mackay for having drawn my attention to this resemblance.

and two zigzag parallel lines running in horizontal bands, which also occur among the incised patterns. Among other finds (p. 79), we may notice two fragments of a copper awl and a copper chisel (Jh 51, 52), and a number of chert flakes most of which are of irregular shape like those from the surface of the mounds. No specimen of 'imitation cake,' animal figurines or bangles were found at this site. Its disparity with the sites so far explored in Sind was manifest, although in view of the find of chert flakes and copper implements it has to be referred to the Chalcolithic Age.

Relative date of the site.—In the above review of the finds from Jhangar two things stand out prominently—the imperfect and negligent workmanship of the chert flakes and the poverty of ornaments on the painted pottery. As regards the black pottery, the designs are made by incision, which is the easiest and cheapest method of decoration: the ornaments are incised when the clay is wet, a process that does not require much skill or labour. Recent excavations in Mesopotamia have established the fact that there in the pre-historic period the use of incised pottery followed that of the painted fabric. The ceramic remains of Kish are unpainted and incised, whereas the earlier potteries of Al-Ubaid and Jemdet Nasr include many painted specimens. This sequence may perhaps be established also in the history of the ceramics of the Indus valley. The Jhangar mounds seem to take us to a period when the technique of painted pottery as well as that of chipped flakes had considerably deteriorated, and the former gave place to the black ware with incised decoration. Much stress cannot be laid, of course, on the analogy drawn between the Danubian bell-beakers and those from Jhangar; this pottery may or may not have developed here independently. But the evidence of the incised 'slanting strokes' brings its culture closer to Jhukar and Lohumjo-daro, and in view again of the 'circlets' it seems tempting to postulate even a somewhat later date. In Sind, pots with a well-defined rim seem to have developed at a date later than the First Culture of Amri, and this type we find well established at Jhangar. At all events, it seems reasonable to suppose that Jhangar represents a culture which arose in the Manchhar region subsequent to that of the lake-dwellers of Trihni and Shah Hasan.

A Catalogue of the principal objects from the Manchhar sites

I. LAL CHEHATTO MOUND NEAR TRIHNI (Tr).

Painted Pottery. Pl. XXIII, Figs. 1—35.

- Tr 106 Vase fragment; reddish brown band at neck; flower with outlines in black, filled in reddish brown on light red slip. Fig. 1.
- Tr 1 Vase fragment; reddish brown band at neck; stylized floral motif; central portion in reddish brown, rest in black, on light red slip. Fig. 12.

- Tr 103 Vase fragment; reddish brown band at neck; floral motif in black on light red slip. Fig. 17.
- Tr 58 Vase fragment; reddish brown band at neck; floral motif in black on light red slip, in concentric segments, the petals indicated by serration. Cf. Tr 103. Fig. 9.
- Tr 102 Vase fragment; reddish brown band at neck; part of segmental floral motif in black on light red slip. Fig. 4.
- Tr 151 Vase fragment; stylized flower with dots along outer line, on light red slip. Fig. 24.
- Tr 46 Vase fragment; floral motif with dots along the outer line to denote petals, in black on light red slip. Fig. 22.
- Tr 48 Vase fragment; floral motif with dots along the outer line to denote petals, alternating with a group of vertical lines probably denoting grass, in black on light red slip; reddish brown band at neck. Fig. 31.
- Tr 53 Vase fragment; flower in black on cream slip; below, reddish brown band. Fig. 7.
- Tr 203 Vase fragment; flower in black on light red slip. Fig. 11.
- Tr 66 Vase fragment; stylized floral motif in black on light red slip; reddish brown band at neck. Fig. 15.
- Tr 104 Vase fragment; reddish brown band at neck; below, floral motif resembling a wheel; below, reddish brown band again; decoration on light red slip. Fig. 10.
- Tr 111 Vase fragment; floral motif in chocolate on cream slip; petals denoted by short curves; below, reddish brown band. Fig. 2.
- Tr 3 Vase fragment; flower (lotus ?) in a triangular compartment, in black on light red slip. Fig. 8.
- Tr 174 Vase fragment; rows of dots in two bands; below, wheel-shaped stylized flower, in chocolate on light red slip. Fig. 3.
- Tr 47 Vase fragment; stylized plant in spirals in black on light red slip; traces of reddish brown band at neck. Fig. 18.
- Tr 150 Vase fragment; stylized floral motif in black; petals indicated by dots along the outer line. Fig. 23.
- Tr 59 Vase fragment; slanting lines in chocolate on light red slip; cf. Tr 48; traces of reddish brown band below. Fig. 32.
- Tr 105 Vase fragment; slanting lines and horizontal strokes in chocolate on cream slip; cf. Tr 48. Fig. 33.
- Tr 172 Vase fragment; slanting lines and horizontal strokes in black on cream slip; below, traces of reddish brown band. Fig. 34.
- Tr 55 Vase fragment; part of a floral pattern in black on light red slip. Fig. 13.
- Tr 116 Vase fragment; part of a floral pattern in black on light red slip; traces of reddish brown band above. Fig. 20.

- Tr 73 Vase fragment; reddish brown band at neck; below, stylized floral motif in black with reddish brown at its centre: cream slip; traces of paint on inner side of neck. Fig. 14.
- Tr 198 Vase fragment; traces of floral pattern in black on light red slip; traces of paint on inner side of neck. Fig. 16.
- Tr 204 Vase fragment; reddish brown band at neck; below, balls in semi-circular compartments; black on cream slip. Fig. 6.
- Tr 69 Vase fragment; reddish brown band at neck; below, balls in reddish brown in semi-circular compartments in black. Fig. 5.
- Tr 149 Vase fragment; reddish brown band at neck; below, cross-lines forming squares and a thick curvilinear stroke in each square; chocolate on light red slip. Fig. 29.
- Tr 113 Vase fragment; decoration same as on Tr 149. Fig. 25.
- Tr 7 Vase fragment; reddish brown band at neck; below, dots in rows in black on light red slip. Fig. 30.
- Tr 177 Vase fragment; biconical figures with hatched interior in black on cream slip. Fig. 27.
- Tr 134 Vase fragment; decoration same as on Tr 177; light red slip; traces of reddish brown band. Fig. 26.
- Tr 50 Vase fragment; same as on Tr 134; cream slip; traces of a reddish brown band. Fig. 21.
- Tr 68 Vase fragment; traces of reddish brown band at neck; below, hooks, and cross-lines in a compartment; chocolate on cream slip. Fig. 19.
- Tr 109 Vase fragment; part of a floral pattern in chocolate on cream slip. Fig. 28.
- Tr 49 Dish fragment; pale colour due probably to insufficient firing; wavy lines arranged in a triangle at the edge; a wavy line forming a series of elliptical figures in the middle; at the back, a band in chocolate; design in chocolate on light red or cream slip. Fig. 35.

Miscellaneous Objects.

- Tr 222-224 Dish-on-stand fragments.
- Tr 5, 154-156, 182 Terracotta bangle fragments.
- Tr 217 Terracotta 'imitation cake'; triangular; fragment.
- Tr 229 Bead of green felspar; short barrel type; L. .5". Pl. XXXIII, 54.
- Tr 240 Bead of chalcedony; fragment; barrel type; L. .65". Pl. XXXIII, 56.
- Tr 41 Chert core; L. 1.7". Pl. XL, 23.
- Tr 232 Chert core; L. 1.3". Pl. XL, 19.
- Tr 86 Chert flake; L. 2.5". Pl. XL, 22.
- Tr 88 Chert flake; L. 1.6". Pl. XL, 21.
- Tr 141 Chert flake; L. 1.2". Pl. XL, 20.
- Tr 26 Chert flake; L. .7".
- Tr 95 Chert flake with pointed end; L. .8".

II. MASHAK MOUND NEAR SHAH HASAN (SH).

Painted Pottery. Pl. XXIII, Figs. 36-42 and 45-47.

- Sh 43 Vase fragment; traces of reddish brown band at neck of vase; stylized flower in black, probably on light red wash, on inner side of neck. Fig. 40.
- Sh 56 Vase fragment; spiraliform and hatched conical figure in chocolate, probably on light red wash, on inner side of neck. Fig. 45.
- Sh 34 Part of a saucer; spiral in chocolate on cream slip on inner side; below, reddish brown band. Fig. 37.
- Sh 5 Vase fragment; reddish brown band at neck; below, stylized flowers in a continuous line and slanting strokes in black on light red wash. Fig. 38.
- Sh 4 Vase fragment; reddish brown band at neck; stylized flower in black on light red wash; thick ware. Fig. 41. Cf. Tr examples.
- Sh 57 Vase fragment; reddish brown band; stylized flower, with dots along the outer line to denote petals, in black on light red wash. Fig. 36.
- Sh 41 Vase fragment; reddish brown band at neck; below, dots in compartments in black on light red wash. Fig. 47.
- Sh 33 Vase fragment; reddish brown band at neck; below, part of stylized flower in black on light red wash. Fig. 42.
- Sh 39 Vase fragment; reddish brown band at neck; below, dots in rows in chocolate on probably cream slip. Fig. 39.
- Sh 30 Dish fragment; pale colour; chocolate band and wavy line on inner side. Fig. 46.

Plain Pottery, Terracotta, etc.

- Sh 46, 47 Fragments of vases with pointed base.
- Sh 2, 45, 61 Fragments of perforated pottery vases. Pl. XXXIV, 17 (Sh 2).
- Sh 9 Dish-on-stand fragment; crescentic marks on dish.
- Sh 12-15, 50-53, 63-65 Terracotta bangle fragments.
- Sh 11 Terracotta toy-cart frame.
- Sh 16, 48 Terracotta humped bull figurines; fragments; neither the fore-legs nor the hind legs are parted.
- Sh 17 Miniature pottery lid; diam. 1.4".
- Sh 49 Terracotta ball; diam. 1.1".
- Sh 18-28, 66-68, 55 Fifteen chert flakes of various sizes:—
- Sh 19 Rectangular blade; light grey; L. 1.35". Pl. XL, 26.
- Sh 68 Pointed flake; brown; L. 1.2".
- Sh 54 Chank bangle.

III. THE SITE AT LOHRI (LR).

Painted Pottery, Pl. XXIV, Figs. 14, 15, 18-34.

- Lr 226-227 Vase fragment; ht. 5"; chequer within enclosing rectangles as a repeating ornament, alternating with solid eye-shaped figures laid

- horizontally in a column (cf. Pl. XXXVIII, 20); decoration in chocolate on cream slip; traces of reddish brown bands. Room 8, —2·6'. Fig. 31.
- Lr 225 Vase fragment; below neck, a row of vertical strokes which is repeated after three bands, each containing a row of solid triangles; chocolate on cream slip. Room 2, —2·2'. Fig. 28.
- Lr 161 Vase fragment; thick for size; reddish brown band at neck; below, two solid triangles meeting at a point, probably repeated at intervals after a number of vertical strokes; cf. Lr 10; chocolate on cream slip. Room 3, —2'. Fig. 22.
- Lr 10 Vase fragment; at shoulder, two solid triangles meeting at a point, repeated at intervals after three vertical strokes; chocolate on cream slip. About —2'. Fig. 21.
- Lr 218 Vase fragment; chevron in chocolate on cream slip. Room 8, —4·25'. Fig. 23.
- Lr 163 Vase fragment; a line of hatched lozenges with sides produced,¹ in chocolate on cream slip. Room 3, —2'. Fig. 25.
- Lr 128 Vase fragment; chevron in chocolate; slip gone; —2' to 3'. Cf. Lr 218.
- Lr 123 Vase fragment; traces of reddish brown band at neck; below, solid triangles alternating with three vertical strokes, cf. Lr 10; chocolate on cream slip. —2' to 3'.
- Lr 39 Vase fragment; poor condition; design not clear, probably solid triangles alternating with vertical lines in chocolate on cream slip, as on Lr 10. —2'. Fig. 32.
- Lr 134 Vase fragment; poor condition; continuous festoon at neck in black or chocolate on cream slip. —2' to 3'. Fig. 27.
- Lr 135 Vase fragment; poor condition; sigmas laid on side, three in a vertical row, and five vertical lines in chocolate; slip gone. —2' to 3'.
- Lr 126 Vase fragment; thick ware; a row of sigmas in an oblong compartment, in chocolate on cream slip. —2' to 3'. Fig. 29.
- Lr 153 Vase fragment; conical leaf motif with hatched interior, in chocolate on cream slip. Room 3, about —1'. Fig. 19.
- Lr 124 Vase fragment; poor condition; design obscure—vertical and slanting lines followed by probably solid triangle; chocolate on cream slip. —2' to 3'. Fig. 30.
- Lr 127 Vase fragment; two parallel lines meeting two others at the neck forming triangle within triangle; chocolate on cream slip. —2' to 3'. Fig. 24.
- Lr 196 Miniature tumbler fragment; a row of strokes, probably sigma ornament, at the shoulder, in chocolate; slip gone. Room 8, about —1'. Fig. 26.
- Lr 138 Vase fragment; parallel curves hanging from neck, in chocolate on cream slip. —2' to 3'. Fig. 14.

¹ It occurs at Kaudani.—*Mem. A. S. I.*, No. 37, Pl. X, K. 11.

- Lr 130 Vase fragment; part of a floral pattern in black on red slip; cf. examples from Trihni and Shah Hasan. —2' to 3'. Fig. 18.
- Lr 197 Vase fragment; part of a floral pattern in which petals are recognizable; chocolate on probably cream slip. Room 8, about —2'. Fig. 20.
- Lr 182 Dish fragment; hooks attached to a band, in black on cream slip. Room 1, about surface.
- Lr 224 Dish fragment; light grey; hooks attached to a band, in chocolate on burnished inner surface. Room 7, —1'. Fig. 34.
- Lr 214 Dish fragment; hooks attached to a band, in black on red slip. Room 8, —4'. Fig. 33.
- Lr 137 Vase fragment; pale ware; design in chocolate on cream slip; design probably same as on Am 146 (Pl. XVIII, 16). —2' to 3'. Fig. 15.
- Lr 199 Vase fragment; a row of sigmas at neck of vase in chocolate; poor condition; slip gone. Room 2, —1'.
- Lr 104 Vase fragment; enclosing rectangles with chequer in the middle, in chocolate on cream slip. About —2'.
- Lr 220 Vase fragment; enclosing rectangles with chequers in the middle, in chocolate on cream slip. Cf. Lr 104. Room 8, —4-25'.

Plain pottery, Terracotta, etc.

- Lr 6 Dish fragment; cord-marks at the back. —1' to 2'. Pl. XXXIV, 22.
- Lr 108 Dish-on-stand fragment; incised crescents. —1' to 2'.
- Lr 140 Dish-on-stand fragment; incised 'shooting rays'. +1'.
- Lr 142, 150 Perforated pottery vase fragments. +1'.
- Lr 194 Pottery tumbler; miniature size; ht. 1.9". Pl. XXXVI, 20.
- Lr 22 Handle of pottery cup (?); pierced with a hole.
- Lr 20 Terracotta bead; biconical; incised strokes; diam. 1". —1' to 2'.
- Lr 113 Terracotta bead; biconical; incised strokes; diam. 1.2". —1' to 2'.
- Lr 172 Terracotta bead; biconical; incised strokes; diam. 1.1". +26'.
- Lr 173 Terracotta bead; biconical; incised strokes; diam. 1.2". Room 2, —94'. Pl. XXXIII, 82.
- Lr 188 Terracotta bead; biconical; incised strokes; diam. 1.1". Room 2, —1.6'.
- Lr 141 Terracotta bead; long-barrel shape; L. 1.3". Pl. XXXIII, 81. +1'.
- Lr 19, 109, 139, 171 Terracotta 'imitation cakes'; max. L. 3" to 4". +1'.
- Lr 18 Terracotta bird-shaped whistle; crude execution; ht. 3.2". —1' to 2'. Pl. XXXIV, 11.
- Lr 110 Terracotta cart-frame. —1' to 2'.
- Lr 111 Terracotta animal figurine; max. L. 2.7". —1' to 2'.
- Lr 112 Terracotta animal figurine; max. L. 1.9". —1' to 2'.
- Lr 193 Vitreous paste bangle fragment; diam. 1.8".
- Lr 176 Copper object; probably part of some ornament; max. L. .3".
- Lr 26 Chert core; L. 2.8"; part of limestone band sticking. —1' to 2'.

- Lr 164 Chert core; L. 2.24"; retains part of limestone band. Room 3, —2'. Pl. XL, 15.
- Lr 27 Chert flake; L. 2.8". —1' to 2'.
- Lr 67 Chert flake with fine cutting edge; L. 4.1". —1' to 2'. Pl. XL, 13.
- Lr 68 Chert flake fragment with fine cutting edge; L. 3.2". —1' to 2'. Pl. XL, 14.
- Lr 69 Chert flake; L. 2.9". —1' to 2'.
- Lr 72 Chert flake; L. 2.2". —1' to 2'.
- Lr 74 Chert flake; L. 2.08". —1' to 2'.
- Lr 77 Chert flake; L. 1.75". —1' to 2'.
- Lr 34 Chert flake; pointed; L. 1.6". —1' to 2'.
- Lr 157 Chert flake; tapering; L. 2.64". Room 3, —8'.
- Lr 165 Chert flake; tapering; L. 2". Room 1, +.7'. Pl. XL, 11.
- Lr 184 Chert flake; pointed; L. 2". Room 1, —9'. Pl. XL, 12.
- Lr 209 Chert flake; L. 2.4". Room 2, —1.7'.
- Lr 66 Stone mortar with a narrow cavity in the middle; L. 9.7"; max. B. 4.4"; ht. 3". —1' to 2'. Pl. XIX, 38.

IV. THE SITE AT LAKHIYO (Lk).

- Lk 34 Painted potsherd; thick ware; light red; clay full of sand; leaves with hatched interior in compartments, in black on bright red slip. Pl. XXIII, 48.
- Lk 52 Painted potsherd; thick ware; light red; clay containing sand particles; hatched leaves in compartments, in black on bright red slip. Pl. XXIII, 44.
- Lk 37 Painted potsherd; thick ware; light red; clay containing particles of sand; corrugated lines in black on bright red slip. Pl. XXIII, 43.
- Lk 23 Painted pottery dish fragment; at the edge, bands in chocolate or black on red slip, and towards the interior a wavy band in chocolate or black. Pl. XXIII, 49.
- Lk 22 Plain pottery dish fragment; bottom left rough; originally 10.5" dm.; ht. 1½".
- Lk 48 Plain pottery cylindrical cup with a hole at neck; fragment; originally had at least another hole for suspension; ht. 1.4". Pl. XXXVI, 18.
- Lk 19 Plain pottery vase fragment with conical base; ht. 3.3". Pl. XXXVI, 26.
- Lk 20 Plain pottery vase fragment with pointed base; ht. 2.2".
- Lk 30 Plain pottery vase with flat base; ht. 3.1". Pl. XXXVI, 25.
- Lk 49 Plain pottery tumbler with flat base; ht. 2.5".
- Lk 18 Plain miniature pottery vase with high pedestal; ht. 1.4". Pl. XXXVI, 17.
- Lk 26 Plain pottery vase fragment; narrow mouth and ribbed shoulder; probably part of a pointed bottom vase like those frequently discovered at Mohenjo-daro; ht. 3".

- Lk 47 Plain pottery trough fragment ; ht. 5".
- Lk 27 Plain pottery vase fragment ; ribbed shoulder, and below, two vertical incised strokes which might be part of a pictograph.
- Lk 43 Plain pottery dish (?) fragment with a lug at one side ; ht. 2.6".
- Lk 24 Plain pottery vase fragment ; ribbed shoulder with light red wash at neck ; ht. 3.5".
- Lk 56 Plain pottery vase fragment with ribbed shoulder, and below three lines of cord-marks ; ht. 4.5". Pl. XXXIV, 21.
- Lk 25 Plain pottery vase fragment with ribbed shoulder and two wavy parallel lines impressed horizontally over the ribbings ; ht. 5".
- Lk 12 Plain pottery ladle fragment ; L. 3.9". Pl. XXXIV, 12.
- Lk 10 Neck of a perforated pottery vase ; ht. 3.3".
- Lk 44 Two fragments of a perforated vase ; ht. 6.5". Pl. XXXIV, 23.
- Lk 35 Miniature pottery lid ; dm. 1.64".
- Lk 36 Miniature pottery lid ; dm. 1.34".
- Lk 1 Terracotta Mother Goddess figurine, wearing necklace ; torso ; ht. 2.3". Pl. XXXIV, 6.
- Lk 2 Terracotta Mother Goddess figurine ; only head remaining ; eyes denoted by pellets of clay ; cup-like ears ; high head-dress ; ht. 2".
- Lk 3 Terracotta Mother Goddess figurine ; only head remaining ; ht. 1.65".
- Lk 4 Terracotta Mother Goddess figurine ; only head remaining ; ht. 2".
- Lk 5 Terracotta Mother Goddess figurine ; torso ; traces of waist ornament ; ht. 1.65".
- Lk 54 Terracotta Mother Goddess figurine ; torso ; traces of necklace and waist ornament ; ht. 2.5".
- Lk 58 Terracotta Mother Goddess figurine ; top portion up to bust remaining ; cup-like ears ; ht. 3.1". Pl. XXXIV, 7.
- Lk 55 Terracotta ; probably torso of a figurine ; the base pierced with holes ; ht. 2.2".
- Lk 6 Terracotta animal figurine ; probably a buffalo ; fragment ; eyes denoted by pellets of clay ; legs distinguished ; ht. 1.95". Pl. XXXIV, 10.
- Lk 28 Terracotta dog ; fragmentary ; legs are clearly distinguished ; ht. 2.25".
- Lk 11 Terracotta toy-cart frame ; fragment ; L. 3.95". Pl. XXXIV, 2.
- Lk 29 Terracotta toy-cart wheel ; dm. 2.6". Pl. XXXIV, 19.
- Lk 14 Terracotta bangle fragment ; dm. 3.2".
- Lk 15 Terracotta bangle fragment ; dm. 3.9".
- Lk 16 Terracotta bangle fragment ; dm. 2.2".
- Lk 32 Terracotta round-shaped bead (?) or ring ; dm. 1.8".
- Lk 31 Terracotta cone ; traces of paint visible ; L. 1.8". Pl. XXXIV, 3.
- Lk 63 Terracotta model cake ; two circular depressions on two sides ; semi-fired ; dm. 4". Pl. XXXIV, 20. The depressions are probably due to its being held by two fingers when wet. This is clear from Lk 46. Cf. p. 42, Ch 463 and p. 52 above.
- Lk 46 Terracotta model cake ; a circular depression on one side ; partly damaged ; dm. 3.75". This depression is more prominent than in Lk 63.

- Lk 59 Terracotta bead; long-barrelled; L. 3·7". Pl. XXXIII, 30.
 Lk 41 Five steatite beads: (a) discoid, fragmentary, dm. ·5"; (b) cylindrical, fragmentary, L. ·9"; (c) flat, barrelled, L. ·34"; (d) discoid, minute, dm. ·2"; (e) discoid, minute, dm. ·15". Pl. XXXIII, 28.
 Lk 51 Flint weight; cubical shape; ·95"×·95"×·75". Pl. XXXIII, 45.
 Lk 45 Bone awl (?) fragment; L. 1·55". Pl. XXXIII, 29.
 Lk 33 Chert flake; L. 1·35". Pl. XL, 25.
 Lk 40 Chert flake; L. 2·35". Pl. XL, 24.

V. THE MOUNDS NEAR JHANGAR (JH).

- Jh 1 Bell-shaped beaker; grey, polished ware; ht. 6·7"; dm. at mouth same. Pl. XXXV, 5.
 Jh 54 Big vase; grey ware; ht. 16·5"; tapering bottom which was probably meant to be let into the ground; dm. at mouth 11·75"; at rim, incised circlets; below, a line of slanting strokes for which cf. Jhukar and Lohumjo-daro; rough workmanship. Pl. XXXV, 10.
 Jh 9 Beaker fragment; grey ware; ht. 2·5"; a zigzag course of three parallel lines incised at shoulder. Pl. XXXI, 20.
 Jh 12 Beaker fragment; grey ware; ht. 5·5"; a perforated hole near the bottom; railing pattern incised at shoulder. Pl. XXXI, 33.
 Jh 13 Vase fragment; grey ware; railing with four uprights and a wicket-gate with cross, alternating; decoration incised. Pl. XXXI, 12.
 Jh 14 Beaker fragment; grey ware; a row of triangles with apex pointing towards neck; the triangles filled in by lines parallel to one of their sides; decoration incised. Pl. XXXI, 21.
 Jh 17 Vase fragment; grey ware; a line of continuous lozenges incised. Pl. XXXI, 28.
 Jh 18 Beaker fragment; a line of continuous lozenges incised. Pl. XXXI, 32.
 Jh 26 Vase with wide mouth and a spout at shoulder; fragment; grey ware. Pl. XXXI, 11.
 Jh 4 Bowl fragment with spout at neck; below the spout incised holes on either side; light red ware. Pl. XXXI, 6.
 Jh 21 Vase fragment; grey ware; a line of continuous lozenges incised. Pl. XXXI, 27.
 Jh 48 Vase fragment; grey ware; continuous lozenges incised in two bands. Pl. XXXI, 22.
 Jh 49 Beaker fragment; grey ware; ht. 2·6"; a zigzag course of two parallel lines incised. Pl. XXXI, 13.
 Jh 55 Beaker fragment; grey ware; ht. 2·1"; incised decoration as on Jh 49. Pl. XXXI, 5.
 Jh 32 Fragmentary vase; grey ware; indentation around shoulder; ht. 5·5". Pl. XXXI, 4.

- Jh 29 Painted potsherd ; light red ware ; a line of continuous lozenges in chocolate on buff slip.
- Jh 30 Painted vase fragment ; light red ware ; two bands of continuous lozenges in chocolate on red wash. Pl. XXXI, 29.
- Jh 31 Painted vase fragment ; light red ware ; principal ornament missing ; below, a solid zigzag band with arch-like recesses, in chocolate on light red slip. Pl. XXXI, 30.
- Jh 38 Painted vase fragment ; a band of lozenges in chocolate on light red slip. Pl. XXXI, 23.
- Jh 40 Painted vase fragment ; light red ware ; two zigzag parallel lines in chocolate on light red slip. Pl. XXXI, 26.
- Jh 41 Painted vase fragment ; light red ware ; two parallel bands of continuous lozenges, and below, a solid band practically similar to Pl. XXXI, 30 ; chocolate on light red slip. Pl. XXXI, 31.
- Jh 43 Painted vase fragment ; light red ware ; two parallel wavy lines in two bands ; chocolate on cream slip. Pl. XXXI, 24.
- Jh 56 Painted vase fragment ; light red ware ; two parallel wavy lines, and below, traces of a pattern similar to Pl. XXXI, 30 ; chocolate on light red slip. Pl. XXXI, 25.
- Jh 34 Half of a terracotta wheel ; crude execution ; dm. 3·65".
- Jh 46 b Terracotta wheel probably made out of the wall of a rejected vase ; dm. 2·7". Lines of the potter's wheel are visible on one side.
- Jh 53 Clay bead with incised parallel lines ; unburnt ; axis 1·3" ; dm. at the middle 1·6". Pl. XXXIII, 64.
- Jh 51 Copper awl fragment ; L. 2·1". Pl. XLI, 1.
- Jh 52 Copper chisel fragment ; L. 1·25". Pl. XLI, 2.
- Jh 5 Chert flake ; brown ; pointed ; L. 1·48". Pl. XL, 29.
- Jh 7 Chert flake ; brown with patches of black ; L. 2·25". Pl. XL, 30.

CHAPTER VI.—IN THE HILL TRACT OF JOHI

The Mound at Ghazi Shah.—The Manchhar plain gradually rises as it approaches the Khirthar Range, the intervening area being occupied by isolated outcrops of rock, forming a sort of low ridge running northwest to southeast. Beyond it a much higher ridge called the Bhit is reached, which is about 20 miles in length and has a maximum elevation of 2,790 feet. It has been described by a geologist as 'a great anticlinal saddle of Khirthar limestone'.¹ To the east of this hill, situated on one of its spurs, is the tomb of a Muhammadan saint Pir Ghazi Shah (Pl. XII, c), which has given its name to the locality. A ride of about 8 miles from Lohri brought us to this place and we fixed our camp in its close vicinity. In the valley below the spur of Ghazi Shah there is an earthen mound about 35' high, called Peyarejo-mari, or 'the house of Peyare', surrounded on all sides by stately jungle trees (Pl. VII, a). It is said to have been once appro-

¹ Blanford, *Geology of Western Sind*, p. 111.

priated by a Muhammadan named Peyare whose tomb is pointed out near the mausoleum of Pir Ghazi. There are several stories current about Peyare in this locality, but as they have no importance for our purpose we need not dilate upon them here. The only important point to note, however, is that he built a *kachcha* building on the top of the mound, protected by a crude rampart wall made of stones and débris and lived here for some time, thus fortified in his 'stronghold'. But it gave way before the heavy onslaught of his enemy whose 'magic power' soon reduced the mud fortress to a heap of ruins as it is to-day, and Peyare himself had to surrender! Whatever that may be, it appears that much of his building material was obtained from the ancient deposits of which the mound is composed, with the result that the ruins of his house and rampart wall are now thoroughly interspersed with potsherds and other antiquities. This fresh accumulation of the time of Peyare rises to a height of about 10 to 12 feet above the original surface of the mound. On its slopes also there must have been a few modern structures as testified to by a brick wall, at a height of 22' above the present ground level. Its bricks measure $9" \times 5\frac{3}{4}" \times 1\frac{3}{4}"$. Not far from this spot, at a height of 16', a thick copper coin of round shape, evidently of the Muhammadan period, was picked up. But the great antiquity of the site was proved by the black-on-red Indus pottery, chert flakes, perforated pottery, terracotta beads and bangles lying scattered over the whole face of the mound. There were also noticed amongst these surface objects, some fragments of painted pots of the Amri type, bearing the 'sigma' ornament and reddish brown band at the neck.

Hot-spring near the Mound.—An important point to note regarding this site is that it gets a perennial supply of water from a channel which, issuing out of a hot-spring in the neighbouring hills, debouches into the plain at the foot of Pir Ghazi's shrine. Blanford¹ who saw this spring thus describes it: "The water issues in a hollow at some elevation above the main valley, between ridges of lower Nari and Khirthar beds, and the level, or nearly level surface of the hollow for some distance from the spring, consists entirely of calcareous tufa, which terminates in a cliff, 200 feet high (by Aneroid), and several hundred yards in length. The water from the spring descends this cliff in a raised channel, formed by the deposit of tufa; and older channels, each raised above the general surface, may be traced here and there upon the face of the cliff There can be no reasonable doubt that the enormous mass of calcareous tufa seen has been deposited by the present spring. But on the surrounding hills there are other masses of tufa, at a higher level than the spring. These probably mark ancient points of issue." A channel diverted from the main water-course flows in the close vicinity of the site, and its water is utilized for irrigation and other purposes. The spring must have been a source of attraction also in olden times, and in this connexion Blanford's reference to the existence of traces of older channels over the cliff is interesting. Cultivation in this hilly region does not entirely depend on spring water. A quantity of rain water comes

¹ *Geology of Western Sind*, pp. 111-12. The spring is described also by an earlier writer, Capt. Vicary who was an officer under Sir Charles Napier.—*Proceedings of the Geological Society of London*, Vol. III (1847), p. 245.

GHAZI SHAH AND PANDI WAHI



(a) THE MOUND NEAR GHAZI SHAH.



down through torrent-beds, the most important of these being the Naig Nāi near Pir Ghazi which is a fairly large stream. Just by the side of the mound there is a moat called Mārī Khad. For some time during the year it holds the overflow water which is utilized in the neighbouring fields.

Trench 1.—Exploratory trenches and pits were dug at six different places in the mound (Pl. XLIV). Trench 1, measuring 42' by 15', was sunk on its eastern side, in which a depth of 15' was reached. The top of the trench was 11·8' above, and its bottom 3·2' below the base of the mound (-35'). In this cutting, traces of two, and also probably of a third, strata were exposed. The uppermost stratum was represented by a stone wall of irregular masonry, the bottom of which varied between 4' and 2·8' above the base. Then at the base of the mound, that is to say at the present ground level, were found the remains of the intermediate stratum, and about 2' further down, those of the third were in evidence. Thereafter the soil was sterile and rocky. The first two layers were found separated by a deposit of pottery débris and rubble, and could be clearly distinguished. At each layer the structures had all but disappeared, leaving only a few stones or fragments of walls to bear witness. All through the excavation black-on-red pottery was found in abundance, mixed occasionally with sherds of an unpainted buff ware of a porous texture. This latter appeared first at a level of 6' above the ground, and thereafter continued to occur systematically down to the ground level. About 2' above ground, bichrome pottery of the Amri type first turned up in this trench, and it went on appearing, along with the black-on-red, till we reached, 2' below the ground level.

Pits 2-5.—Pit 2 was excavated at a level of about 17' below the top of the mound, and made only 5' deep. In this pit and also very near it, a few fragments of the Amri type of pottery came to light on the surface. It therefore became necessary to ascertain the actual distribution of the two potteries in the core of the mound. Accordingly, three pits, marked respectively 3, 4 and 5 were sunk at the base at various points. Pit 3, measuring 40'×8', started at 29' below the top of the mound, was carried down to 39·6'. Pit 4, measuring 35'×8', was sunk at 30·5', and reached a depth of 41·5'. And Pit 5, measuring 16'×8', which was driven at a level of 32' below the top, had a depth reaching 43·9'. In all these pits, as in Trench 1, bichrome pottery was found in fair number. Taking the depths of both the classes of pottery into consideration, in Trench 1 and Pits 3-5, the distribution of the wares appears to have been as follows: The black-on-red pottery came out from different levels between 35·7' and 39·2' below the datum line. It was most frequent between 35·7' and 28·8'; thereafter, its number became appreciably less at 30·4' and 32·3', and finally it became quite a rarity. It was from about 30·4' that the black-on-red pottery began to be found together with the bichrome pottery. Excepting the few examples picked up at very high levels, a circumstance that has been explained below, the bichrome pottery was wholly confined to levels varying between 30·4' and 42·5' below datum, it being most frequent between 35' and 42·5'.

Trench 6.—The latest deposits of the prehistoric period represented at Ghazi Shah were found in Trench 6 which was sunk at a level of about 14' below the

top of the mound and made 6' deep. A stone wall was laid bare in this trench, and from its side some pottery and other articles relating to this phase of the culture were collected. One stray specimen of bichrome pottery was also picked up here. The occurrence of isolated specimens of this class of pottery here and elsewhere, at such high levels, must be considered in the light of the results of stratification recorded above. It can be explained only by the fact that the top layer was occupied during the Muhammadan period by *kachcha* houses, the materials of which were no doubt collected from the base of the mound. In this process earlier objects could easily have been planted at levels to which they did not originally belong.

Black-on-red pottery.—As a large number of painted pottery (Pls. XXVI, XXVII; pp. 95—99) were collected from the excavations at Ghazi Shah, it is possible to consider it in some detail. The designs naturally play the most important part, and first of all I shall deal with them so far as the black-on-red ware is concerned. It should be noted, however, that the specimens come from at least *two* different strata, and some of the patterns, *e.g.*, the bull-and-tree, are probably to be associated with the earliest period of occupation. A certain percentage of the designs do not occur at Mohenjo-daro at all.

The Bull.—Some of the designs refer to the animal world and the most important ones are those that represent the bull (Pl. XXVI, 12, 22, 26 and Pl. XXVII, 26). This animal occupied a rather prominent place in the domestic life of the Indus people, as it is figured on a large number of seals found at Harappa and Mohenjo-daro. But curiously enough, it is not represented at Mohenjo-daro on the painted pottery discovered there so far.¹ The representations on the Ghazi Shah pottery are those of the humped bull. A similar figure of the humped bull occurs once or twice on the Nal pottery,² but is more common on the potteries of certain other sites of Southern Baluchistan, for instance, Kulli and Mehi.³ A characteristic feature of the drawings, and in this the examples from Ghazi Shah agree, is that some parts of the animal are filled in solid, and the rest are indicated by hachure. The neck of the bull is not filled in solid on Gs 119 (Pl. XXVI, 26), because the ear has to be differentiated; and similarly, a circular space is left blank around the eye. The neck and the eye of the bull are treated in an identical manner in the Nal example, and the eye is treated very much the same at Kulli and Mehi. On Gs 220 (Pl. XXVI, 3), the figure is highly stylized, the feet of the animal resembling to some extent those of a bird. Gs 165 (Pl. XXVII, 26) shows an 'arrow-headed' tree motif with a bull, a combination that appears also at Mehi.⁴ The bull is figured in relief on some of the asphalt vases of the Second Period of Susa,⁵ but does not appear on its painted pottery. Reliefs of the bull have been discovered also at Al-Ubaid; but there too, painted representations of this animal are unknown. The device

¹ *Mohenjo-daro*, Vol. I, p. 324.

² *Ibid.*, No. 35, Pl. XVII, fig. 59.

³ *Mem. A. S. J.*, No. 35, Pl. XVII, fig. 59; *ibid.*, No. 43, Pl. XXII, Kul. v. iii, 1 and Pl. XXVIII, Mehi, 1, 7. 2.

⁴ *Ibid.*, No. 43, Pl. XXVIII, Mehi, 1. 7. 2.

⁵ *Mem. Del. en Perse*, tome XIII, Pl. XXXIV, figs. 5, 6.

of the bull on the potteries of Sind and Baluchistan was probably an innovation of the Eastern zone.

The Antelope.—The horned figure, which has survived only in part on Gs 159 (Pl. XXVI, 13), looks like an antelope. There were probably a number of antelopes depicted on the vase, and the idea of a jungle was evidently conveyed by the trees. Possibly Gs 151 is another fragment of the same pot. The antelope appears rarely on the Mohenjo-daro pottery, and there again it receives a different treatment.

The Peacock and other birds.—Several potsherds with representations of birds were found. Gs 103 and 104 (Pl. XXVI, 2) show one of them as strutting about, and on Gs 78 another bird appears with a serpent held at its beak. The latter is undoubtedly a peacock, which can be recognized from its crest. Gs 78 should be compared with analogous examples from Chāñhu-daro already described.¹

Plant Designs.—By far the largest number of potsherds bear decorations which appertain to the vegetable kingdom. The 'arrow-headed' plant motif appearing on Gs 7, 8, 52, 71, 86, 145, 146 and 165 (*e.g.*, Pl. XXVI, 11, 12) is rather peculiar. It seems to represent a tree or bush with leafless branches. The top of the stem is curiously enough marked by an arrow. On the aforesaid examples, the branches are shown by thin straight lines, but on Gs 188, 237, 238, 255, and 203-305 (*e.g.*, Pl. XXVII, 36), they are made into broad and pointed curves hanging down. Then there is the pleasing treatment of the *Pipal* tree or its leaves, as may be seen on Gs 100 (Pl. XXVI, 1), 213 and 6. It is often combined with thick curvilinear strokes, as in Pl. XXVI, 20 (*cf.* also Lohumjo-daro, Pl. XXII, 12), which is exactly similar to what occurs at Dabarkot in North Baluchistan.² The date-palm probably appears on Gs 36 (Pl. XXVI, 14) and its branches on Gs 134 (Pl. XXVI, 34). These branches³ have often been described by scholars as the 'comb' motif, probably in the absence of complete examples. A design, which is copied from the date-palm, appears on Gs 157, and another tree is seen on Gs 101, 151 and 159. A plant with biconical leaves occurs on Gs 187, and similar leaves appear on Gs 215. A row of detached biconical leaves forms the pattern in the uppermost band of Gs 234, and such leaves touching one another at the ends is the principal motif of Gs 102 and 133. The leaves are arranged in columns on Gs 102, which offers a perfect analogy to examples from Dabarkot.⁴ Isolated leaves of the biconical variety are frequently inserted in compartments made by the enclosing sides of a concave square, as on Gs 35 and 81. Such leaf placed vertically, alternating with zigzag lines, fills two bands on Gs 214. Sometimes floral patterns are made into concentric circles, which, as in Gs 117, look more or less like a spider's web. Then there occurs the motif which consists of a circle with a dot in the centre and a row of dots around its

¹ *Cf. Mem. Del. en Perse*, tome XII, pp. 215-16, figs. 430-433.

² *Mem. A. S. I.*, No. 37, Pl. XV, D. N. c. 8.

³ *Cf.* a similar tree design on the Samarra pottery.—Herzfeld, *Die Vorgeschichtlichen Topferereien von Samarra*, 1930, Pl. XVIII, fig. 38.

⁴ *Mem. A. S. I.*, No. 37, Pl. XV, D. N. d. 1.

circumference (Gs 161, 195). This probably represents a flower, and is somewhat analogous to the floral motif appearing on the painted potteries of Trihni and Shah Hasan. On Gs 161, it occupies the centre of a pattern looking something like a cross filled in by hachures, and is also placed between the arms of the cross. And on Gs 46, this type of floral motif occurs in one compartment, and detached biconical leaves in another. Among other specimens bearing designs allied to, or derived from, vegetation forms, mention may be made of Gs 251 which shows a straight plant with leaves, and Gs 80 in which an attempt is made probably to denote an entanglement of branches. Most of these patterns have their parallels on the painted pottery of Mohenjo-daro.

Geometric Designs.—Designs purely of a geometrical character are comparatively rare on the black-and-red pottery. On Gs 93, there appears the triangle ornament, the interior of which is filled in by hachures parallel to its base. On Gs 84, there is a series of cross-hatched triangles meeting one another at points, they being so placed that the base of one triangle is made parallel to that of the next. Gs 19 bears a motif to which we shall have occasion to refer again elsewhere. It consists of a number of vertical lines alternating with smaller horizontal strokes arranged in a vertical row. This is extremely rare at Mohenjo-daro. A very peculiar design appears on Gs 163, 166 and 235. It is a cross with each arm composed of three lines, and in the centre of it is a circle enclosing a plastic layer standing out in relief (*e.g.*, Pl. XXVII, 52). It bears affinity to a pattern that is common on the Nal pottery.¹ Another interesting ornament is the ladder motif seen on Gs 194, composed of broad parallel lines. There are two motifs which are peculiar to dishes, namely serrated spirals as on Gs 296 and hooks as on Gs 175 and 317. The latter occurs at the lower stratum of Amri and has been found by Stein at many sites in Baluchistan.²

Bichrome pottery.—This pottery (Pl. XXVII; pp. 99-101), which presents no difference in type³ with the Amri ware, is usually of a thin fabric and of pale or light red colour, being not so well burnt as the black-on-red ware. It shows decoration in two colours (not counting the ground colour). Some of the specimens are now devoid of a second colour, but there is no doubt that these should also be reckoned as belonging to the present group. The majority of the specimens bear only geometric pattern, painted in black on buff or light red slip. Reddish brown is applied in a plain band at the neck and occasionally repeated also on other parts of the vessel, and black is used often side by side with chocolate in the execution of the various motifs. Different patterns are evolved by the permutation and combination of triangular ornaments *e.g.*, twin triangles meeting at a point, each group being separated from the other by the interposition of vertical lines, two triangles with concave sides forming a parallelogram, and so on. A complicated pattern, in which the principal element is a triangle divided into thirteen smaller triangles, some cross-hatched and others left blank, occurs on Gs 244-46. An interesting point to note is that one of the compartments

¹ *A. S. R.*, 1904-05, Pl. XXXIII, fig. 8; and *Mem. A. S. I.*, No. 43, Pl. XXXIII, Nal. 9.

² *See e. g. Mem. A. S. I.*, No. 43, Pl. I, Z. N. 5.

³ *See Pl. XXXVIII*, 12, 13, 14 and cf. Amri examples of the straight-shouldered and steep-sided types.

contains an ibex figure (Pl. XXVII, 51). A row of lozenges filled in by hatches is a favourite ornament. In some cases the lozenges are also filled in solid. Another ornament is a continuous line of 'sigmas.' A line of semi-circular loops, which often contain a dot in each and are treated also as eye-shaped compartments, forms an interesting festoon pattern. In some cases the loops are composed of three parallel lines (Pl. XXXVIII, 14), such multiple parallel lines being characteristic of the Nal pottery. The last three motifs *viz.*, lozenges, sigmas and semi-circular loops occur at Amri, and in fact wherever else the thin bichrome ware is met with, either in Sind or in Baluchistan. The lozenges and the sigmas, as stated elsewhere, occur also on the painted pottery of Persia and Mesopotamia.

Ghazi Shah in relation to other sites.—The stratification of the mound at Ghazi Shah made it sufficiently clear that the bichrome pottery with geometric patterns ('the Amri Ware') must be assigned to the *earliest period* of occupation. During this period, it was current side by side with a class of black-on-red pottery which again may be regarded as typical of one of the earliest phases of the Indus civilization. Later, the black-on-red pottery alone was used at Ghazi Shah, so that the bichrome pottery with geometric patterns may be regarded as an intrusive element in the Indus zone. The earliest stratum of Ghazi Shah is represented, therefore, by two essentially different styles of pottery, and it is possible that at this date two different influences were at work, one Indian and the other non-Indian. So far as this feature is concerned, we find almost perfect analogies at the sites of Kulli and Mehri in Southern Baluchistan. A definite link between the earliest culture of Ghazi Shah and Kulli-Mehri is the design of a tree in combination with a bull (Pl. XXVII, 26), which occurs as a repeating ornament on the vases at all the three sites. The bull itself, taken individually, as depicted on the pots of Ghazi Shah, has also much in common with the representations on the pottery of Kulli-Mehri. At Nal, we have an identical representation of the bull on a sherd which technically belongs to the Indus group;¹ but there on a polychrome vase, the figure is very much stylized and receives a linear treatment.² The ornament consisting of a multiple-line cross with a knob in the middle, which occurs on the black-on-red pottery from the lower levels of Ghazi Shah (*e.g.*, Pl. XXVII, 53), is found also on the polychrome pottery of Nal,³ but there the treatment has become more complex.

Sundry objects.—The profusion of painted pottery at Ghazi Shah was quite a contrast to the comparative paucity of plain pottery found there in the course of excavation. Among the latter a mentionable object is Gs 248 which is part of a trough. Its clay shows a mixture of chopped straw and its base on the inner side is decorated with incised interlacing circles. A large number of terracotta toys and animal figurines were also discovered. These include bulls, some of which are pierced with a hole at the neck, a painted rattle, and toy-cart frames decorated with painted lines. As regards personal ornaments, there were found barrel-shaped beads and painted bangles of terracotta, steatite beads of

¹ *Mem. A. S. I.*, No. 43, p. 167 and Pl. XXXIII, Nal. 13, and *ibid.*, No. 35, Pl. XVII, 59.

² *Ibid.*, No. 35, Pl. XVII, 61.

³ *Ibid.*, No. 35, Pl. XVII, 36-39.

the discoid type, a cylindrical cornelian bead, a barrel-shaped bead of agate, a cylindrical copper bead, a copper ring and a bangle, and a silver ring. Implements of both chert and copper were found. Besides chert flakes of the usual rectangular type of which some are about three inches long, mention may be made of an awl, a chisel and a small leaf-shaped arrow-head, which are all of copper. The arrow-head has its original tang portion intact. A detailed list of these objects is given at the end of this Chapter (pp. 101-103).

Tando Rahim Khan.—A site was also examined on the outskirts of Tando Rahim Khan on the torrent-bed of Angai, four miles to the north of Ghazi Shah. Tando Rahim Khan is an important Police Station of the Sind frontier. Its importance is due to its being situated on the principal line of communication between Sind and the Saruna valley in the Jhalawan District of Baluchistan. Immediately to the south-east of the village, we came across a mound about 10' high. A part of it has been occupied by Muhammadan tombs, but the rest of the area, which is still free, is littered with painted potsherds and rubble. As the place falls on the way from Ghazi Shah to Tando Rahim Khan, it naturally attracted our attention, and being within easy reach of our camp it was possible to examine the contents of the mound by excavation. The operations carried out at the site brought to light fragments of stone walls and also painted potsherds, chert flakes, terracotta bangles, a ringstone and a fragmentary painted vase about 13" high (pp. 103-105). The pottery of Tando Rahim Khan is the same familiar bichrome ware, mostly representing straight-shouldered vessels (*e.g.* Pl. XXXVIII, 26) of a pale fabric with light red or buff slip, on which designs are painted in black or in chocolate (Pl. XXX, 6-9, 15-18, 26-28, 31-34, 40-42, 47-48). There is frequently introduced a second colour in addition, *viz.*, reddish brown, which on many specimens has entirely disappeared. The designs are all geometrical and include the usual motifs noticed elsewhere *e.g.*, festoons of multiple lines, hatched or solid lozenges, chevron, solid triangles with apex pointed downwards, sigmas and so on. Of special interest is the cross of multiple lines with a circle in the centre which occurs on Ta 9 (Pl. XXX, 26). This motif, familiar from the Baluchistan sites, was found also on the black-on-red pottery from the lower levels of Ghazi Shah as stated above. One thing is significant: there has not been found here even a single sherd of the 'Indus' type of painted pottery, or any other object which could be associated specifically with that culture.

Significance of the discovery.—Thus within a range of four miles we examined these two chalcolithic stations, Ghazi Shah and Tando Rahim Khan. Each had its own distinguishing features: the former yielded both black-on-red and bichrome potteries, whereas the latter, bichrome pottery only. The comparative rarity of bichrome ware at Ghazi Shah clearly suggests that it was by no means characteristic of the people who lived there; they were primarily accustomed to the use of pots decorated in black and red. This fact, coupled with the universal use at the other site of pots decorated in two colours and bearing designs different from those on the black-on-red pottery, suggests that the contact of culture, such as that evidenced at Ghazi Shah, was probably

localized within the boundary of Sind itself. Although the source of the influence on the Indus pottery may have to be ultimately traced to Baluchistan and to sites even farther afield as those in Sistan, there appear to have been a number of intermediate stations on the borderland of Sind which were directly responsible for the transmission of foreign elements into the Indus valley. One such station was no doubt Tando Rahim Khan, where, as already stated, there was found nothing akin or similar to, the objects discovered at Mohenjodaro and other Indus sites.

Journey to the south of Ghazi Shah.—We were now in the strip of valley beyond the Manchhar lake, immediately to the east of the Khirthar hills. This valley is watered by the hill streams of Angai and Naig, and scores of other hill torrents and natural springs. Its northern limit extends beyond Tando Rahim Khan, and on the south it touches the north-western corner of the Kohistan section of Karachi District, near the passes of Thot and Sai. We decided to explore this valley as far as possible, with a view to discover other links in the chain of which Ghazi Shah and Tando Rahim Khan form parts. And first of all an excursion to the south was arranged.

Mounds at Gorandi.—Proceeding seven miles to the south of Ghazi Shah we came to a place called Gorandi where, near the channel of a spring, there are two mounds one of which is known as Ghazishahjo-thul. This mound, denominated here as 'a', is about 15' high, flat in the middle and has piles of stones at its edges. The biggest one of the piles, which is on the east of the mound, has a conical top. This curious feature, as well as the occurrence on the surface of bricks measuring $9" \times 6\frac{1}{4}"$, which were evidently of the Muhammadan period, led us to conclude that the site must have been at one time the scene of much disturbance. And the tradition is that a *kot* or fortress once stood at this place. On its north, within a stone enclosure, there was seen a pair of huge grindstones associated with the memory of the saint Ghazi Shah. A little examination proved that the so-called *kot* rests on earlier deposits, certainly of the prehistoric period. Pieces of buff-coloured pottery and chert flakes were picked up from the slopes of the mound, and the little excavation that we could carry out here in the course of a hurried visit, led to the discovery of ten pottery objects. One of these was a jar 2' 5" high, Gr (a) 1, which contained half of a dish, $11\frac{1}{2}"$ in diameter. There were also five other jars of smaller size, in one of which were found a miniature tumbler, nine chert scrapers all having a family likeness, an unfinished cornelian bead and a shell piece. There were besides a small vase and a dish. The half dish bears four holes in a line which seem to have been made by some sharp instrument. Another noteworthy object was a cup-shaped mortar of thick red ware. The jars mentioned above are without rim and some of them have straight shoulder like the pots of 'Amri'. This would show that Gorandi (a) should be regarded as a station of the 'Amri' culture. In a pit nearby, a stone wall was exposed, and a small vase was picked up from its side, at a depth of some 3' from the top of the wall. But not a single painted potsherd could be found. No doubt painted pottery was in use at this site, but on all the specimens that were collected the painted layer had entirely

flaked off. The other mound at Gorandi, marked as 'b', is situated about three furlongs to the southwest of 'a'. Its height is only about 8' and it has more or less a flat appearance. It was strewn all over with rubble and chalcolithic pottery. The finds from the surface included chert flakes, terracotta bangle fragments, buff-coloured sherds, perforated pottery and the head of a terracotta bull. Further, during the trial diggings there turned up fragments of black-on-red pottery. The designs appearing on them are 'fish-scale,' solid squares with concave sides and conical leaf, as well as broad and pointed curves hanging down, the last motif being evidently part of the tree pattern as depicted on the black-on-red pottery of Ghazi Shah. Other objects recorded were a cornelian bead, a shell bangle fragment and part of a copper ring.¹

Hill at Naig.—Seven miles farther south, on the same route, is a beautiful spot called Naig, girt by the Bado on the east and the Bhit section of the Khirthar on the west. The name of the village is derived from that of the Naig stream which waters this valley. Besides the Naig there are seven other spring-fed channels in this hill-girt area; these have given it the appearance of an oasis in the midst of a stony desert. The main water supply of the locality is provided by a hot-spring in a cliff overlooking the village along whose side its water is diverted through a channel. Just above the village, the stream descends into a cascade which is harnessed by a water-wheel for grinding flour and other cereals. There is a Police outpost at Naig, opposite which is Lakshmirjo-mari, a hill about 100' high. It first appears in a communication² addressed by Captain Preedy to Sir Bartle Frere in 1851, but it does not seem to have been examined by any archæologist before our visit. Fragments of chalcolithic pottery lay scattered over the entire face of the hill from top to bottom, and also in the area around its base. At various places on the slopes of the hill there were seen huge boulders lying in piles, which must have been at one time used in some construction. At the edges of the hill, especially on the east side, traces of walls built of such boulders were clearly visible. But it was impossible to say whether they dated from early times or not. One of the Mirs, in the 18th century, piled up in heaps an enormous quantity of stones in the neighbouring hills for the construction of a fort. But he died before the project could be carried out. The hill at Naig is believed by people to have once been a *kot* or fortress, and the presence of the walls on the slopes probably supports this view. At the base of the hill, embedded in the débris, were noticed other stone walls which at any rate appeared to be of the prehistoric period. The outlines of many of them could easily be traced, and there was no doubt that a large number of rooms, both big and small, lay buried in this area. There were also probably houses clinging to the slopes of the hill in this period, similar to those we encountered at other hill sites of Western Sind. But there was no opportunity to carry out any trial operations at Naig, and we had to be satisfied with whatever surface relics we could pick up during the short visit. These included a few specimens of black-on-red pottery of the typical 'Indus' type, and some chert flakes.

¹ See 'Catalogue', pp. 105-6. ² *Journal of the Bombay Branch of the Royal Asiatic Society*, Vol. V, 1854, p. 352.

Ali Murad.—Returning to Ghazi Shah, we proceeded northward up the Angai valley and came to the mounds of Ali Murad, 8 miles from Ghazi Shah and 14 miles to the south of Johi. In 1847, Capt. Vicary, who passed by Ali Murad, recorded that the country through which he passed was “sandy and tolerably level, being a plain of from one to two miles in breadth, widening towards the north, and situated between the outer range of mural cliffs and the more elevated Hala Mountains” i.e., the Khirthar. From Ali Murad to Johi, he further observes, “no water was to be had at any intermediate point, the roads for the most passing over a naked and barren desert.”¹ The mounds of Ali Murad are situated on rocky beds in the midst of this uninviting sandy plain. During the rains the dry aspect of the country is relieved to some extent by the Angai stream which passes by the side of the mounds. It then receives a good supply of water coming down from the Khirthar side, and extends farther towards the east. It may be supposed that the Angai supplied in early times, as now, the necessary water for irrigation. During the month of January, when we were camping at Ali Murad, the bed of the stream was practically dry except for a little pool of water standing to the northeast of the village.

The Mounds at Ali Murad.—The mounds lie in two distinct patches, one immediately to the north of the village and another to its northeast. The former, which is the more conspicuous of the two, occupies an area of about 1,100' × 1,000' and has a height of 27' (Pl. VIII, *a* and Pl. XLIV). There are two wide depressions in its north and south, where originally there may have been open courts. In the depression on the south there is a ruined well (Pl. VIII, *c*) built of stones, having a diameter of 8'. At the time of our visit it was found exposed down to a depth of 12' from surface, but not touching the water-level. At the southwest corner of the area there is an outcrop of rocks, and closely adjoining is the grave of one Mitha Fakir which is surrounded by piles of loose stones. The rocks appear again to the east of this spot, where also there are a number of graves. At a little distance from this mound, to its east and northeast, is the other group of mounds which have been appropriated to a very large extent by the Muhammadans for their burials. The ruins spread in a line from north to south, and here and there the natural rock presents itself. At the northern extremity stands the tomb of Bahli Shah, a well known sacred place of the Johi Taluka. The land between the two chains of mounds was at places found dotted with potsherds, but there was greater profusion of pottery on the surface of the mounds. A casual examination was sufficient to establish the chalcolithic character of the site, a noteworthy feature being the thousands of terracotta ‘imitation cakes’ lying scattered at various places.

Site of a fortress.—Excavations were started near the well referred to above. These led to the discovery of a long rampart wall of irregularly dressed stone blocks, each about 2' in length, 1' in height, and 1' or a little more

¹ *Proceedings of the Geological Society of London*, Vol. III (1847), p. 346. Vicary does not, of course, mention the mounds at Ali Murad.

in thickness. On the southeast of the mound it was followed up to a length of 170'; and found standing to a maximum height of 5' only (Pl. VIII, b). This wall was rather interesting, as instead of running in a straight line it took an unusual bend, turning in and out at several points. Portions of it were also traced on the north and east of the mound. There was its continuation also probably on the west, so as to enclose the buildings represented by the mounds entirely. But the limited time at our disposal did not allow us to make this point clear. Towards the south, near the well, the rampart wall showed a definite break, and beyond the gap, to its west, the remains of another long wall were discovered (Pl. XLIV). This wall, which showed recesses and was followed for a length of 65', might be the continuation of the same rampart wall, and probably joined the natural rocks on the southwest. The area thus enclosed, which included the entire group of mounds, bore visible traces of innumerable stone walls. These no doubt represented the basement of the various chambers and apartments into which the buildings were divided. In all likelihood the site was that of a fortress, or fortified palace, of which one entrance seems to have been near the well as indicated by the gap. Other entrances, if there were any, could not be located. The well, it may be noted, belongs to the same age as the fortress, and so far is the only example known of a stone well of this early period. Fragments of a small stone wall were exposed immediately outside the rampart wall, but what connexion it had with the other was not clear. A kind of mud-mortar appeared to have been used in the construction of the buildings, similar to that noticed by Stein at several sites in Baluchistan. The mounds of Ali Murad deserve excavation on a larger scale in view of the fact that a fortified site of the chalcolithic times was disclosed here for the first time. But as we could not halt here for more than a week, this task had to be left over for the future excavator.

Finds.—The painted pottery of Ali Murad is characterized by elements typical of Indus ware (Pl. XXIV, 2, 4, 7-9, 12, 13, 16, 17; pp. 106-7). The designs are painted in black on red, and the pots are generally of a thick fabric and well fired. The specimens collected were, however, not very many. Among the designs mention may be made of squares with concave sides, dotted flowers and leaves in compartments, *Pipal* leaves and conventional tree motifs. A big unpainted jar (Al 83, Pl. XXXV, 14) was found along the inner face of the rampart wall together with another fragmentary jar and a copper celt about three inches long. Within the big jar were found three chert flakes, a miniature pottery vase, fragments of a pottery dish and an 'imitation cake'. A copper awl, over three inches long, was found lying by the side of the same wall, near the southwestern corner. A few objects used as personal ornaments were also collected *e.g.*, cornelian beads of long barrel shape, a fine agate bead, also of barrel shape, and discoid beads of steatite. A piece of coral (Al 90), which bears on one side marks of continued rubbing, was probably used as a flesh-rubber. A terracotta object, being part of a water-chute or drain, has interlacing circles incised on its inner side. A round lump of terracotta with a depression on each side found here is similar to those from Chāñhu-daro and other places, and might

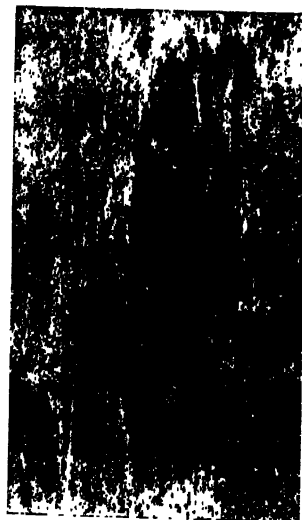
THE SITE AT ALI MURAD



(a) A PANORAMIC VIEW OF THE MOUNDS.



(b) THE DEFENCE WALL AS PARTIALLY EXCAVATED.



(c) A STONE WELL.

have been thrown into the fire as an offering.¹ Amongst terracotta figurines there were the bull and also probably the pig. Several small vases, saucers, cups and tumblers of plain pottery were registered from the excavations. There were also a few dishes-on-stand with incised crescentic markings, and lastly, perforated pottery vases.² The last mentioned object of which examples have been discovered at Mohenjo-daro and at almost all other Indus sites, has been identified by a scholar with the "jar full of water pouring through thousand holes, through hundred holes" alluded to in the *Atharvaveda*.³ But it is inconceivable how these vessels, which invariably have a big hole at the bottom and smaller holes all over the wall, could be used for pouring water. Perforated pots somewhat analogous to the Indus examples are reported also from Kish.⁴ One of them has a large hole in the base like the Indus ones and may have served identical purpose whatever that may be. The use of a perforated pot (*kumbhī*) in certain Vedic sacrifices for straining liquor is mentioned in the *Satapatha-Brāhmaṇa*.⁵ The pot used to be stuffed with goat's hair and sheep wool, and the liquor allowed to pass through it and trickle down through the holes on to the sacrificial fire. The perforated pots of Indus sites could have been more appropriately employed for purposes of straining than for anything else.

Pandi Wahi.—At Ali Murad information was received of a mound near a village called Pandi Wahi (Pl. VII, *b*). The camp moved up there, but before starting the operations I had to proceed first to Mohenjo-daro on urgent business, which being concluded I returned to field by way of Dadu, the nearest Railway station to Pandi Wahi. From Dadu after a journey of twelve miles in a motor lorry I came to Johi, the headquarters of the Taluka, and from there a camel ride of sixteen miles brought me to the camp. The latter part of the journey was made across a wide stretch of country, full of torrent-beds and irrigation embankments. Pandi Wahi is a small village with a police outpost, at the foot of the Khirthar Range overlooking the tortuous bed of the Nari river. The mound, which is to the north of the village, stands near the Raj Wah, a branch of the Nari. It is 20' high, having a maximum length of 450' and a maximum breadth of 350'. The site has suffered considerable ravage at the hands of the local people. To its north, south and east are to be seen irrigation embankments some of which are made of the débris cut away from the mound. A part of the area has been used again as a burial ground by the Muhammadans. Still the prehistoric character of the site could be recognised from the specimens of painted pottery, etc., lying on the slopes of the mound and from the discovery among these of a leaf-shaped chert arrow-head (Pw 1).

Trenches 1 and 2 (Pl. XLV).—Trench 1, measuring 80'×12', was sunk at the southwestern fringe of the mound. Starting from 7' below the highest

¹ Above, pp. 42, 68; and cf. p. 52.

² See 'Catalogue', pp. 106—108 below.

³ *Mem. A. S. I.*, No. 31, p. 14.

⁴ *A Sumerian Palace and 'A' Cemetery, Kish*, Part II, p. 154 and Pl. LIV, fig. 33.

⁵ *Sacred Books of the East*, Vol. XLIV, pp. 234-235, and n. 2.

point of the mound it was carried down to a depth of 16'. At a level of about 13' below 'datum', certain fragmentary jars of big size were found lying *in situ*, marking the ground level of the latest period of occupation. Immediately to its north, and occupying the highest part of the mound, was Trench 2 which measured 28' by 10'. Its top lay only a foot below the 'datum', and its bottom reached a depth of about 6'. In Trench 1, objects that were found down to the level of the jars, appeared to be of the same character as those from Trench 2, and they could on the whole be relegated to the same period. The stratification of Trench 1 proved important. It began to yield, as we proceeded from the top, a class of black-on-red pottery, with a sprinkling of bichrome sherds, until the layer of the broken jars was reached. Below this level there was noticed a distinct paucity of the black-on-red ware, but a great profusion of the bichrome fabric, and ultimately at the bottom of the trench the latter alone was found. The lie of the two fabrics, one resting upon another in a vertical shaft, was decisive as to the fact that the culture represented by the bichrome ware must have been supplanted by another associated with the black-on-red. This succession of one culture by another at Pandi Wahi must have necessarily taken some time, judging from the accumulation of deposits as revealed in Trench 1.

Pits 3 and 4 (Pl. XLV).—Pits 3 and 4 were opened at the foot of the mound, practically on ground level, with a view to testing how the two classes of pottery were related to one another in other parts of the mound. Pit 3 measured 14' by 14', and reached a depth of a little over 5' below the ground level. It was at this depth that we came upon a nest of pottery vessels, all smashed to pieces (Pl. VII, c). One of these contained a few bones which Dr. B. Prashad has pronounced to be those of the 'domestic goat.' Four of the vessels were recovered in fragments and later reconstructed by joining together the various parts. Traces of paint could be detected on some of the pots, but they were all too few to enable us to form an idea of the actual nature of the decoration. Further clearance in the pit brought to light fragments of a beautiful dish-on-stand (Pw 36) and those of a vase (Pw 187), both decorated with designs in black executed on red slip. The find of black-on-red pottery at this level of the mound was rather surprising, especially as it was not associated with any specimens of the bichrome ware encountered at the lower levels of Trench 1. The way in which this group of pottery was lying pell-mell in the area excavated in Pit 3 showed that we were probably digging into a refuse heap. The articles might have been thrown here from a house of the later period. But another explanation may not seem unwarrantable. The black-on-red pottery might have been contemporaneous with a class of bichrome ware, representing one of the earlier phases of the Indus civilization, as at the site of Ghazi Shah. Pit 4 covered a much smaller area than Pit 3, and only a few objects were recorded from it, all of them specimens of painted pottery. At about the ground level in this pit potsherds of a red fabric with the fish-scale (Pw 32) and the bull (Pw 34-35) designs painted in black, were brought to light. These sherds might have also dropped from the upper levels. But the explanation given above regarding similar finds from Pit 3 appears to be the more likely. A

descriptive list of selected objects from Pandi Wahi is appended at pp. 104-114. Here, we may draw attention to those that bear special significance.

Stone arrowhead.—A leaf-shaped chert arrowhead (Pw 1) was picked up from the surface, as already stated, but no other specimen was found in the actual excavations. Similar stone arrowheads were brought back in large numbers by Sir Henry McMahon and Sir Aurel Stein from prehistoric sites in Sistan,¹ and a few of them were collected by the latter also at Periano-Ghundai and other sites in Northern Baluchistan.² This type of implement has a rather wide distribution. Besides Sistan and Baluchistan, it has been traced also in Egypt, Mesopotamia and as far east as Japan, while some examples have been recovered by Stein from the Lop-nor Desert in Chinese Turkestan.³ But there is no proof of its ever being in vogue in the interior of India, and the specimen from Pandi Wahi is so far the only one of its kind discovered even in Sind itself. It may, therefore, be assumed that this type of stone arrowhead was of non-Indian origin. There is a similar example in copper from Ghazi Shah (Pl. XLI, 24), and leaf-shaped spearheads of copper have been found at Mohenjo-daro and other Indus sites. These specimens in copper might well have developed from the stone arrowheads, which first appear in the Solutrean times and were so widely distributed in the Neolithic Age.

Stratification of Painted pottery.—The number of typical black-on-red Indus specimens was comparatively few. The majority consisted of pale red or buff ware, with decoration in monochrome, and the bichrome ware of the Amri type, both of which come under the category of the pale fabric. Among the black-on-red mention may be made of Pl. XXVIII, 2-5, 10, 16 and 24, and Pl. XXIX, 37 and 38. Of these, figs. 2-4, 10 and 16 represent potsherds found between 13' and 11' below the 'datum' line in Trench 1; figs. 5 and 24, from Pit 4, at 19.1' and figs. 37 and 38, from Trench 1, at 21.6' to 26'. As regards the other potteries, it may be noted that excepting only a few *e.g.*, the buff colour sherds shown in Pl. XXVIII, 30 and 38, all the specimens came from the lower levels of the mound, that is to say from about 18' and below. Since we should be guided by the levels of the majority of specimens belonging to a particular group, it may be concluded that during the earlier period the pot-fabrics of the buff and bichrome class were the fashion although along with it was produced a certain quantity of the other fabric as well.

The Decoration and its analogies.—Among the patterns on the black-on-red pottery we notice particularly the *Pipal* leaf, the string of eye-shaped loops repeated at intervals, the fish-scale and the bull. In one instance (Pl. XXVIII, 30), the bull motif appears also on a vessel of buff ware. The bull, as treated at Pandi Wahi, is similar to the examples on the pottery of Ghazi Shah and on that of Kulli and Mehi.⁴ The 'fish-scale' frequently occurs at Mohenjo-daro, but its

¹ The McMahon collection (1903-05), which is now in the Quetta Museum, includes some very fine specimens of leaf-shaped arrowheads of chert, hornfels, jasper, chalcedony, quartzite and other stones. It has not yet been published. The collection made by Stein (1915-16) is described in his *Innermost Asia*, Vol. II, p. 964 and Pl. CXII.

² *Mem. A. S. I.*, No. 37, pp. 40, 41 and Pl. IX, P. SW. c. 26; also Pl. XVI, Kr. 1; and *ibid.*, No. 43, Pl. VI, Su. 5.

³ R. A. Smith, *Man*, 1911, No. 52, and Pl. F; see also Stein, *Serindia*, Vol. I, pp. 363 ff.

⁴ Above, p. 82.

use is by no means restricted to the Indus pottery; it has been found also on the pottery of Nal. Pl. XXIX, 37 shows a pattern which consists of two motifs alternating *viz.*, a triangle with concave sides divided into three solid triangles, leaving a triangular central portion blank; and a chequer of nine squares of which five are solid and arranged in the form of a cross, while the remaining four are left blank. A triangle divided into compartments occurs on the bichrome pottery of Ghazi Shah, and the type of chequer on that of Chauro to be described later. Pl. XXIX, 38 presents a circular band containing a series of solid triangles with incurved sides together with semi-circular loops partly filled in solid. Although a pattern of exactly this description has not been found elsewhere, both the motifs are familiar to us from sites which have yielded bichrome pottery. It is therefore clear that although the mode of their colouring is akin to that of Indus, these specimens from Pandi Wahi cannot be looked upon as altogether free from the influence of the buff wares. While some of the ornaments connect the black-on-red culture of Pandi Wahi with Indus, yet there are others that betray its kinship with Nal and other stations in Baluchistan. But it is the buff ware that reveals the larger number of affinities with the Baluchi pottery. Witness, for instance, the solid and cross-hatched lozenges, chevron, two solid triangles meeting at a point, and above all the enclosing squares surrounded by the stepped ornament, Pl. XXVIII, 18, which is so characteristic of the Nal pottery.¹ A design, which consists of a band of single-line or double-line hooks, is peculiar to a type of flat dishes. Identical dish-patterns are known also from sites in Baluchistan explored by Stein.² An interesting motif appears in Pl. XXVIII, 40, which has been rarely met with elsewhere in Sind, but is common on the pottery of Baluchistan. It bears the likeness of an one-edged comb with a line projecting upwards from each end. This motif, which is found both at Kulli and Mehi and also probably at Shahi-tump,³ bears curious resemblance to examples appearing on the pottery of the First Period of Susa.⁴ Another rare pattern is made up by the ladder motif used as a repeating ornament, as on Pl. XXVIII, 1. It occurs also at Gwadar and Nundara in Makran.⁵ Pl. XXVIII, 41 reproduces part of a dish decorated at the edge on the inner side with a group of parallel arcs repeated at intervals. This motif is employed in an identical manner on a bowl discovered at Nal.⁶ In the case of some of the designs, which occur here and also in Baluchistan, it is possible to cite parallels even from distant Mesopotamia. Pl. XXVIII, 8, showing a group of wavy parallel lines placed in a slanting position, may be compared with examples from Samarra.⁷ Particular attention may be drawn to Pl. XXVIII, 39, which shows columns of solid triangles with incurved sides in a band.

¹ Cf. *Mem. A. S. I.*, No. 35, Pl. XXI, fig. 13.

² *Ibid.*, No. 43, Pl. I, Z. N. 1.

³ *Ibid.*, No. 43, Pl. XXIII, Kul. V. vii. 2; Pl. XXX, Mehi, II. 4-5; and Pl. XVII, Sh. T. Vi. 13. b.

⁴ De Morgan, *Prehistoire Orientale*, tome III, p. 56, fig. 7.

⁵ *Mem. A. S. I.*, No. 43, Pl. XX, G. D. 4, G. D. 8, and Pl. XXV, Nun. 13.

⁶ *Ibid.*, No. 35, Pl. XIX, fig. 11.

⁷ Herzfeld, *Die Vorgeschichtlichen Topferwaren von Samarra*, 1930, Pl. XIX, fig. 61a.

This pattern, which has been found also at Amri, is well established at Samarra.¹ Another such pattern is found in Pl. XXVIII, 7 which reproduces a cup. The upper portion of the cup from shoulder to waist is decorated with cross-lines, and below, the surface is left blank. There are certain cups from Samarra having this identical form of decoration.² The broad meander pattern, appearing on Pl. XXVIII, 38, is again reminiscent of a similar pattern common on the Samarra pottery.³ As regards the row of solid or cross-hatched lozenges, which is found at Pandi Wahi and occurs in fact wherever the 'Amri culture' has been traced in Sind, there are interesting parallels offered by the painted pottery of Al-Ubaid.⁴

Types of pottery.—The types of vessels⁵ represented by the painted pottery of Pandi Wahi are not very many. There are the cylindrical bowls (e.g. Pl. XXXIX, 9, 13—15), pots with straight rim moulded in continuation of the shoulder, or with splayed out neck, cups with flat bottom (Pl. XXXIX, 11), pans with ring base (Pl. XXXIX, 12), saucers, flat dishes and dishes-on-stand. Pl. XXVIII, 4 is a fragment of a dish with flanged shoulder, having definitely Indus decoration. The straight shoulder (e.g., Pl. XXXIX, 6, 8) was a characteristic feature of the earlier pottery and may have survived at Pandi Wahi in a modified form down to a later period. An unusual type is Pl. XXXV, 7 (Pw 40), which shows a vessel belonging to the group from Pit 3. It is elliptical in shape, with slight indication of a neck, and retains traces of the original painted flutings. Among plain pottery, we have a pan, and a few vases with bulged out body, pierced with three holes at the rim for suspension.

Objects of 'Mohenjo-daro' type.—Besides the black-on-red painted pottery with typical Mohenjo-daro ornaments, there were found steatite discoid beads, fragments of pottery dish-on-stand with incised strokes as decoration, and a terracotta imitation cake of triangular shape. The last mentioned object came from the lower stratum in Pit 3, and the rest from the upper layer of Trench 1. But on the whole, objects of the 'Mohenjo-daro' type were comparatively rare at this site.

A Catalogue of selected objects from sites in Johi.

I. THE MOUND AT GHAZI SHAH (Gs).

Painted Pottery ; designs in black or chocolate on red slip.

- Gs 5 Neck of vase ; only a zigzag line. Trench I,—25·7'.
- Gs 6 Sherd ; fish-scale and *Pipal* branch. Trench I,—25·7'. Pl. XXVI, 16.
- Gs 7 Neck of vase ; 'arrow-headed' tree. Trench I,—25·7'. Pl. XXVI, 8.
- Gs 8 Neck of vase ; 'arrow-headed' tree and two hanging zigzag lines.
Trench I,—25·7'. Pl. XXVII, 18.
- Gs 9 Neck of vase : 'arrow-headed' tree. Trench I,—25·7'.
- Gs 10 Sherd ; cross-lines. Trench I,—25·7'.

¹ Herzfeld, Pl. XXXVI, fig. 233c. It occurs also at Musyan. See above p. 30 : Am 393.

² *Ibid.*, Pl. XXIII, figs. 115, 116.

³ *Ibid.*, Pl. XX, fig. 89.

⁴ Hall and Woolley, *Ur Excavations*, Vol. I, Pl. XVII, figs. 1695, 1812.

⁵ For some typical Pandi Wahi examples of pottery shape and decoration see Pl. XXXIX, 6—15.

- Gs 11 Neck of vase; leaves. Trench I,—25·7'.
- Gs 12 Sherd from neck of vase; part of 'arrow-headed' tree and two hanging zigzag lines. Trench I,—25·7'.
- Gs 13 Sherd; *Pipal* branch. Trench I,—25·7'.
- Gs 19 Neck of vase; column of horizontal strokes alternating with parallel uprights. Trench I,—25·7', Pl. XXVI, 15.
- Gs 21-22 Two sherds; comb-shaped branches. Trench I,—25·7'.
- Gs 32 Bowl fragment; entangled branches and bludgeon-shaped strokes on inner side; the latter repeated also outside; diam. 6·6". Trench I,—27·2'. Pl. XXVI, 28.
- Gs 35 Sherd; interlacing squares with concave sides; dotted flower in each square and hatched biconical leaf between two sides of squares. Trench I,—27·2'. Pl. XXVI, 27.
- Gs 36 Sherd; tree with hanging comb-shaped branches. Trench I,—27·2'. Pl. XXVI, 14.
- Gs 38 Sherd; fish-scale. Trench I,—27·2'.
- Gs 40 Neck of vase; vertical biconical leaf alternating with a hanging zigzag line. Trench I,—27·2'.
- Gs 43 Sherd; interlacing squares with concave sides; flower in each square and hatched biconical leaf between two sides of squares. Trench I,—27·2'.
- Gs 44-45 Sherd; *Pipal* leaf with detached curve strokes filling intervening space. Trench I,—27·2'.
- Gs 46 Neck of vase; leaves and dotted flowers in compartments. Trench I,—27·2'. Pl. XXVII, 7.
- Gs 49 Sherd; design as on Gs 43. Trench I,—27·2'.
- Gs 52 Neck of vase; 'arrow-headed' tree. Trench I,—27·2'. Pl. XXVII, 37.
- Gs 71 Neck of vase; 'arrow-headed' tree alternating with hanging zigzag line. Trench I,—27·2'. Pl. XXVI, 6.
- Gs 73 Sherd; column of biconical figures alternating with similar row of bow-shaped curves. Trench I,—27·2'.
- Gs 75 Sherd from neck of vase; balls arranged in the form of triangles in one band, and *Pipal* leaf in another. Trench I,—27·2'.
- Gs 76 Sherd; interlacing squares with concave sides; biconical leaf between two sides, and flower in each square. Trench I,—27·2'.
- Gs 78 Sherd; part of peacock holding serpent at beak. Trench I,—27·2'. Pl. XXVI, 23.
- Gs 80 Sherd; entanglement of branches indicated by wavy lines. Trench I,—27·2'. Pl. XXVI, 4.
- Gs 81 Sherd; cross-lines, dotted flowers, leaves and concave squares respectively in different bands. Trench I,—27·2'. Pl. XXVI, 17.
- Gs 83 Sherd; part of tree with comb-shaped branches. Trench I,—27·2'.
- Gs 84 Sherd; cross-hatched triangles meeting at a point; between arms, dots, leaves, etc. Trench I,—27·2'. Pl. XXVII, 8.

- Gs 86 Neck of vase; 'arrow-headed' tree alternating with hanging zigzag line and bull of which only hind portion remains. Trench I,—27·2'. Pl. XXVII, 26.
- Gs 87 Sherd; bull figure. Trench I,—27·2'.
- Gs 90 Neck of vase; bull and 'arrow-headed' tree alternating; head and hind portion of two bulls are seen. Trench I,—27·2'.
- Gs 93 Neck of vase; triangles, with hatches parallel to base. Trench I,—27·2'. Pl. XXVII, 14.
- Gs 100 Neck of vase; *Pipal* tree. Trench I,—28·8'. Pl. XXVI, I.
- Gs 101 Neck of vase; tree with comb-shaped branches. Trench I,—28·8'. Pl. XXVI, 9.
- Gs 102 Sherd; columns of hatched biconical figures alternating with similar columns of parallel dagger-shaped curves. Trench I,—28·8'. Pl. XXVI, 7.
- Gs 103 Neck of vase; birds strutting about; and below, balls arranged in the form of triangles; Trench I,—28·8'. Pl. XXVI, 18.
- Gs 104 Sherd; birds, one with upraised head. Trench I,—28·8'. Pl. XXVI, 2.
- Gs 113 Sherd; *Pipal* branch. Trench I,—28·8'.
- Gs 117 Sherd; floral design of spider-web type. Trench I,—28·8'. Pl. XXVI, 35.
- Gs 119 Sherd; bull figure, partly filled in solid and partly hatched; space left blank around eye and neck. Trench I,—28·8'. Pl. XXVI, 26.
- Gs 120 Sherd; fish-scale. Trench I,—28·8'.
- Gs 122 Neck of vase; part of bull figure. Trench I,—28·8'.
- Gs 123 Sherd; part of tree with comb-shaped branches. Trench I,—28·8'.
- Gs 132 Neck of vase; *Pipal* tree. Trench I,—28·8'.
- Gs 133 Sherd; hatched bow-shaped compartments and zigzag lines. Trench I,—28·8'. Pl. XXVI, 19.
- Gs 134 Sherd; comb-shaped branches alternating with zigzag line. Trench I,—28·8'. Pl. XXVI, 34.
- Gs 141 Sherd; fish-scale. Trench I,—28·8'. Pl. XXVI, 31.
- Gs 144 Dish fragment; ht. 2·1". Trench I,—28·8'.
- Gs 145 Vase fragment; 'arrow-headed' tree alternating with two hanging zigzag lines. Trench I,—28·8'. Pl. XXVI, 11.
- Gs 146 Vase fragment; 'arrow-headed' tree; other motifs missing. Trench I,—28·8'. Pl. XXVII, 38.
- Gs 150 Vase fragment; horizontal strokes in column alternating with parallel uprights. Trench I,—28·8'.
- Gs 151 Sherd; tree with comb-shaped branches. Trench I,—28·8'. Pl. XXVI, 13. See Gs 159.
- Gs 159 Sherd; stags and tree with comb-shaped branches. Trench I,—30·4'. Pl. XXVI, 13. See Gs 151.

- Gs 156 Sherd; birds and tree with comb-shaped branches. Trench I,—30·4'.
- Gs 157 Neck of vase; comb-shaped branches. Trench I,—30·4'. Pl. XXVI, 25.
- Gs 158 Sherd; tree with comb-shaped branches. Trench I,—30·4'.
- Gs 161 Neck of vase; dotted circles denoting flowers, between the arms of a cross. Trench I,—30·4'. Pl. XXVI, 5.
- Gs 162 Neck of vase; bull figure partly filled in solid, and partly indicated by hatches. Trench I,—30·4'. Pl. XXVI, 22.
- Gs 163 Dish fragment; cross, each of its arms composed of three parallel lines; a knob in the middle of the cross marked by a circle. Trench I,—30·4'. Pl. XXVII, 53.
- Gs 165 Neck of vase; 'arrow-headed' tree alternating with bull whose hind portion only remains. Trench I,—30·4'. Pl. XXVI, 12.
- Gs 166 Dish fragment; design as on Gs 163. Trench I,—30·4'. Pl. XXVII, 47.
- Gs 175 Dish fragment with long hooks. Pit 2,—20·5'. Pl. XXVII, 15.
- Gs 187 Sherd; tree with biconical hatched leaves. Trench I,—32·3'. Pl. XXVI, 10.
- Gs 188, 203-205 Four sherds; broad hanging curves, pointed, probably denoting branches of tree. Trench I,—32·3'. Pl. XXVII, 35 (Gs 204), Pl. XXVII, 36 (Gs 203), Pl. XXVII, 45 (Gs 188).
- Gs 195 Neck of vase; dotted flower motif in compartment. Trench I,—32·3'. Pl. XXVI, 21.
- Gs 194, 197 Sherds; step pattern made of broad lines. Trench I,—32·3'. Pl. XXVII, 25 (Gs 194).
- Gs 199 Sherd; bull figure; only part of design remains. Trench I,—32·3'.
- Gs 200 Dish fragment; design as on Gs 163. Trench I,—32·3'.
- Gs 213 Sherd; *Pipal* leaves. Trench I,—30·4'. Pl. XXVI, 20.
- Gs 214 Sherd; biconical hatched leaves with zigzag lines intervening. Trench I,—30·4'. Pl. XXVII, 17.
- Gs 215 Sherd; biconical hatched leaves alternating with zigzag lines. Trench I,—30·4'. Pl. XXVI, 30.
- Gs 217 Sherd; hanging ladders. Trench I,—30·4'.
- Gs 220 Neck of vase; bull figure with legs like those of bird. Trench I,—30·4'. Pl. XXVI, 3.
- Gs 234 Vase fragment; hatched biconical leaves in a band; below, cross-lines. Trench I,—30·4'. Pl. XXVI, 29.
- Gs 237-239 Three sherds; 'arrow-headed' tree with broad hanging curves denoting branches; curves as on Gs 188, 203-205. Trench I,—32·3'. Pl. XXVII, 48 (Gs 238).
- Gs 243 Neck of vase; alternate arcs in a band and below, a continuous horizontal line intersected by small uprights.¹ Trench I,—33'. Pl. XXVI, 24; also Pl. XXXVIII, 13.

¹ A similar pattern occurs at Nal.—*Mem. A. S. I.*, No. 35, Pl. XVII, 17.

- Gs 249, 235 Fragments of dish; design as on Gs 163. Trench I,—30·4'. Pl. XXVII, 52 (Gs 235).
- Gs 251 Neck of vase; a straight plant. Trench I,—30·4'. Pl. XXVII, 43.
- Gs 253, 254 Two fragments of dishes; design as on Gs 163. Pit 3,—39·2'.
- Gs 255 Sherd; broad hanging curves as on Gs 237-39. Pit 3,—39·2'. Pl. XXVII, 46.
- Gs 296 Dish fragment; two bands of serrated spirals. Trench I,—37'. Pl. XXVI, 32.
- Gs 299 Dish fragment; double-line hooks. Trench I,—37'. Pl. XXVII, 16.
- Gs 303 Dish fragment; cross pattern as on Gs 163. Pit 3,—35'.
- Gs 317 Dish fragment; hooks. Pit 4,—37·6'. Pl. XXVII, 24.

Additional Specimens.

- Gs 33 Bowl fragments; ht. 2·8"; light red ware; black bands on burnished surface. Trench I,—27·2'. Pl. XXXVII, 30.
- Gs 3 Vase fragment; ht. 3·5"; light red ware; black bands. Trench I,—25·7'. Pl. XXXVII, 29.
- Gs 247 Tumbler with pedestal; ht. 3·6", continuous ladder pattern in black; slip gone; painted bands in the interior. Pit 6,—19·8'. Pl. XXXVII, 39.
- Gs 222 Bowl fragment; ht. 3·3"; black bands. Trench I,—30·4'. Pl. XXXVII, 38.
- Gs 98 Bowl fragments; ht. 3·5"; a line of thick strokes on the rim in chocolate on red wash. Trench I,—27·2'.
- Gs 167 Tumbler fragment; ht. 1·7"; dm. 2·3" at mouth; bands in chocolate outside on burnished surface; wavy lines in chocolate at neck on the inner side. Trench I,—30·4'.
- Gs 191 Vase fragment; ht. 2·5"; chocolate bands at neck; below, alternate ball and semi-circular motif. Trench I,—32·2'.
- Gs 1 Vase; ht. 2·7"; black bands on burnished surface. Trench I,—25·7'. Pl. XXXVII, 22.
- Gs 232 Vase with slender neck; ht. 4·75"; black bands on burnished surface. Pit 6,—17·8'. Pl. XXXVII, 21.
- Gs 233 Dish fragment; incised strokes in the middle. Trench I,—30·4'. Pl. XXVI, 33.

Bichrome Pottery.

- Gs 244-246 Vase fragments; light red ware; triangle divided into thirteen smaller triangles, of which nine are cross-hatched and four left blank; the big triangle alternates with another of which the internal figures are filled in solid; an ibex in one compartment; black and chocolate on cream slip. Trench I,—33'. Pl. XXVII, 49-51.
- Gs 309 Vase fragment; light red ware; reddish brown band at neck; below, groups of twin solid triangles meeting at a point, in chocolate on cream slip; each group separated from another by a vertical line; reddish brown band repeated below. Pit 4,—37·6'. Pl. XXVII, 23.

- Gs 311 Vase fragment; light red ware; reddish brown band at neck; below, twin triangles meeting at a point, separated by three verticals, in chocolate on cream slip. Pit 4,—37·6'. Pl. XXVII, 33.
- Gs 219 Vase fragment; light red ware; hachured triangles in two horizontal rows; the upper and lower triangles meet at apexes and form blank parallelograms; black on light red slip. Trench I,—30·4'. Pl. XXVII, 40.
- Gs 287 Vase fragment; light red ware; cross-hatched triangles with concave sides in black on cream slip; every next one placed upside down, so as to form a biconical figure between two triangles. Trench I,—37'. Pl. XXVII, 2.
- Gs 278 Vase fragment; light red ware; hatched triangles, two forming a parallelogram; chocolate on cream slip. Pit 5,—41·1'. Pl. XXVII, 4.
- Gs 174 Vase fragment; light red ware; reddish brown band at neck; below, a row of continuous lozenges filled in by parallel hatches, in chocolate on cream slip. Pit 2,—20·5'. Pl. XXVII, 41.
- Gs 280 Vase fragment; pale ware; reddish brown band at neck; below, traces of a row of lozenges as on Gs 174, in chocolate on cream slip. Pit 5,—41·1'.
- Gs 285 Vase fragment; pale ware; chocolate band at neck; ornament as on Gs 174, in chocolate on cream slip. Pit 6,—20·3'. Pl. XXVII, 44.
- Gs 269 Vase fragment; pale ware; ornament as on Gs 174, in chocolate on cream slip. Trench I,—35'. Pl. XXVII, 42.
- Gs 180 Vase fragment; light red ware; traces of reddish brown band at neck; below, ornament as on Gs 174, in chocolate on cream slip. Pit 2,—20·5'. Pl. XXVII, 32.
- Gs 323 Vase fragment; pale ware; traces of reddish brown band; continuous solid lozenges in chocolate on cream slip. Pit 4,—36·6'. Pl. XXVII, 34.
- Gs 332 Vase fragment; light red ware; two parallel rows of continuous hatched lozenges, so drawn as to make a number of blank parallelograms (cf. Gs 219), in chocolate on cream slip. Pit 5,—42·5'. Pl. XXVII, 27.
- Gs 184 Vase fragment; light red ware; traces of reddish brown band at neck; below, pattern almost like Gs 332; chocolate on light red slip; Pit 2,—21·5'. Pl. XXVII, 28.
- Gs 202 Vase fragment; light red ware; pattern almost like Gs 332; black on light red slip. Trench I,—32·3'. Pl. XXVII, 30.
- NOTE.—On Gs 184 and 202, the lozenges of the first row have one of their sides parallel to, or rather coalescing with, the band at the neck; and on Gs 332, one of their corners only touches this band.
- Gs 331 Pale ware; lozenge in chocolate on cream slip. Pit 5,—42'. Pl. XXVII, 31.
- Gs 281 Vase fragment; pale ware; cream slip inside and out; reddish brown band at neck; below, a line of sigmas, in chocolate on cream slip. Pit 5,—41·1'. Pl. XXVII, 21.

- Gs 290 Vase fragment; light red ware; reddish brown band and below, a line of sigmas in chocolate on cream slip. Trench I,—37'. Pl. XXVII, 29.
- Gs 289 Vase fragment; pale ware; traces of reddish brown band; a line of sigmas in chocolate on cream slip. Trench I,—37'. Pl. XXVII, 20.
- Gs 177 Vase fragment; pale ware; cream slip inside and out; a row of sigmas in chocolate. Pit 2,—20·5'. Pl. XXVII, 11.
- Gs 315 Vase fragment; pale ware; festoon of continuous semi-circles in black on cream slip. Pit 3,—37·6'. Pl. XXVII, 10.
- Gs 310 Vase fragment; light red ware; traces of reddish brown band at neck; below, a festoon of continuous semi-circular loops with a parallel zigzag line; a dot in each of the loops; chocolate on creamish slip. Pit 3,—37·6'. Pl. XXVII, 9.¹
- Gs 277 Vase fragment; light red ware; traces of reddish brown band; below, a festoon of continuous semi-circular loops, each loop of three parallel lines, with an oval dot in the centre and two zigzag lines below; chocolate on cream slip. Pit 5,—41·1'. Pl. XXVII, 19.²
- Gs 312 Vase fragment; light red ware; a band of uprights at neck; below, semi-circular eye-shaped motifs in a continuous line; chocolate on cream slip. Pit 3,—37·6'. Pl. XXVII, 1.
- Gs 178 Cup fragment; pale ware; ht. 1·5"; cream slip inside and out; a line of uprights in chocolate. Pit 2,—20·5'. Pl. XXVII, 22.
- Gs 182 Vase fragment; pale ware; faint traces of reddish brown bands; dentiform pattern in chocolate on cream slip. Pit 2,—21·5'. Pl. XXVII, 39.
- Gs 276 Vase fragment; pale ware; ladder motifs in chocolate on cream slip. Pit 5,—41·1'. Pl. XXVII, 3.
- Gs 307 Vase fragment; pale ware; probably a conical leaf filled in by hachures, in black on creamish slip. Pit 3,—35'. Pl. XXVII, 12.
- Gs 260 Vase fragment; pale ware; cream slip inside and out; probably solid triangle following a series of slanting lines, in chocolate. Pit 4,—41·3'. Pl. XXVII, 6.
- Gs 272 Vase fragment; light red ware; chocolate band at neck; traces of a reddish brown band; cream slip. Pit 5,—40'. Pl. XXVII, 5.
- Gs 226 Vase fragment; light red ware; design as that of a human skeleton, in chocolate on cream slip. Pit 4,—38·4'. Pl. XXVII, 13.

Plain Pottery.

- Gs 171 Miniature vase; partly handmade and partly turned on the wheel; smoky; ht. 1·04". Trench I,—30·4'. Pl. XXXVII, 11.
- Gs 283 Miniature tumbler; cylindrical body with flanged neck; ht. 2". Trench 6,—20·3'. Pl. XXXVII, 12.
- Gs 284 Miniature tumbler with pedestal; ht. 1·8". Trench 6,—20·3'. Pl. XXXVII, 10.

¹ See also Pl. XXXVIII, 12.

² See also Pl. XXXVIII, 14.

- Gs 168 Perforated pottery fragment. Trench I,—30·4'.
- Gs 248 Fragmentary base of a pottery trough with incised interlacing circles; husk mixed with clay; L. 12·6". Trench I,—30·4'. Pl. XXXI, 17.
- Gs 25 Pottery dish-on-stand fragment; incised strokes. Trench I,—25·7'. Pl. XXXI, 2.

Terracotta Toys and Animal Figurines.

- Gs 62 Bull figurine; L. 3·3"; legs not distinguished. Trench I,—27·2'.
- Gs 153 Bull figurine with one horn intact; L. 3·5"; type same as Gs 62. Trench I,—28·8'.
- Gs 154 Bull figurine; L. 3·1"; type as Gs 62. Trench I,—28·8'.
- Gs 155 Bull figurine with a hole at neck; L. 3"; type as Gs 62. Trench I,—28·8'.
- Gs 172 Bull figurine with bent head; legs are distinguished; L. 2·2". Trench I,—30·4'.
- Gs 362 Head of parrot with a hole at neck; L. 1". Trench I,—32·3'.
- Gs 356 Miniature lid with pointed knob; grey; dm. ·6". Trench I,—30·4'.
- Gs 27 Miniature lid with pointed knob; semi-burnt; dm. 1·45". Trench I,—25·7'.
- Gs 125 Miniature lid with pointed knob; semi-burnt; dm. 1·3". Trench I,—28·8'.
- Gs 252 Imitation mother-of-pearl valve with a hole at edge; L. 3·6". Trench I,—30·4'.
- Gs 58 Toy-chariot fragment with cross-lines in chocolate on one side; L. 3·1". Trench I,—27·2'.
- Gs 59 Toy-chariot fragment with lines in chocolate on one side; L. 3·3". Trench I,—27·2'.
- Gs 169 Toy-chariot fragment with cross-lines in chocolate; L. 2·4". Trench I,—30·4'. Pl. XXXIV, 1.
- Gs 193 Rattle fragment with concentric circle pattern having central dot, in chocolate; dm. 2·2". Trench I,—32·3'. Pl. XXXIV, 13.
- Gs 173 Toy-chariot wheel; diam. 2·5". Trench I,—30·4'. Pl. XXXIV, 14.

Personal Ornaments.

- Gs 31 Long-barrelled terracotta bead; L. 2·05". Trench I,—25·7'. Pl. XXXIII, 47.
- Gs 338 Long-barrelled terracotta bead; L. 2". Trench I,—25·7'.
- Gs 30 Terracotta bangle fragment; dm. 2·9"; flat. Trench I,—25·7'.
- Gs 170 Terracotta painted bangle fragment; flat; strokes in chocolate on red wash on two sides; dm. 2·15". Trench I,—30·4'.
- Gs 206 Terracotta painted bangle fragment; flat; decoration in chocolate on two sides as on Gs 170; dm. 2·5". Trench I,—32·3'.
- Gs 206 Terracotta painted bangle fragment; round; strokes in chocolate; dm. 2·8". Trench I,—32·3'. Pl. XXXIV, 4.
- Gs 342 Steatite beads; thin and discoid; dm. ·5", ·45", ·4" and ·35" respectively. Trench I,—27·2'. Pl. XXXIII, 31.

- Gs 341 Cornelian bead; round and flat; dm. .25". Trench I,—27·2'. Pl. XXXIII, 33.
- Gs 335 Semi-opal bead; short-barrelled; L. .3". Trench I,—25·7'. Pl. XXXIII, 32.
- Gs 346 Cornelian bead; cylindrical; L. .6". Trench I,—27·2'. Pl. XXXIII, 39.
- Gs 353 Terracotta bead with ribbed body; long-barrelled; L. .85". Trench I,—28·8'. Pl. XXXIII, 40.
- Gs 371 Agate bead fragment; long-barrelled; L. 1". Trench I,—35·6'. Pl. XXXIII, 46.
- Gs 372 Copper bead; cylindrical; L. .25". Trench I,—36·2'. Pl. XXXIII, 34.
- Gs 340 Copper ring; dm. about .7". Trench I,—27·2'. Pl. XXXIII, 48.
- Gs 348 Copper bangle fragment; dm. about 1·6". Trench I,—27·2'. Pl. XXXIII, 50.
- Gs 351 Thin copper sheet, probably part of a fillet; L. 1·65"; B. .35". Trench I,—29·8'. Pl. XLI, 23.
- Gs 339 Silver ring fragment; dm. .75". Trench I,—25·7'. Pl. XXXIII, 49.

Copper Implements.

- Gs 364 Crescent-shaped object; L. 2·1"; B. .25". Trench I,—27·2'. Pl. XLI, 19.
- Gs 344 Leaf-shaped arrow-head with the original tang intact; L. 4·45"; max. B. .55". Trench I,—27·2'. Pl. XLI, 24.
- Gs 345 Awl; L. 3·65". Trench I,—27·2'. Pl. XLI, 30.
- Gs 349 Part of a chisel; L. 1·1"; max. B. .22". Trench I,—29·8'. Pl. XLI, 20.

Chert Implements.

- Gs 130 Flake; white; L. 2·95". Trench I,—27·8'. Pl. XL, 18.
- Gs 181 Flake; brown; L. 2·04". Pit 2,—20·46'.
- Gs 208 Flake; black; L. 1·45". Trench I,—32·3'.
- Gs 225 Flake; brownish; L. 2·8". Trench I,—32·3'.
- Gs 242 Flake; grey; L. 2·02". Trench I,—32·3'.
- Gs 274 Flake; brownish; L. .9". Pit 5,—40'.
- Gs 359 Flake; light grey; L. 1·4". Trench I,—30·4'.
- Gs 365 Flake; brown, L. 2·75". Trench I,—30·4'. Pl. XL, 17.
- Gs 369 Flake; cream; L. 2·1". Trench I,—35'.
- Gs 374 Flake; brown; L. 1". Trench I,—37'.

II. THE MOUND AT TANDO RAHIM KHAN (TA).

Painted Pottery. Pl. XXX, Figs. 6-9, 15-18, 26-28, 31-34, 40-42, and 47-48.

- Ta 41 Vase fragment; pale ware; chocolate on cream slip; a continuous line of festoon; each loop containing a dot in centre. Fig. 6.
- Ta 3 Vase fragment; pale ware; chocolate on cream slip which is applied inside and out; continuous line of festoon with two dots in each loop. Fig. 7.

- Ta 24 Vase fragment; greyish ware; continuous line of festoon with a dot in each loop and an additional wavy line running parallel; chocolate on cream slip. Fig. 8.
- Ta 21 Vase fragment; a row of solid elliptical figures in chocolate on cream slip; greyish ware. Fig. 9.
- Ta 10 Vase fragment; light red ware; a line of lozenges, interior filled in by parallel hatches; the sides of the lozenges are produced, each looking like a ladder; chocolate on light red slip. Fig. 15.
- Ta 23 Vase fragment; pale ware; a continuous line of festoon in chocolate on cream slip. Fig. 16.
- Ta 34 Vase fragment; light red ware; hachured leaf in chocolate on cream slip. Fig. 17.
- Ta 6 Vase fragment; light red ware; a continuous line of festoon in chocolate on cream slip. Fig. 18.
- Ta 9 Vase fragment; light red ware; reddish brown band at neck; below, a cross-shaped pattern, each arm consisting of three lines, and the arms shooting forth from a central circle; black on light red slip. Fig. 26.
- Ta 43 Vase fragment; light red ware; a motif like chevron in black on light red slip. Fig. 27.
- Ta 16 Vase fragment; light red ware; a line of chevrons in black, and below, a continuous line of lozenges, partly in black and partly in reddish brown; each lozenge is filled in solid except two crescent-like figures which are left blank in the interior; below, another line of chevrons in black; the cream slip has practically disappeared. Fig. 28.
- Ta 46 Vase fragment; light red ware; thick uprights in a band forming a railing pattern; chocolate on cream slip. Fig. 31.
- Ta 7 Vase fragment; light red ware; six uprights in a group in a band; black on cream slip. Fig. 32.
- Ta 11 Miniature vase fragment; ht. 1.65"; light red ware; decorated with cross-lines in chocolate; slip gone. Fig. 33.
- Ta 29 Vase fragment; light red ware; lozenge, partly filled in solid in reddish brown and partly filled in by parallel lines, in black, alternating with group of four slanting parallel lines also in black; cream slip. Fig. 34.
- Ta 2 Vase fragment; pale ware; group of parallel curves attached to group of uprights, at side; chocolate on cream slip. Fig. 40.
- Ta 37 Vase fragment; reddish ware; three slanting parallel lines at neck, probably part of a zigzag course; chocolate on cream slip. Fig. 41.
- Ta 15 Vase fragment; light red ware; traces of reddish brown band at neck; below, pattern akin to that on Ta 2. Fig. 42.
- Ta 25 Vase fragment; light red ware; solid triangles hanging from neck, with apex downwards; chocolate on cream slip. Fig. 47.
- Ta 12 Vase fragment; pale ware; cream slip inside and out; crescent partly filled in solid and partly filled in by hachures, alternating with a

column of sigmas laid on side in the shape of 'W'; chocolate on cream slip. Fig. 48. Cf. Pl. XXX, 25 from Chauro.

- Ta 49 Dish fragment; light red ware; in the middle, a circle with serrated exterior in black on red wash; dm. about 10".
- Ta 50 Ring-based pan fragment; light red ware; two concentric circles in the middle, in black. Pl. XXXVIII, 23.
- Ta 51 Pan fragment; light red ware; two concentric circles in the middle, in black.
- Ta 61 Vase with tapering bottom; fragmentary; neck missing; ht. about 13"; light red ware; chocolate bands on red wash.

Unpainted Pottery.

Very few examples of unpainted pottery were found, and it cannot be said definitely whether the specimens recovered were originally painted or not.

- Ta 52 Ring-based pan fragment; light red ware; ht. 2.1"; dm. at mouth 5.5".
- Ta 53 Ring-based vase fragment; light red ware; ht. 3.5". Pl. XXXVI, 21.

Chert Flakes.

The number of chert flakes found at Tando Rahim Khan was few, of which Ta 63 (L. 2.65") of grey colour is shown in Pl. XL, 16.

Ring-stone.

Ta 1; ht. 2.4"; dm. 6.5"; dm. of hole 2.1"; greyish lime stone; rough generally; the hole is made smooth probably by the revolving of a wooden post let into it. Pl. XIX, 37. It might have served the purpose of a door-socket. Cf. Mohenjo-daro specimens. There is a similar ring-stone from Torghundai in the Quetta Museum.

III. THE MOUNDS AT GORANDI.

Ghazishah-jo Thul: Gr (a).

- Gr (a) 8 Pottery tumbler with ring-base; cream ware; ht. 2.5"; dm. at mouth 1.6". Pl. XXXVII, 27.
- Gr (a) 14 Pottery tumbler with wide mouth and ring-base; light red ware; upper portion partly missing; ht. 2"; dm. at mouth 1.75". Pl. XXXVII, 28.
- Gr (a) 4 Pottery vase without rim; fragmentary; originally painted with lines around body; ht. 6.5"; dm. at mouth 3.8"; light red, thin ware; cup-like base. Pl. XXXV, 1.
- Gr (a) 5 Fragmentary pottery vase with cup-like base; buff ware; ht. 10.5"; dm. about 4".
- Gr (a) 9 Pottery vase, biconical in shape; rimless type; ht. 7"; dm. at mouth 3.5"; light red ware; perhaps originally painted. Pl. XXXV, 2.

- Gr (a) 6 Pottery vase with narrow mouth; rimless type; traces of paint; ht. about 17." Pl. XXXV, 6.
- Gr (a) 2 Half of a pottery dish with ring-base; bears traces of paint on red slip; ht. 2·8"; dm. 11·5"; pierced with four holes in the middle (probably drilled) for suspension; light red ware. Pl. XXXVII, 35, 37.
- Gr (a) 3 Cup-shaped big pottery vessel, probably used as a mortar; ht. 9·1"; dm. at mouth 10"; the lip has a slant on the inner side; light red thick ware; no traces of paint. Pl. XXXVII, 36. Cf. a similar vessel from Pandi Wahi, Pl. XXXV, 8.
- Gr (a) 13 Pottery pan; ht. 3·8"; dm. 12·5"; light red ware; no traces of paint. Pl. XXXVII, 34.
- Gr (a) 1 Big pottery vase having straight shoulder; rimless type; ht. 29". Pl. XXXV, 11.
- Gr (a) 10 *a-h*. 8 thin and sharp-edged chert flakes, each about 2" long, of which 10 *f* and 10 *h* are shewn in Pl. XL, 27 and 28.
- Gr (a) 11 Oblong chank piece; max. L. 8".
- Gr (a) 12 Unfinished cornelian bead; cylindrical; L. ·4", and dm. ·3". Pl. XXXIII, 52.

The Mound SW. of Ghazishahjo Thul: Gr (b).

- Gr (b) 4 Painted vase fragment; light red ware; thin; curves with flourish, in black on red slip. Pl. XXXII, 25. Cf. Pl. XXVII, 46 (Gs 255).
- Gr (b) 5 Painted vase fragment; light red ware; solid squares with incurved sides and conical leaf, in black on red slip. Pl. XXXII, 38.
- Gr (b) 8 Painted vase fragment; light red ware; fish-scale in black on red slip. Pl. XXXII, 33.

IV. THE MOUNDS AT ALI MURAD (AL).

Painted Pottery.

- Al 19 Wide mouth vase with bulged out body; ht. 3·5"; dm. at mouth 4"; slip and paint almost gone. Pl. XXXVI, 36.
- Al 11 Narrow mouth vase; ht. about 3"; dm. at mouth about 1"; horizontal bands in chocolate around body, applied probably on cream slip. Pl. XXXVI, 10.
- Al 8 Vase fragment; cross-lines at shoulder; ht. 2"; wide mouth; dm. about 4". Pl. XXIV, 4.
- Al 3 Vase fragment; ht. about 2"; a row of strokes at shoulder; traces of painted lines on the inner side. Pl. XXIV, 9.
- Al 34 Vase fragment; ht. 2·2"; five vertical lines alternating with horizontal strokes in a column. Pl. XXIV, 7.
- Al 35 Vase fragment; arch-shaped compartments with hatched interior. Pl. XXIV, 16.
- Al 31-32 Vase fragments; *Pipal* leaves in a band: below, a band of cross-lines. Pl. XXIV, 12.

- Al 33 Vase fragment; probably part of Al 31-32; a band of cross-lines; above, a cross-hatched triangle with two incurved sides, leaves and dots. Pl. XXIV, 13.
- Al 20 Vase fragment; interlacing squares with incurved sides, and flower and leaves in the various compartments. Pl. XXIV, 2.
- Al 67 Vase fragment; stylized tree and branch design. Pl. XXIV, 3.
- Al 50 Vase fragment; part of tree and branch design at neck. Pl. XXIV, 17.
- Al 49 Vase fragment; part of branch design. Pl. XXIV, 8.
- Al 45 Narrow mouth vase; ht. 2·3"; dm. at mouth 1·25". Pl. XXXVI, 9.

Unpainted Pottery.

- Al 83 Vase with flanged neck; ht. about 3'. Pl. XXXV, 14.
- Al 66 Vase; part missing; ht. 5·7". Pl. XXXVI, 42.
- Al 73 Vase with ring-base; part missing; traces of light red slip; ht. 3·52"; dm. at mouth 2·8". Pl. XXXVI, 35.
- Al 78 Cylindrical vase with projecting neck; hand-made body fitted to wheel-turned neck; ht. 2·9"; dm. at mouth 1·88". Pl. XXXVI, 5.
- Al 47 Cup with pedestal; ht. 2"; dm. at mouth 2·1". Bottom portion roughly made by hand and fitted to wheel-turned upper portion. Pl. XXXVI, 3.
- Al 72 Wide mouth vessel; ht. 1·65"; dm. at mouth 1·4". Pl. XXXVI, 4.
- Al 18 Vase; ht. 1·27"; dm. at mouth 1·25". Pl. XXXVI, 7b.
- Al 46 Vase; ht. 2"; dm. at mouth 1·5". Pl. XXXVI, 8.
- Al 71 Vase; ht. 1·4"; dm. at mouth 1·08". Bottom portion roughly made. Pl. XXXVI, 1.
- Al 87 Tumbler; ht. 2"; dm. at mouth 1·5". Pl. XXXVI, 2.
- Al 88 Saucer; dm. 2·9". Pl. XXXVI, 6.
- Al 40 Lid with pointed knob; dm. 1·3". Pl. XXXVI, 7a.
- Al 6 Handmade receptacle with two chambers; fragment; L. 2·25"; B. 1·7"; semi-burnt.
- Al 1 Dish fragment with incised crescents in the middle.
- Al 30 Neck of a perforated vase; L. 4·9". Pl. XXXIV, 24.
- Al 70 Bottom of a perforated vase; ht. 3". Pl. XXXIV, 29.
- Al 69 Dish-on-stand fragment with crescents in the middle; the crescents in each row are turned alternately to right and left. Pl. XXXI, 3.
- Al 22 Vase with conical base; fragment; light red ware; cream slip; ht. 2·5". Pl. XXXVI, 27.

Personal Ornaments, etc.

- Al 26 Copper bead; dm. ·3". Pl. XXXIII, 58.
- Al 74 Long-barrelled terracotta bead with traces of red wash; L. 2·2". Pl. XXXIII, 59.
- Al 75 Long-barrelled terracotta bead; L. 2·2". Pl. XXXIII, 60.
- Al 64 Steatite bead; discoid; dm. ·5". Pl. XXXIII, 57.
- Al 81 Agate bead; barrelled; bands of chocolate on white; L. 1·82". Pl. XXXIII, 65.

- Al 86 Cornelian bead; long-barrelled; L. 2·5". Pl. XXXIII, 67.
 Al 25 Cornelian bead; long-barrelled; fragment; L. 1·85". Pl. XXXIII, 66.
 Al 62 Cornelian bead; long-barrelled; fragment; L. 1·25". The white colour of the bead is probably due to baking of the stone. Pl. XXXIII, 68.
 Al 44 Chank bangle fragment; dm. 2·2".
 Al 39 Terracotta bangle fragment; dm. 2·8".
 Al 90 Flesh-rubber of coral; L. 5"; ht. 3". Pl. XIX, 39.

Animal Figurines.

- Al 56 Terracotta bull; eyes denoted by clay pellets; legs not distinguished; L. 2·3".
 Al 57 Terracotta pig; L. 2·4".

Miscellaneous Terracotta Objects.

- Al 4 Imitation of mother-of-pearl valve; L. 3·25"; edge pierced with a hole probably for suspension with a string. Pl. XXXIV, 16.
 Al 7 Triangular, semi-burnt model cake in which particles of husk are visible; L. 3·15"; thickness 1·1".
 Al 12 Round semi-burnt model cake in which particles of husk are visible; dm. 2·5"; thickness 1". Pl. XXXIV, 15. There are two depressions on the two sides of the object, probably due to its being held by two fingers when wet.
 Al 91 Drain-shaped semi-burnt object: inner side of base incised with interlacing circles; fragmentary; L. 12·25". The clay contains admixture of husk, like the 'cakes'. Pl. XXXI, 19.
 Al 59 Toy-chariot fragment; L. 2·6".
 Al 68 Toy-chariot wheel. Pl. XXXIV, 25.

Copper and Chert Implements.

- Al 82 Copper celt; L. 2·95"; B. at haft side 2"; B. at end 2·55"; maximum thickness ·3". Found along the inner side of the rampart wall, 7·9' above ground level. Pl. XLI, 29.
 Al 10 Copper awl; L. 3·15"; B. at haft side ·25", and at end ·15". Found along the inner side of the rampart wall, 1' below surface. Pl. XLI 28.
 Al 84 a, b, c Three chert flakes found inside a large pottery vase, Al 83, lying along the rampart wall at +7·9'. a. L. 2·85"; b. L. 2·55" (Pl. XL, 8); c. L. 1·95".
 Al 16a Chert flake; L. 1·75". Also Al 27: flake, L. 2·3" (Pl. XL, 9); Al 28: flake, L. 2·75" (Pl. XL, 10); Al 41: flake, L. 1·5"; Al 76: flake, L. 1·7"; Al 85: flake, L. ·95".

V. THE MOUND AT PANDI WAHI.¹

Pl. XXVIII.

- Pw 119a Painted pottery bowl with cylindrical body; slightly flanged above base; fragment; red ware; ht. 2·9"; a series of ladder-like motifs in black on natural ground (no slip). Trench 1,+8' to 10'. Fig. 1.
- Pw 82 Painted potsherd; part of a big vessel; red ware; twin hatched leaves placed vertically side by side so as to meet at a point; a string of eye-shaped loops placed vertically at intervals; decoration in black on red slip. Trench 1,+8' to 10'. Fig. 2.
- Pw 107 Painted potsherd; red ware; compartment with incurved side, filled in by hatches, with dotted flower above; black on red slip. Trench 1,+8' to 10'. Fig. 3.
- Pw 79 Part of painted pottery dish with splayed out neck; *Pipal* leaf pattern in black on red slip; the core of pottery turned grey due to imperfect firing. Trench 1,+8' to 10'. Fig. 4.
- Pw 32 Painted potsherd; red ware; 'fish-scale' in black on red slip. Pit 4,+1·9'. Fig. 5.
- Pw 27 Painted potsherd; buff ware; cross-hatched triangles in black alternating with solid triangles filled in brown within black borders. Trench 1,+2'. Fig. 6.
- Pw 287 Painted pottery bowl; fragment; greyish red ware; ht. 2"; cross-lines in chocolate on buff slip from shoulder to waist; below, the body has no slip; inside, traces of chocolate band at neck and a dot at centre. Trench 1,+5' to -3·2'. Fig. 7.
- Pw 16 Painted pottery bowl; fragment; light red ware; ht. 2·5"; group of uprights alternating with group of slanting wavy lines in black on buff slip; the slip has practically disappeared. Trench 1,+2'. Fig. 8; also Pl. XXXIX, 13.
- Pw 265, 271 Painted potsherds; red ware; ladder pattern in black on buff slip. Trench 1,+2'. Fig. 9. Cf. Pl. XXVII, 3 (Gs 276).
- Pw 92 Painted potsherd; part of a big vessel; *Pipal* branch in black on red slip; the core of pottery turned grey due to imperfect firing. Trench 1,+8' to 10'. Fig. 10.
- Pw 149 Painted potsherd; part of a cylindrical bowl like Pw 119a; ht. about 3"; cross-lines at shoulder; below, cross-hatched triangle alternating with solid triangle in chocolate; no slip. Trench 1,+3·2'. Fig. 11.
- Pw 236 Painted potsherd; part of a vase with straight rim; red ware; rectangular compartments at shoulder; parallel wavy strokes like 'sigmas' laid horizontally, alternating with some other motif missing; black on red slip. Trench 2,+12' to 19'. Fig. 12.
- Pw 259 Painted potsherd; part of a vase with straight rim; red ware; brown bands and a simple festoon of wavy line at shoulder in black; no slip. Trench 1,+5' to -3·2'. Fig. 13.

¹ The depths of objects are recorded, taking the base of the mound, 21' below the top, as the ground level.

- Pw 263 Painted potsherd; red ware; part of a vase with straight rim; traces of brown band at shoulder between black lines; below, twin solid triangles meeting at a point alternating with group of uprights; traces of another brown band below; buff slip. Trench 1,+5' to —3·2'. Fig. 14.
- Pw 28 Painted potsherd; part of a vase with short neck and straight rim; red ware with buff wash; a continuous line of cross-hatched lozenges in black between two brown bands; traces of black at neck on the inner side. Trench 1,+2'. Fig. 15; also Pl. XXXIX, 6.
- Pw 87 Painted potsherd; red ware; part of a big vase; balls in black on red slip; the balls arranged so as to form triangles. Trench 1,+8' to 10'. Fig. 16.
- Pw 273 Painted potsherd; red ware; no slip; traces of black band inside at neck; meander pattern in black. Trench 1,+5' to —3·2'. Fig. 17.
- Pw 151, 157 Painted potsherds; parts of a cylindrical bowl; ht. about 3·5"; steps of multiple parallel lines enclosing a quadrangle, alternating with group of uprights; greyish red ware with buff wash; decoration in black; traces of black band at neck inside; colours nearly faded. Trench 1,+3·2'. Fig. 18.
- Pw 154 Painted potsherd; pale ware with buff slip; original colours much changed in tone; three solid ovolos or leaves laid horizontally in a column alternating with group of uprights and probably twin solid triangles meeting at a point. Trench 1,+3·2'. Fig. 19.
- Pw 272 Painted potsherd; part of a bowl; greyish red ware; ht. about 1·8"; decoration in black, and brown of which there are traces; a continuous line of eye-shaped compartments with uprights springing from above and below; traces of black band inside as usual. Trench 1,+5' to —3·2'. Fig. 20.
- Pw 148 Painted potsherd; red ware with buff slip; a continuous line of solid lozenges in black between two brown bands; a good example of the three-colour scheme. Trench 1,+3·2'. Fig. 21.
- Pw 165 Painted potsherd; part of a bowl; buff ware and slip; original colours much faded; traces of black and brown bands; group of uprights joined to parallel arcs; design not clear. Trench 1,+3·2'. Fig. 22.
- Pw 290 Painted cup with flat base; fragmentary; ht. 1·8"; red ware with buff slip; core of pottery grey; parallel slanting lines in black in alternate position so as to form triangles. Trench 1,+5' to —3·2'. Fig. 23; also Pl. XXXIX, 11.
- Pw 34 Painted potsherd; red ware; bull in black on bright red slip; body of animal almost filled in solid. Pit 4,+1·9'. Fig. 24.
- Pw 35 Painted potsherd; red ware; part of the bull motif; design in black on red slip; body of bull partly filled in by hatches and partly filled in solid. Pit 4,+1·9'. Fig. 25.

- Pw 18 Painted potsherd; red ware with buff slip; probably a flower like the Indian *kadamba*¹ in black. Trench 1,+2'. Fig. 26.
- Pw 26 Painted potsherd; part of a thick-walled vase with straight rim; red ware with buff slip; brown band at neck; below, a continuous line of solid lozenges in black; traces of black band inside as usual. This pottery is undistinguishable from 'Amri' ware. Trench 1,+2'. Fig. 27; also Pl. XXXIX, 7.
- Pw 262 Painted potsherd; thick ware; grey due to imperfect firing; buff slip; original colours much faded; a continuous line of hatched lozenges in black. Trench 1,+5' to -3.2'. Fig. 28.
- Pw 285 Painted pan with incurved rim and ring pedestal;² ht. 2.5"; fragment; red ware and wash; interior decorated with solid triangles projecting from centre; in between the triangles, a line of thick strokes; decoration in chocolate. Trench 1,+5' to -3.2'. Fig. 29.
- Pw 112 Painted potsherd; buff ware and slip; bull motif in black; body of animal partly filled in by hatches and partly filled in solid. Trench 1,+8' to 10'. Fig. 30.
- Pw 25 Painted potsherd; part of a bowl; red ware with buff wash; semi-circles filled in by hatches placed alternately in two rows; decoration in black. Trench 1,+2'. Fig. 31.
- Pw 254 Painted potsherd; flat dish fragment; red ware and wash; pottery not well fired; hooks along a circular band in chocolate or black. Trench 1,+5' to -3.2'. Fig. 32.
- Pw 155 Painted potsherd; buff ware and slip; hatched ovolos in black placed alternately along two sides of a brown band. Trench 1,+3.2'. Fig. 33.
- Pw 264 Painted potsherd; red ware with buff slip; detached cross-hatched rectangles in a band in black; traces of a brown band above. Trench 1,+5' to -3.2'. Fig. 34.
- Pw 279 Painted potsherd; part of a bowl; buff ware and slip; cross-hatched rectangles alternating with group of uprights in black; traces of black band inside as usual. Trench 1,+5' to -3.2'. Fig. 35.
- Pw 270 Painted potsherd; red ware with buff slip almost gone; a continuous band of chevron in black. Trench 1,+5' to -3.2'. Fig. 36.
- Pw 258 Painted potsherd; flat dish fragment; red ware; a line of hooks along a circular band, in black. Trench 1,+5' to -3.2'. Fig. 37.
- Pw 90 Painted potsherd; flat dish fragment; buff ware; no slip; broad meander pattern in black with a wavy line at the edge. Trench 1,+8' to 10'. Fig. 38.
- Pw 274 Painted potsherd; part of a vase with straight rim; buff ware and slip; brown band at neck; below, cross-hatched rectangles placed at intervals in a row; below, ladder motif alternating with three

¹ For a similar motif see *Ur Excavations*, Vol. I, Pl. XVI, 1621.

² Pl. XXXIX, 12.

columns of solid triangles; a second brown band below; decoration in black. This is a fine example of the three-colour scheme.

Trench 1,+5' to -3.2'. Fig. 39; also Pl. XXXIX, 8.

Pw 294 Painted potsherd; dish with ring-base; red ware; comblike motif with an upraised horn at each side; decoration in black; no slip.

Trench 1,+5' to -3.2'. Fig. 40.

Pw 191 Painted dish with flat base; ht. 1.4"; red ware; in the centre a dot, and at the edge, group of parallel arcs at intervals; decoration in black; no slip. Trench 2,+12' to 15'. Fig. 41.

Pw 289 Painted bowl with rim receding inward, and flat base; ht. 1.9"; red ware, grey on the inner side; buff slip outside; a row of sigmas in black between two brown bands. Trench 1,+5' to -3.2'. Fig. 42.

Pw 133 Painted potsherd; flat dish fragment; red ware; double-line hooks in two bands in black around the centre of the dish; no slip. Trench 1,+3.2'. Fig. 43.

Pw 115 Painted potsherd; flat dish fragment; buff ware; probably had a thin buff wash; double-line hooks in one band and a wavy line in another around the centre of the dish; decoration in black. Trench 1,+8' to 10'. Fig. 44.

Pw 277 Painted potsherd; part of a straight-rim bowl; buff ware and slip; traces of a brown band at neck; below, eye-shaped loops in a continuous line with short uprights springing from the arcs above and below; traces of a black band inside as usual. Trench 1,+5' to -3.2'. Fig. 45; also Pl. XXXIX, 10.

Pw 276 Painted bowl fragment; ht. about 3.3"; buff ware and slip; traces of brown band at neck; below, 'sigmas' in a continuous line, in black or chocolate; traces of black band inside as usual. Trench 1,+5' to -3.2'. Fig. 46; also Pl. XXXIX, 9.

Pw 278 Painted bowl fragment; ht. about 3"; buff ware and slip; 'sigmas' in a continuous line in black. Trench 1,+5' to -3.2'. Fig. 47.

Pl. XXIX.

Pw 282 Painted potsherd; part of a big vessel; buff ware and wash; circular floral pattern with dots in centre and petals along circumference; also solid triangles and crescentic figures filled in by hatches; motifs repeated in different compartments; decoration in black. Trench 1,+5' to -3.2'. Fig. 36.

Pw 187 Painted potsherd; part of a big vessel; red ware; chequer pattern within squares; also solid triangles; decoration in black on red slip. Pit 3,—6' to -4.1'. Fig. 37.

Pw 36 Base of a painted dish-on-stand; red ware; dm. about 11.5"; a continuous line of solid triangles with incurved sides along the border; between sides of triangles are semi-circular compartments, each containing a solid crescentic figure; concentric circles at the middle; decoration in black on red slip. Pit 3,—5.3'. Fig. 38.

Pl. XXXI.

- Pw 42 Terracotta tablet with bosses in relief; clay mixed with chopped straw; fragment; about 15" long by 6·4" broad, and 1·3" thick; purpose unknown. Trench 1,+8' to 10'. Fig. 18.

Pl. XXXIII.

- Pw 280 Terracotta bead with incised decoration; L. ·9". Trench 1,+·5' to —3·2'. Fig. 35.
 Pw 281 Terracotta bead with incised decoration; L. ·85". Trench 1,+·5' to —3·2'. Fig. 36.
 Pw 226 Steatite bead; discoid; dm. ·35". Trench 1,+8' to 10'. Fig. 37.
 Pw 219 Stone with natural white bands; probably an unfinished bead; L. ·9". Trench 1,+8' to 10'. Fig. 41.
 Pw 119 Unfinished bead of white stone; L. 1·5". Trench 1,+8' to 10'. Fig. 42.
 Pw 215 Lapis lazuli bead; cylindrical; L. ·7"; dm. at end ·35". Pit 3, —6' to —4·1'. Fig. 43.

Pl. XXXIV.

- Pw 58 Terracotta toy conduit with painted cross-lines; L. 3·25"; ht. 1·4"; B. 1·55". Trench 1,+8' to 10'. Fig. 18.
 Pw 169 Terracotta model cake; triangular; max. L. 2·7"; thickness 1". Pit 3,—6' to —4·1'. Fig. 26.
 Pw 43 Part of a pottery dish-on-stand with incised strokes as decoration. Trench 1,+8' to 10'. Fig. 27.
 Pw 45 Part of a pottery dish with flat base; ht. about 3"; impression of matting on base; coarse ware. Trench 1,+8' to 10'. Fig. 28.

Pl. XXXV (Pit 3,—5·3').

- Pw 40 Pottery vase of elliptical shape with slight indication of neck. Ht. about 19·5". Fig. 7.
 Pw 41 Pottery vase of elliptical shape like Fig. 7. Ht. about 22". Fig. 12.
 Pw 41a Cup-shaped pottery mortar; thick ware. Ht. about 15". Fig. 8.
 Cf. a similar vessel from Gorandi (a), Pl. XXXVII, 36.

Pl. XXXVII.

- Pw 59 Miniature pottery tumbler; ht. 2·3"; dm. at mouth 2". Trench 1, +8' to 10'. Fig. 13.
 Pw 39 Miniature pot with splayed out neck; traces of painted bands; ht. 2·4". Pit 3,—5·3'. Fig. 14.
 Pw 184 Miniature pottery tumbler; hand-made; ht. 2·2". Pit. 3,—6' to —4·1'. Fig. 15.
 Pw 21 Miniature pottery 'fruit-dish' with painted bands and a dot in the centre of the dish; ht. 2·1". Trench 1,+1'. Fig. 16.
 Pw 193 Pot with straight lip and bulged out body; cup-shaped bottom; rim pierced by three holes for suspension; ht. 2·2"; dm. at mouth 1·8". Trench 2,+12' to 15'. Fig. 17.

- Pw 195 Miniature pottery bowl with ring-base; traces of paint discernible; ht. 1·9"; dm. at mouth 2·4". Trench 2, +12' to 15'. Fig. 23.
- Pw 194 Pot like Pw 193, having three holes at rim for suspension; ht. 2·9" dm. at mouth 1·85". Trench 2, +12' to 15'. Fig. 24.
- Pw 182 Pot with splayed out neck; traces of original paint; ht. 3·9"; dm. at mouth 2·65". Pit 3, —6' to —4·1'. Fig. 25.
- Pw 183 Pot with splayed out neck; ht. 3·9"; dm. at mouth 2·65". Pit 3, —6' to —4·1'. Fig. 31.

Pl. XL.

- Pw 216 Chert flake, thin, having sharp cutting edge; purple colour; L. 1·65"; B. ·3". Trench 1, +2·5'. Fig. 4.
- Pw 1 Chert arrow-head; leaf-shaped; L. 1·65"; max. B. ·55"; rugged surface owing to flaking. From surface. Fig. 6.
- Pw 198 Chert flake; L. 3·9"; B. ·6". Trench 1, +·5' to —2·2'. Fig. 7.
- Pw 196 Chert flake; L. 2"; B. ·55". Pit 3, —6' to —4·1'. Fig. 5.

CHAPTER VII.—IN THE HILLS OF SEHWAN AND KOHISTAN.

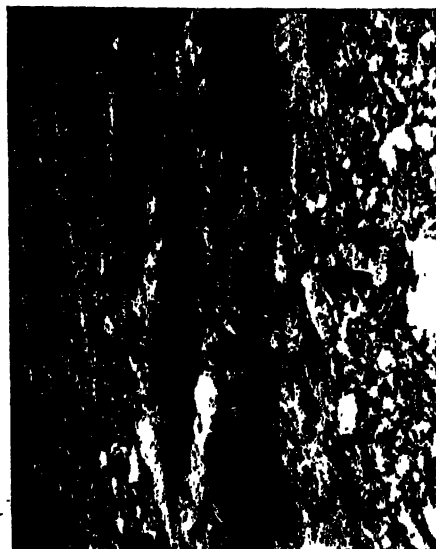
From Ali Murad to Jhangar.—A study of the detailed maps of Western Sind, and the information we could gather from various sources regarding the topography of the hill tracts of Sehwan and Kohistan, went to suggest that the valley (*kachha*) between these hills, across which there lies a track from the Manchhar lake to Karachi, was a promising field for exploration. When touring in the Johi Taluka we were prepared for a trek of about one hundred and fifty miles, and necessary arrangements for this journey were completed at Ali Murad. The end of January found us on the trail of ancient sites, in the vicinity of Jhangar, with our train of labourers, and dromedary and baggage camels. After replenishing our store of provisions and arranging for a 'camel-post' for regular delivery of the *Dak*, we resumed our march towards the south. Jhangar being the only post office of which we could avail ourselves for another sixty miles or so, all these preliminaries had to be settled there before our departure.

The site of Damb Buthi.—In connexion with Jhangar mention has been already made (above p. 69) of a channel of water called the Pirari Wahi, issuing out of a hot-spring at the foot of the Bado hills. Near this spring is a small hill called Damb Buthi which is about 84' high (Pl. IX, b). The ruins of a prehistoric settlement are scattered over its slopes and also at its base, as at Naig. The site is, however, much bigger in extent. Detached blocks of stones, which must have been once used for construction, as well as 'black-on-red' pottery, were seen here almost at every step. At different levels of the hill, courses of stones, which no doubt served as the foundations of buildings, could also be traced. Such lines of stones re-appear to the southwest of the hill on an undulating rocky ledge, but between the two areas there were neither stone foundations nor pottery débris. This ledge was littered with fragments of thin-

JHANGAR, DAMB BUTHI AND BANDHNI



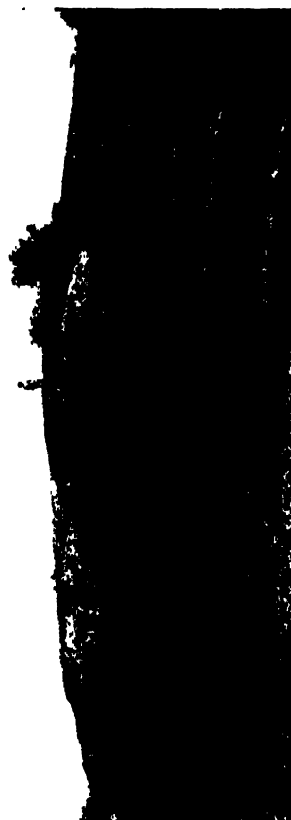
(b) THE HILL KNOWN AS DAMB BUTHI.



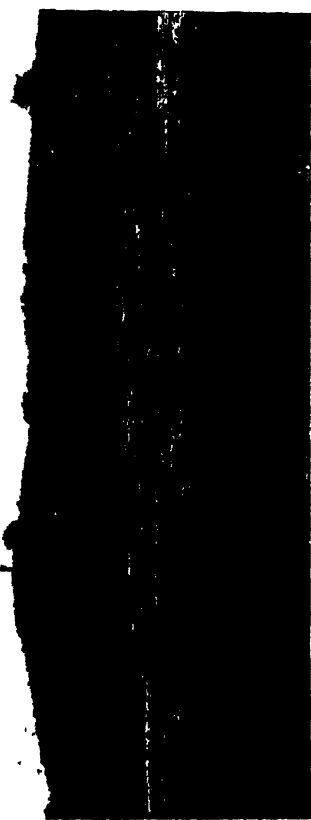
(c) A PARTIAL VIEW OF BURIAL CHAMBERS AT DAMB BUTHI.



(d) THE HOT-SPRING AT DAMB BUTHI.



(a) THE MOUNDS NEAR JHANGAR.



(c) THE MAIN MOUND AT BANDHNI.

walled pottery of buff colour, decorated with geometric patterns, which bore close resemblance to 'the Amri ware.' Strangely enough, not a single specimen of the black-on-red Indus pottery could be found amongst these remains, although such specimens were abundant close by at the base of the hill as well as on its top. This exclusive occurrence of the Amri ware at one spot and the Indus ware at another was an interesting feature of the site.

Hot-spring at Damb Buthi.—Damb Buthi and the neighbouring hills are bleak and barren in which the only source of attraction is the hot-spring (Pl. IX, *d*). People affirm that its water was more plentiful in the past. Even now its channels irrigate all the land between this place and Pirari towards which they are made to flow. Masson¹ mentions a brook called 'Garm-ab' i.e., 'hot water,' about 6 miles from Kot Baluch near Jhangar, which he had to cross on his march towards Karachi. The water issued out of a spring, and north of the spring he saw an area full of potsherds. Probably the brook was one of the numerous channels emanating from the Damb Buthi spring, but it is not quite clear whether he is referring to the ruins at Damb Buthi itself or to those near Jhangar. The distance given by Masson from Kot Baluch does not carry us as far as Damb Buthi, and besides Damb Buthi would be a little away from the usual caravan track.

A Prehistoric Burial Place.—Some excavations were carried on in the area to the southwest of the hill (Pl. XLV), and five of the chambers, the outlines of whose walls were visible on the surface, were opened (Pl. IX, *c*). Each of them yielded specimens of pottery of the Amri type, but none of the black-on-red ware. In one of the chambers we found a group of pottery articles together with human skeletal remains.² These were resting in a packing of yellow earth mixed with pottery débris. The bones were apparently in a disturbed condition, and in a very much calcinated state. Entire skeletons could not be recovered, nor was it possible to study their orientation. Some bits of bones had even found their way into the vessels, probably by accident. Some of the vessels were intact, but there were many more of which only detached fragments could be recovered. Those found intact comprised pans, bowls and tumblers with ring-base, and flat-base cylindrical vases. Along with this pottery were lying a few chert flakes (e.g., Dm 126*a* and 126*b*, L. 3" and 2.3" respectively: Pl. XXV, 39-40) and cores, two mussel valves, terracotta and shell bangles, and a small stone bead. The two mussel valves (Dm 119) were placed one upon another, so as to close up their interior (Pl. XXV, 38), the lower one of these containing a quantity of red ochre. It is natural that the people should deposit with their dead some of the objects of daily household use, and red ochre appears to have been an article which the women probably used for their toilet. A mussel valve containing red ochre was discovered also in the Dk Section of Mohenjo-daro, in the clearance of a chamber belonging to a dwelling house. Pigment shells of this description are reported again from the prehistoric cemeteries of Al-Ubaid

¹ *Journey*, Vol. II, pp. 147-149.

² See Dr. Guha's note, below p. 158.

and Kish.¹ Human bones together with another batch of similar pottery objects were also unearthed in an adjoining chamber, and it looked as if there were many more chambers like these in the area we were exploring. Indeed, the outlines of quite a number of rooms were visible here and there on the surface. Whether all of them are burial chambers it is difficult to say without making any further excavation. The discovery of the skeletal remains, pottery and other objects was made within a foot from the surface of the chambers. The shallowness of the chambers that were opened is remarkable. No doubt the burials had originally a thick incrustation of earth, but in course of time this was washed away. Each burial had a rectangular enclosure made of rough hewn blocks of stone. Within it the body together with its associated objects was laid on the natural rocky surface. No entrance to any of the chambers could be traced, and it is doubtful if any ever existed. The walls appear to have been originally of the present height, since their tops are practically level and there is no stone débris lying about or inside the chambers.

Method of burial.—Rectangular stone enclosures for the burial of the dead like those noticed at Damb Buthi occur also at Nal. Mr. Hargreaves who excavated Nal writes: "The principal structural remains disclosed by this clearance are the stone walls of thirteen rooms and courtyards. The word 'room' is used for convenience for it is by no means certain they are rooms in the ordinary sense of that word.....The walls are at right angles and roughly oriented to the cardinal points.....None are of any great height, most being of two courses only.....In all probability the stone walls were merely foundations, for on the top of several two courses of sun-dried bricks were recovered seemingly *in situ*. Since the tops of the stone walls are generally level, and as no stone débris was met with in clearance, it appears as if the walls were recovered to their original full height and any superstructures must have been of mud brick or some light material which had entirely disappeared. No obvious entrances to the rooms can be traced.....Most of the rooms had earth floors." Two rooms, says the excavator, "had pavements of small water-worn boulders," while another "had a particularly solid flooring resembling walls...and consisting of three courses of stones carefully laid over a foundation of gravel."² From this account the similarity of the burial chambers of Nal to those of Damb Buthi will be made sufficiently clear. As we halted at this place only for a few hours, a detailed study of the cemetery, such as that made by Mr. Hargreaves at Nal, was not possible. But it was observed in the two chambers that the skeletons were most probably not interred in full. As stated above, no complete skeleton could be recovered, and whatever bones turned up (*see* Dr. Guha's note, in Appendix A) in the course of the clearance were lying pell-mell over the floor. No trace of cremation was detectable, and in all probability inhumation was practised at Damb Buthi. But the burial was probably of the class known to archæologists as the 'Fractional Burial,' of which evidence has been discovered

¹ Hall and Woolley, *Ur Excavations*, Vol. I, pp. 212, to 438: Mackay, *Report on the Excavation of the 'A' Cemetery, Kish*, Part I, pp. 14-15.

² *Mem. A. S. I.*, No. 35, pp. 20-21.

at Nal,¹ and at Musyan² in Persia. According to Sir John Marshall this form of burial was practised also at Mohenjo-daro.³

The Funerary pottery.—Most of the pots recovered from the burial chambers are wheel-turned, but some appear to have been also hand-made. The clay is not well fired, and this pottery lacks the finish characteristic of a household ware. The hand-made pottery specially shows crude execution. The specimens represent a thin fabric of buff colour, which in the majority of cases are painted, but there are a few examples of plain pottery as well. In some cases, however, it is possible that decorated portions have competely flaked off, so that it is difficult to judge if they bore originally any painted decoration at all. The designs are executed in black or in chocolate on cream or buff slip, and usually reddish brown bands are also introduced. That some of the colours applied were of an evanescent character could be tested by dipping the specimens in water. The decoration, which shows a wide range of patterns (Pl. XXV, 1-25), is entirely of a geometrical character. They include chequers, solid lozenges, sigmas, chevron, eye-shaped loops, festoon, solid triangles and a cross-like motif. Special interest attaches to the occurrence of the stepped pattern and enclosing rectangles which are characteristic of Nal (Pl. XXV, 1-2). As regards the shape of the vessels we should also note that the pans, cups or bowls with ring-base as well as the cylindrical flat-based vessels discovered at Damb Buthi have their close parallels at Nal. In these circumstances, and also in view of the particular mode of the disposal of the dead in stone chambers, it may be concluded that the site of Damb Buthi is representative of a culture akin to that of Nal.

Vessels recovered more or less intact are described below according to the respective types they represent.

a. Pans with ring-base.

- Dm 29 Light red ware; lacks finish, although partly turned on wheel; ht. 2.4"; dm. at mouth 6.65". Pl. XXV, 26.
- Dm 30 Light red ware; lacks finish, although partly turned on wheel; not well fired; ht. 2.5"; dm. at mouth 7.4". Pl. XXV, 28.
- Dm 23 Light red ware; traces of black paint at rim inside and out; no wheel mark; lacks finish; ht. 1.6"; dm. at mouth 4.5". Pl. XXV, 27.

b. Bowls with ring-base.

- Dm 22 Painted with a chocolate band at rim both inside and out; a band of cross-lines in chocolate applied probably on a thin red wash; wheel-turned; ht. 2.15"; dm. at mouth 3.1". Pl. XXV, 31.
- Dm 115 Paint and decoration as on Dm 22; ht. 1.7"; dm. at mouth 2.65". Pl. XXV, 35.

These bowls are carelessly moulded and not well fired.

¹ *Mem. A. S. I.*, No. 35, p. 21.

² *Mem. del. en Perse*, tome VIII, p. 76.

³ *Mohenjo-daro*, Vol. I, p. 82.

c. Tumblers with ring-base.

- Dm 25 Traces of painted chocolate bands at neck; ht. 4·2"; dm. at mouth 3·1", and above ring-base 3·65". Pl. XXV, 32.
- Dm 118 Traces of painted chocolate bands on body; ht. 2·3"; dm. at mouth 2·2", and above ring-base 2·3". Pl. XXV, 42.
- Dm 121 Ht. 3·3"; dm. at mouth 2·65", and above ring-base 2·5"; not well fired. Pl. XXV, 43.

d. Flat-based cylindrical vases.

- Dm 26 No wheel-mark visible; ht. 2"; dm. at mouth 1·7", and at base 1·75". Pl. XXV, 29.
- Dm 116 Ht. 1·3"; dm. at mouth 1·9", and at base 1·95". Pl. XXV, 36.
- Dm 117 Ht. 1·4"; dm. at mouth 2", and at base 2·15". Pl. XXV, 37.

These are for the most part hand-made, and lacking finish; the wheel-marks are hardly traceable and the pottery is not well fired.

e. Vases of other types.

- Dm 24 Narrow-mouthed, cylindrical vase with projecting shoulder; hand-made; roughly executed; semi-fired; traces of chocolate dots at neck; ht. 2·1"; dm. at mouth 1·8", at shoulder 3·15", and at base 2·75". Pl. XXV, 33.
- Dm 28 Vase with ring-base; ht. 2·3"; dm. at mouth 1·6", and above base 2·75". Pl. XXV, 30.
- Dm 114 Vase with ring-base; ht. 2·4"; dm. at mouth 2·1", and above base 2·9". Pl. XXV, 41.

Dm 28 and 114 are not well fired.

Besides entire pots a large number of painted potsherds were collected of which a few typical pieces are described below (Pl. XXV, 1-25, 34).

- Dm 89 Reddish brown band at neck; below, a continuous line of semi-circular loops making a festoon; body decorated with ladder-shaped motif alternating with vertically placed conical leaf within eye-shaped compartment and solid leaves laid one above another in a column; pink ware; decoration in chocolate on buff slip; colours not fast; ht. 6"; dm. at mouth 4·6". Fig. 34; also Pl. XXXVIII, 16.
- Dm 95 Stepped pattern in chocolate on buff slip; light red ware. Fig. 1.
- Dm 50 Chequers in chocolate in the centre of enclosing rectangles; light red slip and ware. Fig. 2.
- Dm 102 Chequers in chocolate on buff slip; light red ware. Fig. 3.
- Dm 62 Pale ware; a row of sigmas and a parallel row of solid lozenges in black on light red slip. Fig. 4.
- Dm 78 Sigmas in two parallel bands, in black on buff slip; pale ware. Fig. 5.
- Dm 105 Light red ware; detached eye-motifs placed alternately in parallel rows in a band; chocolate on buff slip; also traces of reddish brown. Fig. 6.

- Dm 97 Light red ware; a continuous line of semi-circular loops making a festoon ornament, each loop having a thick dot in the middle; chocolate on buff slip. Fig 7.
- Dm 108 A line of solid lozenges in chocolate on buff slip; pale ware. Fig. 8.
- Dm 107 A band in chocolate edged with slanting strokes, on buff slip; light red ware. Fig 13.
- Dm 100 Enclosing rectangles in chocolate on buff slip; pale ware. Fig. 9.
- Dm 99 Three parallel lines meeting three others, forming a triangular motif; chocolate on light red slip; pale ware. Fig. 14.
- Dm 98 Greyish ware; a series of uprights in compartment; chocolate on buff slip. Fig 10.
- Dm 46 Light red ware; dish fragment; chevron (cf. Pl. XXIV, 33) in chocolate on red slip. Fig 11.
- Dm 112 Light red ware; semi-circular loops in a continuous line forming a festoon; decoration in chocolate on light red slip. Fig. 12.
- Dm 106 Buff ware; solid triangle in compartment, in chocolate on buff slip. Fig. 16.
- Dm 96 Light red ware; compartment with solid ball at corner and parallel curves below; chocolate on buff slip. Fig. 17.
- Dm 111 Pale grey ware; cross pattern in black on buff slip. Fig. 18.
- Dm 101 Pale ware; hatched leaf; chocolate on buff slip which is applied also on the interior. Fig. 19.
- Dm 109 Light red ware; two parallel lines meeting two others at an angle; black on buff slip. Fig. 20.
- Dm 93 Light red ware; reddish brown band at neck; below, a continuous line of semi-circular loops forming a festoon with a dot in each; below again, two parallel zigzag lines; traces of a second reddish brown band; chocolate on buff slip. Fig. 15; also Pl. XXXVIII, 15.
- Dm 104 Greyish ware; leaf with hatched interior in chocolate on buff ground. Fig. 21.
- Dm 110 Light red ware; reddish brown band at neck; below, chocolate bands on red wash. Fig. 22.
- Dm 94 Pale ware; a line of strokes, or sigmas, in chocolate on buff slip. Fig. 23.
- Dm 92 Thick ware; pale red; leaf and solid ball in two compartments; chocolate on buff slip. Fig. 24.
- Dm 103 Light red ware; chequers in black in a compartment with incurved sides; traces of red slip. Fig. 25.

Finds from the foot of the Hill.—A few trial pits were also sunk at the foot of the hill on its eastern side, and the foundations of a number of rooms of stone masonry were thus exposed. In these pits not a single specimen of the thin bichrome pottery was brought to light. The small collection that was made comprised samples of the black-on-red pottery and also articles with which it is usually associated at all Indus sites. Some selected examples are noticed below :

- Dm 7. Painted vase fragment; light red ware having grey core due to defective firing; conical leaf with parallel hatches and stylized flower with central dot, in compartments; black on red slip. Pl. XXIV, 5.
- Dm 8. Painted vase fragment; ware as Dm 7; conical leaf as on Dm 7 with a row of slanting strokes along one edge; black on red slip. Pl. XXIV, 6.
- Dm 11. Neck of painted vase; red wash inside; branches in black on red slip. Pl. XXIV, 1.
- Dm 12. Painted vase fragment; ht. about 3·5"; conical hatched leaves in compartments in black on red slip. Pl. XXIV, 10.
- Dm 14. Painted vase fragment; a group of six uprights alternating with a column of horizontal strokes; black on red slip. Pl. XXIV, 11.
- Dm 9. Perforated pottery vase fragment.
- Dm 15. Terracotta ball; dm. 1·4"; circular dots in chocolate on buff slip. Pl. XXXIV, 5.
- Dm 17. Miniature vase with two black bands at shoulder; ht. 1·52"; dm. at mouth 1·3". Pl. XXXVI, 11.
- Dm 10. Terracotta 'model cake.'
- Dm 20-21. Terracotta bangle fragments.
- Dm 2. Chank shell bangle; dm. 1·55".
- Dm 3. Chank shell handle; L. 1".
- Dm 1a, b, c, d, e. Rectangular shell beads, each about ·8" L., ·55" B. and ·25" thick, and pierced with two holes and bearing incised circles with central dot.

Bandhni.—Marching eight miles from our camp at Pirari near Jhangar, we arrived at Bandhni on the 28th of January. A shepherd had told us of certain ancient remains near Bandhni village, and guided by him we came to a mound about 29' high (Pl. IX, e). Chert flakes and prehistoric pottery were found on its surface in abundance amidst foundation rubbles. The mound stretches from north to south, covering an area of some 400 yards by 230 yards. It reaches its maximum height on the north, and assumes a flat appearance towards the south, as it gradually slopes down terminating on a natural rocky ledge. To the north of the mound, at a distance of about 450 yards, is a smaller accumulation hardly more than 10' in height. This as well as the northern section of the larger one bears a number of Muhammadan graves. We had therefore considerable difficulty in inducing the local Baluch Zamindar, Muhammad Khan, to agree to our carrying out the usual trial operations at the site. Some of his own men had to be engaged as labourers, and when he was convinced that we were not likely to defile the resting place of their deceased folk, we could carry out a little digging at the southern extremity of the main mound. The operations were confined to an area of 40' by 35', in which a group of small chambers lined with stones were cleared. In none of these, however, we could get down to a depth of more than 2', as the natural rock upon which the houses once stood, was reached at this level. The lines of stones, which looked like walls, were, of course, nothing but the foundations of the chambers.

Painted pottery.—Painted pottery of the thin bichrome class (*e.g.*, Bn 15 and 52) was recovered along with chert flakes (*e.g.*, Bn 54, L. 2·3": Pl. XL, 33; and Bn 55, L. 3·2": Pl. XL, 32) from the various chambers. No evidence of the black-on-red pottery and connected objects was, however, found. Some of the potsherds have undergone so much weathering that it is difficult to recognize the original character of the paints used and the decoration they bore. A few typical specimens of vase fragments are described below:

- Bn 30 Pale ware; reddish brown band at neck; below, solid triangles meeting at a point alternating with uprights, in chocolate on buff slip.
- Bn 13 A row of continuous lozenges in chocolate on buff slip which is applied to the interior as well.
- Bn 52 Pale ware; reddish brown band at neck; below, probably solid balls in loops, in chocolate on buff slip. Pl. XXIX, 3.
- Bn 34 Light red ware; a column of horizontal strokes, in chocolate on buff slip. Pl. XXIX, 5.
- Bn 26 Light red ware; traces of reddish brown band at neck; below, eye-shaped motif with a row of uprights above, in chocolate; buff slip. Pl. XXIX, 6.
- Bn 15 Light red ware; traces of reddish brown band at neck; below, a column of horizontally placed solid leaves alternating with uprights; chocolate on buff slip. Pl. XXIX, 12.
- Bn 38 Pale ware; a festoon with a dot in each loop; chocolate on buff slip. Pl. XXIX, 13.
- Bn 42 Light red ware; traces of reddish brown band at neck; below, solid triangle with slanting lines parallel to its sides; chocolate on buff slip. Pl. XXIX, 15.
- Bn 14 Pale ware; alternate solid ellipses in two parallel rows in chocolate on buff slip. Pl. XXIX, 16.
- Bn 53 Light red ware; a continuous line of solid lozenges at neck in black on red slip which is applied also to the interior; inside, an upright with hooks on both sides, probably representing a tree, in black. Pl. XXIX, 19.
- Bn 46 Pale ware; traces of reddish brown band; conical branch with hatched interior in chocolate on buff slip. Pl. XXIX, 20.
- Bn 50 Pale ware; a continuous row of lozenges with hatched interior, in chocolate on buff slip. Pl. XXIX, 21.
- Bn 5 Buff ware; alternate semi-circular loops with a dot in each, in two parallel rows;¹ black on buff slip. Pl. XXIX, 26.
- Bn 33 Light red ware; two continuous wavy lines forming loops with a dot in each; below, a third wavy line; chocolate on buff slip. Pl. XXIX, 27.

¹ Cf. a Ramrud (Sistan) example in *Innermost Asia*, Vol. III, Pl. CXIII, R. R. XVII, 05.

Bn 48 Pale ware; solid triangles and dots in compartments, in chocolate on buff slip. Pl. XXIX, 4.

The Bandhni Nāi.—About a mile to the south-east of the main mound of Bandhni is a stream called the Bandhni Nāi (Pl. XII, *d*). It flows below the Karachi road which at this point passes over a ridge of the Laki Range. The place offered a rather picturesque scenery. The chief attraction was the sparkling rivulet winding its course through a bed of pebbles, its eastern bank abutting on the high ridge-wall. Being spring-fed the Nāi keeps up a perennial flow, and is a source of great relief to the travellers passing from Jhangar to Karachi. By the side of the Karachi road, on the bank of the rivulet, the ridge was found dotted with innumerable chert flakes and cores. But nowhere ancient *débris* could be seen, and the cherts, many of which were unworked, lay direct on the natural rocky surface. There is no doubt that this was the site of a workshop for cutting flint which is available in the neighbouring hills, and we may well suppose that the flint-knappers came from the site we have just noticed.

Extent of the site and its amenities.—The settlement at Bandhni must have extended right up to the river bank, for in the jungle between the river and the main mound we lighted upon chert flakes and fragments of prehistoric pottery. Similar evidence was also available a mile to the south-west of the mound, and again immediately to its west. At the former place, people had cut away in recent times *débris* and earth from a mound, in order to erect an embankment. The mound had thus been completely denuded, although its existence could still be recognized. A few stone walls lay buried in the *débris*, and potsherds strewn the whole area. Again, just beyond the cultivated land to the west of the main mound of Bandhni, there was seen an extensive area studded with small mounds or heaps of *débris* and earth. In these remains too pottery and chert flakes were noticed, of which in places there was quite an abundance. These ruins, although scattered here and there, are thus suggestive of a big settlement of the prehistoric people, which must have occupied the entire valley watered by the Bandhni stream, starting from the foot of the Bado on the west to the river bank on the east. It may be supposed that in this tract, during prehistoric times, people derived as much advantage as they possibly could from the hill-stream, and irrigation followed more or less the same lines as at present. The water is now conducted through channels excavated for this purpose, and carried up to the fringe of the area under cultivation. The pools in the bed of the Bandhni stream yield good edible fish, and the spring-water, which flows in a channel to the north of the main mound, is excellent for drinking. To the ancients these must have been quite important factors in the selection of a dwelling site.

Stone building near Bandhni.—On a hill two miles to the north of Bandhni there are remains of a building constructed of huge boulders. It is rectangular in plan, measuring 110' long by 55' broad, and consists of two chambers, each entered on the east by a doorway about 6' wide. The boulders, which are roughly dressed, are placed without mortar, and quantities of rubble

are spread over the interstices of the stone courses, probably to keep them in position. The walls stand to a height of 5'. Inside the chambers not a potsherd or chert was found, nor was there anything that could furnish an indication of its approximate age. Similar buildings, as we shall see later on, exist at many places in the Sehwan, Kohistan and Karachi Talukas, mostly within easy reach of the Karachi road. They are probably the ruins of the caravan Serais of pre-British days, and it is possible that some of them at least may be as old as mediæval Hindu times.

Chauro.—On the 31st January, we left for Chauro Landi, seven miles to the south of Bandhni. The *Landi* (rest-house) was probably built at the beginning of the British rule; but it was now completely in ruins and unfit for occupation. Below the Landi there is a streamlet issuing out of a spring called Chauro (wrongly spelt as 'Chulera' in some maps). At this point we had to descend from the Karachi road, and after crossing a dry torrent bed full of pebbles, reached a hillock (Pl. X, *a*) to the southwest of the Landi on which some ruins were reported. As we walked over the surface, we noticed chert flakes and many potsherds of the bichrome class, as well as walls of buried chambers at various levels, as at Naig and Damb Buthi. The height of the hillock is only about 21', its maximum length 500' and maximum breadth 300'. We encamped at Dhal, 3 miles to the south of Chauro, and from there conducted some operations on this hillock.

Excavations.—Two trenches were sunk at Chauro in which remains of stone houses were brought to light. One of the trenches did not yield any pottery down to 5' below the top of the hillock. Then there appeared some walls, the bottom of which rested on natural rock, at a depth of 9' from the top. From the sides of the walls were collected a large number of potsherds of the Amri type. In the other trench, started at 4' below the datum line (*viz.*, the hill-top), the foundations of a room were exposed. It was found rather shallow, the natural rock being encountered after only a foot of débris had been removed. Bichrome pottery was recovered in good quantity from inside this room as well.

Bichrome pottery (Pl. XXX).—It should be noted that here, as at Bandhni, the black-on-red Indus pottery was altogether absent. Then again not a single terracotta bull, 'imitation cake' or any other object was found, which could be taken to be characteristic of the Indus culture. No complete specimens of pottery were recovered, but the collection was rich enough to give a good idea of its types and technique. The pots were made of well-levigated clay, but fired at a low temperature. The indifferent firing is responsible for the colour of the fabric which ranges between light red and buff. The majority of pots had thin walls, and the predominant types seem to have been the beaker and the bowl (Pl. XXXIX, 1—5). The patterns are all geometric, and drawn in chocolate on buff, or in some cases, on light red slip with fine artistic effect. The usual reddish brown band also occurs at the neck and is repeated below the ornamented portion of the vase; but in the majority of cases this colour has disappeared. In the following description its occurrence is recorded only in a few instances, where it has actually survived. There is, however, little doubt that originally almost all the vessels bore reddish brown bands. The designs, which display a great variety,

do not call for any special remarks, as most of them have been considered already in connexion with other sites.

- Cr 75 Light red ware; festoon consisting of a continuous line of elliptical loops, each formed by multiple parallel curves, having a dot in middle; chocolate on buff slip. Fig. 1.
- Cr 81 Light red ware; reddish brown band at neck; solid lozenges in two parallel rows in black on red slip, divided by a line between them. Fig. 2.
- Cr 22 Light red ware; reddish brown band at neck; below, a row of solid lozenges on light red slip. Fig. 3; also Pl. XXXIX, 4.
- Cr 24 Light red ware; two solid triangles meeting at a point alternating with two solid leaves in compartments; chocolate on light red slip; traces of a reddish brown band. Fig. 4.
- Cr 98 Pale ware; two solid triangles meeting at a point in compartments; black on buff slip. Fig. 5.
- Cr 65 Light red ware; chocolate on buff slip; design as on Cr 75. Fig. 10.
- Cr 97 Pale ware; reddish brown band at neck; below, festoon in chocolate on buff slip. Fig. 11.
- Cr 84 Light red ware; sigmas in chocolate on buff slip. Fig. 12.
- Cr 96 Double-axe or shield with interior cross-hatched; chocolate on buff slip; pale ware. Fig. 13.
- Cr 92 Light red ware; continuous line of lozenges with interior filled in by parallel hatches; chocolate on buff slip. Fig. 14.
- Cr 69, 73 Light red ware; chocolate on buff slip; design as on Cr 75. Fig. 19.
- Cr 51 Reddish grey ware; a row of eye-shaped compartments with vertical strokes above and below; chocolate on buff slip. Fig. 20.
- Cr 27 Greyish ware; two parallel rows of solid crescents with an intervening row of solid lozenges; chocolate on buff slip. Fig. 21.
- Cr 60 Light red ware; two parallel festoons with a dot in each compartment; chocolate on red wash. Fig. 22.
- Cr 76 Light red ware; double-axe or shield with cross-hatched interior, as on Cr 96; chocolate on buff slip. Fig. 23.
- Cr 61 Light red ware; an elliptical compartment with a square in the centre having incurved sides and chequer pattern, and a hachured leaf motif against each of the sides; chocolate on buff slip. Fig. 43.
- Cr 21 Light red ware; reddish brown band at neck; below, two solid triangles meeting at a point, alternating with group of uprights; short strokes also above and below; chocolate on buff slip. Fig. 36.
- Cr 57 Pale ware; two solid triangles meeting at a point separated from another such motif by a hachured leaf; chocolate on buff slip. Fig. 24.
- Cr 89 Light red ware; design as on Cr 60; chocolate on light red slip. Fig. 35.
- Cr 79 Reddish grey ware; an inverted-crescent-shaped compartment with two solid blocks at two ends and in the middle a number of uprights; below,

CHAURO, DHAL, POKHRAN AND KARCHAT

PLATE X



(b) A PARTIAL VIEW OF THE SITE ON DHAL HILL AFTER CLEARANCE.



(d) THE MOUND AT KARCHAT.



(a) THE MOUND NEAR CHAURO LANDI.



(c) THE HILL STREAM OF POKHRAN.

- a solid crescent; traces of reddish brown band at neck; design in chocolate on buff slip. Fig. 25.
- Cr 29 Reddish grey ware; traces of reddish brown band at neck; below, two parallel rows of half-ellipses¹ in chocolate on buff slip; below, another reddish brown band. Fig. 44.
- Cr 91 Light red ware; reddish brown band at neck; below, two parallel rows of half-ellipses, each formed of two curves with a dot in the middle; chocolate on buff slip. Fig. 45; also Pl. XXXIX, 1.
- Cr 6 Light red ware; a continuous line of eye-shaped motifs with uprights of different sizes above and below; chocolate on light red slip; below, a band of reddish brown. Fig. 29.
- Cr 17 Light red ware; design as on Cr 6. Fig. 30.
- Cr 38 Thick, pale ware; two solid triangles meeting at a point, followed by six uprights, a compartment of four horizontally placed solid leaves in a column, and six uprights repeated again; chocolate on buff slip. Fig. 39; also Pl. XXXIX, 2.
- Cr 16 Thin, light red ware; reddish brown band at neck; below, a group of uprights alternating with two solid horizontally placed leaves in a column in chocolate on buff slip; below, reddish brown band repeated. Fig. 38; also Pl. XXXIX, 5.
- Cr 82 Reddish ware; reddish brown band at neck; below, a cross-like figure made of four solid triangles with incurved sides, the central space forming parallelogram being left blank; the figure is flanked by uprights, and in a compartment there was probably a column of solid leaves of which traces remain; below, reddish brown band repeated; chocolate on buff slip. Fig. 46; also Pl. XXXIX, 3.
- Cr 95 Pale ware; design composed of groups of uprights of different sizes; chocolate on buff slip. Fig. 37.

Chert flakes.—A number of chert flakes were discovered. They are generally very well made, and have fine cutting edge. One of them (Pl. XL, 31) is over four inches in length (Cr 40), but only .6" broad, while another (Cr 44), which is about two and a half inches long, has a breadth of .3" only. The four examples, Cr 41, 32, 43 and 35, measure respectively 2.75", 1.4", 1.7" and 1.15" in length.

Dhal.—We halted at Dhal, immediately to the east of the Karachi road. Our camping ground was in the fastness of hills, near a watercourse coming out of a spring at the foot of the Dhal, which is the name of a section of the Laki Range. About a furlong to the east of the road, there is a large gap between two hillocks through which lies a torrent bed. The wall of one of them is engraved with very queer signs covering a length of as much as fifty feet. The height of the engraved face is six feet in the middle, diminishing to three at the two ends. The material on which the signs are engraved is sandstone, but

¹ This pattern occurs at Nal.—*Mem. A. S. I.*, No. 35, Pl. XVII, 17.

so delicate in texture that even a pebble would be sufficient for such engraving. The stone would also easily lend itself to the destructive processes of Nature. The size of the individual signs varies between 8" and 14". There seem to be a few modern Sindhi scribbles about the middle of the top line. Some of the signs are: the man, human head and palm, bow and arrow, conch, boat, Sind ibex and the gazelle. The sign that is frequently repeated looks like a shoe. There are again many geometrical figures, for instance, squares and rectangles divided into compartments, which probably stand for houses or game-boards. The signs do not seem, however, to have anything to do with the writing of the prehistoric peoples.¹ It appears to be of quite recent origin—may be the work of some shepherds grazing their cattle in the neighbourhood, who found a pastime in engraving fanciful designs on the rock.

Ruins of a Prehistoric settlement.—Within two furlongs of the hillock mentioned above there are traces of a prehistoric settlement along the edge of a huge depression produced by the scouring of torrents. The entire length of the site, which may be nearly a mile and a half, is dotted with ruins, although these are much too scattered and fragmentary to enable us to visualize the actual planning of the settlement. Stray heaps of boulders and rubble, interspersed with pottery fragments and chert flakes, and remnants of partially buried stone walls are in fact all that is left of the site. And indeed, it could not be otherwise, being subjected to systematic encroachment by the local cultivators. Following the channel, which runs through the heart of this area, we came up to the foot of the Dhal hill, near a gorge opening towards Ranikot. The channel comes through the gorge and debouches westward in the direction of the Karachi road. At this point, on the top of a hill, there are vestiges of buildings of the Chalcolithic period. The highest part of the area covered by these remains shows two pits, said to have been dug in recent times by somebody in search of treasure. A part of the buildings, which had stone foundations, was cleared by scraping and shifting of superfluous stones that had been lying in heaps here and there (Pl. X, b). Similar clearance at the base of the hill brought to light the outlines of a substantial rampart wall which was followed up to a length of sixty feet (Pl. XLVI). The rocky bed on which the structures had been erected on the top of the hill was reached only after a foot of excavation.

Finds at Dhal.—Some of the typical objects discovered from the chambers that were cleared are mentioned below. They include fragments of black-on-red and perforated pottery, terracotta 'cakes,' chert flakes, etc. The finds conclusively proved that there existed here a settlement of the Indus people. A few specimens of thin pottery, evidently of the Amri type, were also noticed amongst the ruins in the plain down below.

- Dl 3 Miniature painted trough fragment; ht. 2"; dm. at mouth 4.2"; groups of slanting lines in a band, in black on red slip. Pl. XXXVII, 3.
 Dl 13 Painted vase fragment; slanting lines in detached groups in two bands; black on red slip. Pl. XXXII, 22.

¹ Dr. Pran Nath, who is engaged in deciphering the Indus seals, tells me that it is a genuine prehistoric document !

- Dl 20 Painted vase fragment; circle divided into conical compartments with one or more stroke in each; below, square with a dot: black on red slip.
- Dl 2 Part of a vase with tapering bottom; pale ware; ht. 3". Pl. XXXVI, 19.
- Dl 1 Vase with ring-base; the base seems to have been separately made; on the bottom there are marks of the matting on which it must have been placed when wet; light red ware; ht. 2·8": dm. at mouth 1·95". Pl. XXXVII, 26.
- Dl 25 Pottery dish-on-stand fragment; incised crescents. Pl. XXXI, 9.
- Dl 12 Dish-on-stand with incised crescents in circles. Pl. XXXI, 10.
- Dl 4, 19 Pottery fragment with concentric circles incised. Pl. XXXI, 14.
- Dl 27 Perforated pottery fragment.
- Dl 32 Terracotta bangle fragment; dm. 2·5".
- Dl 39 Oval-shaped terracotta 'cake'; maximum L. 4"; thickness 1·6".
- Dl 29 Chank bangle fragment; dm. 3·2".
- Dl 40 Round limestone object, probably part of a door-socket; ht. 2·5"; dm. 4·3".
- Dl 42 Copper ring; dm. ·85". Pl. XXXIII, 51.
- Dl 36 Chert flake; L. 1·2".

Maliri Landi.—On the 3rd February, after a march of six miles we reached Maliri Landi in the afternoon. The last two miles we had to trudge along the dry stony bed of the Maliri river which proved particularly difficult for the laden camels. One of the camels actually stumbled and fell down, thereby severely hurting one of our Baluch followers. That night we remained under canvas outside the ruined Landi. Luckily enough, the Landi had its roof standing and could be availed of by the camelmen and coolis for shelter. Near by, at the foot of the hill, is the Maliri spring. Its water escapes into a rocky depression, cut up into a number of pools which appeared to be a favourite breeding ground for fish. Between the Landi and the spring the ground was studded with thousands of flints, rough as well as chipped, but not a trace of any pottery or structural remains could be found. Some samples of flint were collected, including a core (Pl. XL, 46) and a number of flakes (*e.g.*, Pl. XL, 47). Flint is available in the neighbouring hills, and it is very likely that like Bandhni this spot also represents the site of a flint-knapping workshop. The locality could never have been a populous one, in view of the scanty water supply and the narrow valley in which it is situated, and must have offered very little scope for agricultural pursuits. At present there is nothing much of cultivation near the spring, and the population of Maliri is limited to only two or three miserable-looking huts.

Pokhran Landi.—Next morning, breaking up camp at Maliri, we resumed the journey. Beyond Maliri we gained entry into the Kohistan section of the Karachi District, and after a ride of 15 miles across a barren and stony country, in which water was nowhere available, we arrived at Pokhran by midday (Pl. XII, e). The

Karachi road passes here through the bed of the Pokhran river (Pl. X, c), and at the point of the crossing there is as usual a ruined Landi. Its roof had fallen, and the rooms were full of débris. Tents were therefore pitched in the midst of the jungle on the northern bank of the river, by the side of a hill. The Landi is situated on this bank, on a table-land rising about 28' above the bed. The river is here about 1,300 feet wide, and at the time of our visit was divided into little pools of water. Following the bed of the river westward, one can reach an extensive sheet of water in a depression of the hills, which afforded one of the few rare sights that greeted us since our departure from the Manchhar. The water issues from natural springs and accumulates here, forming into a beautiful lake. In the rainy season, it receives a tremendous volume of water, causing a strong flow of the stream eastward down the valley. The lake is girt by hills on three sides, and its edges are hidden in jungle which is said to be occasionally haunted by leopards. A channel from the southeastern corner of the lake serves the purpose of irrigation. The lake is not visible from the Karachi road, and being in a secluded spot it evaded our notice at first.

Remains at Pokhran.—The bank on which the Landi is situated proved interesting as the structure was found resting on the remains of earlier buildings. Below the plinth of the Landi, and all around it, could be seen lines of stones embedded in earth, and prehistoric potsherds strewed the area from one end to the other. Excavations along the stones showed that they served only as foundations of houses, and their bottom could be reached at a depth of only a foot from surface. In one of the chambers that were opened, we came upon painted potsherds of the Amri type, chert flakes and a big fragmentary jar with tapering base. The jar was supported by small stones at the base, and inside it was found the upper jaw of a goat (*see below*, p. 156). To the east of the Landi there are traces of a rampart wall along which some clearance was also made. It runs east to west, joining the hill on one side and the remains near the Landi on the other. The Karachi road cuts through the wall which at this point shows a width of 18 feet. On the southern bank of the Pokhran there are also ruins of the prehistoric period, occupying an area of about 1,400 feet in length and about the same in breadth. The site is, however, barren of antiquities, as trial diggings revealed, the only sign of early occupation being stray potsherds and shingles, and the stone foundations of buildings buried here and there. In the midst of the prehistoric remains, there is a roofless building of evidently modern construction, measuring 288' × 53'. It is entirely of stone, the outer wall being as much as 7' in width. It consists of six rooms, each entered on the east by a doorway. No pottery or other objects were found in them, and the building bore manifest resemblance to the one noticed near Bandhni.

Painted Pottery.—The painted pottery from the northern bank of the Pokhran is generally of the class of wares discovered at Amri and other sites of this culture. Specimens of straight-shouldered vessels (*e. g.*, Pl. XXXVIII, 18) were recovered here, which appear to be parts of beakers. Such vessels, as it has often been remarked, are characteristic of the Amri culture. Many examples,

however, could not be had for the study of the ornaments. The decoration follows evidently the three-colour system, comprising chocolate and reddish brown applied on buff slip. Some of the examples are described below:

- Pl 19 Vase fragment; reddish brown band at neck; below, a festoon making a continuous line of loops with a dot in each, and a parallel wavy line; below, the reddish brown band repeated; design in chocolate on buff slip; light red ware. Pl. XXIX, 34.
- Pl 21 Dish fragment with ring-base; chevron along the edge of a circle, in chocolate on buff wash; grey ware. Pl. XXIX, 22.
- Pl 18 Vase fragment; chevron in two bands in chocolate on buff slip, separated by a red band; light red ware. Pl. XXIX, 25.
- Pl 16 Vase fragment; pale ware; a continuous festoon of half-ellipses, each of three parallel curves, with a solid elliptical dot in the middle; two parallel wavy lines below; black on buff slip. Pl. XXIX, 28.
- Pl 2 Tumbler fragment; flanged base; light red ware; chevron in chocolate on buff slip; red bands above and below. Pl. XXIX, 32.
- Pl 1 Vase fragment; bulged out body; chevron in chocolate on buff slip; traces of reddish brown bands above and below; light red ware. Pl. XXIX, 33.
- Pl 22 Bowl with ring-base; traces of original painted bands; ht. 3·9"; dm. at mouth 3"; light red ware. Pl. XXXVI, 41.

Specimens of Indus Pottery.—Three samples of 'Indus pottery' were also found, *viz.*, Pl 34, 38 and 37. The first two are fragments of perforated pottery vases. Pl 34 came from the surface of ruins on the south bank of the Pokhran, and Pl 38 was found on the northern bank within a foot from surface. Pl 37 is a sherd of an offering dish-on-stand with incised 'shooting rays'. This was lying on the northern bank mixed up with 'non-Indus' pottery.

Flints.—Finds from the northern bank of the Pokhran included a small core (Pl 33), L. 1·2", and a number of flakes of varying size of which a fine example is Pl 27, measuring 1·55" in length. The core shows that it was cut out of a limestone block.

Other remains near Pokhran.—There are signs of prehistoric habitation also to the southeast of Pokhran, at a distance of about a mile and a half, on the Daphro Nāi. This site, which is called 'Kachchho Buti', is practically a flat area with a few heaps of shingles and potsherds here and there. In one place, where the ground rises to a height of about 6', there are traces of stone walls, or to be more correct, foundations of walls. Some chert flakes and potsherds were picked up from the ruins, but the latter did not prove much useful for study, being reduced to minute fragments.

Karchat.—A site, which appeared to be really interesting from the nature of the surface relics, was examined at Karchat (Pl. X, d), 4 miles to the south of Pokhran. Outside the village there is a mound about 27' high, having a maximum length of 750' and a maximum breadth of 680'. It is situated to the east of the Khirthar Range, and to the north and west of the Kambu and Daphro hills, respectively. The mound is locally known as 'Masumjo-Buti'. Close to it there are

three springs, the water of which is conducted along channels for irrigation. Black shingles, which must have been originally used for the foundations of buildings, were found scattered on the surface. The bases of walls were made of a different material, a kind of buff sandstone, remains of which were exposed in our trial pits. From these pits, as well as from the surface, chert flakes, black-on-red pottery, fragments of terracotta 'imitation cakes' and miscellaneous other objects were collected, which left no doubt as to the chalcolithic character of the site, as also to its being a station of the Indus civilization.

Painted Pottery (Pl. XXXII).—The site yielded some good examples of the black-on-red pottery. The majority of them show a richness of colour and wealth of decoration, which is remarkable. Its kinship to the wares of another site called Shahjo-kotiro, explored later on (p. 137), will be evident. Some of the motifs, such as the date-palm, assemblage of slanting lines used as a repeating ornament, and a continuous line of eye-shaped loops, which may stand for bird-heads, are common to both the sites. The slanting lines motif is very rare at Mohenjodaro, but at these sites it is of frequent occurrence. The Sind ibex depicted in rows on some of the potsherds found at Karchat has an interesting local significance. Near Karchat, in the Darang section of the Khirthar, there is a preserve for the ibex, which originally belonged to the Mirs but is now under the management of the Karachi Collectorate. The Khirthar hills are full of this animal (*Capra aegagrus*, Sindhi *sarha*), and Darang, which has a 'shooting box,' is frequently visited by *Shikaris* who proceed to the place *via* Karchat. Some of the more interesting of the painted specimens are described below:

- Kr 8 Vase fragment; spiraliform foliage, floral motif with central dot and hatched branch motif. Pl. XXXII, 1.
- Kr 30 Vase fragment; serrated branches and floral motif with a central dot. Pl. XXXII, 2.
- Kr 52 Bowl fragment; group of uprights alternating with cork-screw motif. Pl. XXXII, 3.
- Kr 49 Bowl fragment; a continuous line of eye-shaped motifs at neck; below, a group of slanting lines alternating with a column of small horizontal strokes. Pl. XXXII, 4.
- Kr 24 Vase fragment; thick ware; squares with incurved sides, each having in the middle a floral motif with a central dot. Pl. XXXII, 5.
- Kr 99 Dish fragment; thick ware; parallel columns of conical loops with dagger-shaped strokes intervening; also detached leaves in a line. Pl. XXXII, 6.
- Kr 27 Vase fragment; group of uprights alternating with a column of horizontal strokes. Pl. XXXII, 7.
- Kr 107 Tumbler fragment; ht. about 5"; semi-circular motif with hatched interior, in compartments, in horizontal registers intervened by continuous eye-shaped loops; also date-palm; below, a line of eye-shaped loops again. Pl. XXXII, 13.
- Kr 32 Vase fragment; date-palm; below, ribbed body for which compare Sha 13, 30(p. 138). Pl. XXXII, 14.
- Kr 31 Branches of tree which resemble those of the date-palm. Pl. XXXII, 8.

- Kr 110 Vase fragment; plant design. Pl. XXXII, 15.
- Kr 45 Saucer fragment; *Pipal* leaf alternating with floral motif having central dot; on the back, a group of slanting lines at intervals in a band. Pl. XXXII, 9.
- Kr 20 Bowl fragment; detached groups of slanting lines in two bands separated by a ridge; ht. 2". Pl. XXXII, 10.
- Kr 100 Vase fragment; probably leaves, and uprights in compartment in an upper band; lower band cross-hatched. Pl. XXXII, 16.
- Kr 11 Vase fragment; animal with cross-hatched body; continuous elliptical loops between the legs; below, group of slanting lines. Pl. XXXII, 17.
- Kr 23 Vase fragment; design as in Kr 99, upper band. Pl. XXXII, 18.
- Kr 18 Vase fragment; plant design. Pl. XXXII, 11.
- Kr 56 Vase fragment; a row of ibex. Pl. XXXII, 19.
- Kr 102 Bowl fragment; in the upper band, slanting lines in detached groups; below, a row of ibex. Pl. XXXII, 12.
- Kr 63 Ring-base bowl fragment; slanting lines in groups at intervals; ht. 2·7"; dm. at mouth 3·55". Pl. XXXVII, 5.
- Kr 64 Ring-base bowl fragment; design indistinct; ht. 2·5"; dm. at mouth 3·2".
- Kr 91 Pan; fragmentary; ht. 3"; dm. at mouth 10"; along the side, two wavy lines; in the middle, concentric circles with a ball in centre. Pl. XXXVII, 6, 7.

Other finds.—Besides painted pottery there were also collected some specimens of plain pottery at Karchat, of which only four need be mentioned. These are: Kr 65, a vase fragment (ht. 2·9") with red wash, showing a bulged out body (Pl. XXXVII, 4); another fragment of a vase, Kr 10, with ribbed shoulder, short neck and undulating body (about 5" high); a part of a dish-on-stand, Kr 90 (dm. 12"), with incised strokes arranged in concentric circles and red wash on the rim and back (Pl. XXXI, 16), and Kr 80, fragment of a perforated pottery vase. Among terracotta we should mention a toy-cart frame, Kr 72 (about 3·6" long, Pl. XXXIV, 9), a toy wheel, Kr 118 (dm. 2·4") and the head of a ram, Kr 76, of which the body is missing. There were also terracotta bangles, *e.g.*, Kr 86 (dm. 2·4"), and Kr 87 having a row of dots in chocolate at the edge (dm. 1·9"). Kr 125 (Pl. XXXIII, 55) is a terracotta bead of long barrel shape (L. 2·1"). Beads of semi-precious stones are: Kr 129 (Pl. XXXIII, 44), which is of chalcedony and of flat barrel type (L. ·7"), and Kr 105 (Pl. XXXIII, 53), a cylindrical specimen of lapis lazuli (L. ·35"). Among beads there were also some of steatite, of the thin discoid type, *e.g.*, Kr 127 (dm. ·35", Pl. XXXIII, 38). Specimens of chert and copper tools were not many. Those illustrated are: Kr 92 (Pl. XL, 35), a chert flake of whitish grey colour (L. 1·35"), Kr 95, another chert flake of brown colour with pointed end (L. 1·7") and Kr 78 (Pl. XLI, 26), a fragment of a copper pin (L. 3·55"). The chert flake Kr 95 (Pl. XL, 34) shows that it belonged to a core cut out of limestone.

CHAPTER VIII. TO KARACHI AND KOTRI THROUGH THE BARAN AND MOL VALLEYS

Halt at Pokhran and Karchat.—The trial operations at Karchat were being conducted from our camp at Pokhran. As previously arranged, we were to proceed from here to Khajur on the 7th February. But in the previous evening the weather became threatening. After closing the work at Karchat we returned to Pokhran amidst storm and rain, which continued throughout the night. It was extremely lucky that the camping ground was protected on one side by a hill; otherwise the tents would have surely blown off. Although the tents were safe, the rush of water along the hill side turned the camping ground into a pool of water, and it was with some difficulty that we could drain it off. Next morning, there was lull for a few hours; but it was soon followed by rains, and we could not manage to stir out. On the following day, as soon as there was another lull, we shifted on to a *serai* at Karchat, where on account of the foul weather persisting we were detained for a few days more. But this compulsory stay was not without its advantage, Karchat being the first place after Jhangar where we could get some supplies. As regards our *Dāk*, we had been receiving it so long *via* Jhangar on alternate days. This had now to be discontinued, and a fresh 'camel-post' was organized, bringing our camp in direct touch with the next post office at Thano Bula Khan, at a distance of about 35 miles.

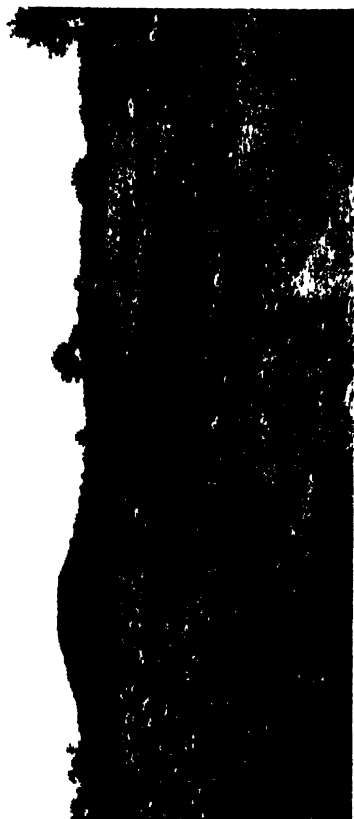
The Baran Valley.—Near about Karchat, the Khirthar Range terminates and another chain starts, known as the Kambu. Across the valley, at the southern extremity of the Khirthar, there flows the Baran river which first touches the fringe of this range and then falls into a plain lined by the Kambu on the west and the Laki on the east. For a distance the river runs parallel to both until it reaches the vicinity of Thano Bula Khan, where it cuts its way through the Darwat Pass in the Laid hills. This valley is intersected by a number of routes two of which deserve special mention. One of them is the track to Karachi, which lies to the east of Karchat and passes along the western bank of the Baran river. The other route takes a definite shape near Khajur, to the south-east of Karchat, and proceeds to Kotri *via* Arabjo Thana. An offshoot of the former branches off near Khajur, leading westward to Taung, from where it reaches the boundary of the Jhalawan District of Baluchistan.

Ruins on Kohtras Buthi.—From our camp at Karchat was visited a site on a hill called Kohtras Buthi (Pl. XI, *a*), about five miles to the south-west and not far from the bank of the Baran river. It is situated by the side of the camel-track from Arabjo Thana to Taung. The top of this hill, which is covered by ruins, reaches a maximum height of 95 ft. on the north, gradually sloping down to only 10 ft. above the surrounding plain on the south where it meets the Taung road (Pl. XLVI). On the east, west and north the hill is quite steep, rugged, and difficult of approach. As one ascends the eminence from the south, there is first of all, above the incline, a low rampart wall, and next a second wall much more substantial than the first, both built of stone boulders laid

KOHTRAS AND ARABJO-THANA



(a) A GENERAL VIEW OF KOHTRAS BUTHL.



(b) A PART OF THE OUTER WALL AND FOUNDATIONS OF CHAMBERS

without any mortar. The second wall, which must have been originally of huge proportions, appeared to be a good example of cyclopean masonry. At first sight its outline was not very clear, as piles of loose boulders were lying all along. But a little clearance of the inner face was enough to reveal its original appearance (Pl. XI, b). There were also traces of four ruined bastions and an entrance on the south-east. Entering through this opening the visitor finds himself in the midst of an extensive quadrangle, dotted all over with the ruins of stone-built houses. But before reaching the area he has to walk across a vacant land where no such remains exist. This land, bounded on one side by the cyclopean wall, was in all likelihood an open courtyard. Amongst the ruins we could trace the outlines of countless rooms, both large and small, grouping themselves into blocks separated from one another by alleys. The greater part of the area covered by ruins is divided into two sections by a long ridge which runs north to south, and along the two sides of the ridge houses were erected one after another. Coming near the courtyard, the height of the hill diminishes from 95 feet to 64 feet. A little to the north of it some excavations were conducted, in the course of which a number of rooms forming a small house and an alley running by its side were fully exposed. The alley proceeded from the courtyard, and a passage branching off from it gave access to the interior of the house. There were further discovered a small flight of steps at the south-western corner, and near the entrance a bath measuring $5\frac{1}{2}$ feet by 3 feet. But much progress could not be made in the clearance on account of rains, and eventually the work had to be abandoned. The houses on Kohtras Buthi must have been all built of stone at the base, but it was clear that in the construction of their superstructure neither stone nor brick was ever used. The deposits of the various chambers did not anywhere seem to reach a depth of more than three feet. So that we had to conclude that the stone courses, traceable all over the area, were nothing but the foundations of buildings.

A Prehistoric fortress.—There is no doubt from the objects recovered that the site is one of the Chalcolithic period. But the remains cannot be those of an ordinary settlement. The cyclopean wall, with which the area was girt and protected, suggests its being the site of a fortress. The difficulty of access from three sides no doubt contributed to its safety. Standing on the top of the hill one could have a clear view for miles around, the importance of which from a strategic point of view would be immense. To the west of the Buthi is a flanking chain of the Khirthar on the way to Taung, in which at places gaps have been filled up by constructing massive stone walls. The most prominent of these can be seen just by the side of the Taung road. It is about 400 feet long, 30 to 35 feet wide on the top, and has a height of over 20 feet. As regards its age, nothing can be said definitely; but it is not difficult to recognize that it was erected for military purposes, probably to shut out enemy forces coming from Baluchistan. Immediately to the east of this wall there are remains of a stone-built structure like those on Kohtras Buthi. Amongst these remains there could be noticed pottery fragments and chert flakes, the pottery corresponding to the finds from the Kohtras site. The question of water-

supply at this rocky place, where it would be impossible to sink a well, must have engaged the attention of the early inhabitants. A common practice, prevalent now in this part of the country, is to hold rain water or the water of the Baran when it is in flood, by means of earthwork dams. It is possible that a similar system was adopted also by the ancients. There are traces of two long stone walls at the foot of Kohtras Buthi, blocking the gap between this hill and the one immediately to its east. There could be seen traces of similar walls also at other points. But it was not possible to ascertain whether these walls were intended to protect the flanks of the hill from enemy attack, or to serve as dams for collecting rain water.

Finds.—The finds recovered from Kohtras Buthi include a few fragments of painted pottery, two pottery tumblers, some chert flakes (*e.g.* Ko 62, L. 1·7": Pl. XL, 39 and Ko 65, L. 1·1": Pl. XL, 38) and a fragment of a copper awl. Of the painted sherds only a few bear traces of the original decoration. The motifs occurring on them are solid triangles meeting at a point, comb-shaped branch and the rare ladder pattern noticed elsewhere. Many of the vessels had straight shoulder and wide mouth (*e. g.*, Pl. XXXVIII, 22), a type familiar to us from sites of the Amri culture. A few selected specimens are described below:

- Ko 9 Painted vase fragment; light red ware; solid triangles meeting at a point, in black on red slip.
- Ko 46 Painted vase fragment; light red ware; part of a comb-shaped branch motif, in black on red slip. Pl. XXIX, 7.
- Ko 54, 53, 58 and 12 Fragments of a painted tumbler; ht. 3·2"; a series of ladders in a band; black on red wash or slip. Pl. XXIX, 31 (Ko 12); Pl. XXIX, 35 (Ko 58).
- Ko 67 Painted vase fragment; reddish brown band at neck; below, two solid triangles meeting at a point, alternating with uprights; chocolate on buff slip; condition poor. Pl. XXIX, 8.
- Ko 70 Tumbler with ring-base; probably originally painted; ht. 4·1"; dm. at mouth 2·7". Pl. XXXVI, 29.
- Ko 71 Tumbler; traces of red slip here and there; ht. 3·1"; dm. at mouth 1·9". Pl. XXXVI, 28.

Ruins near the Sukan Nāi.—On the 12th February, we left Karchat for Arabjo Thana, and on the way, to the east of the Sukan Nāi, came upon some ruins at the foot of a hill. This proved to be a small prehistoric settlement which, being just by the side of the road, easily attracted our attention. Traces of stone walls embedded in débris were common, and the whole area was covered with black shingles and chalcolithic pottery fragments amongst which chert flakes could also be detected.

The site near Khajur Landi.—Six miles to the south-east of Karchat, we came upon the ruins at Khajur where a halt was made for a couple of hours. The ruins, which occupy an area of about half a mile, came into view after passing the Kalerro hills. On the low outlying ridges of these hills the settlement was laid, but there are certain rocky beds which do not bear any remains upon them; these were probably found unsuitable for dwelling

purposes and were left out. As a result, the settlement developed in patches. The early peoples, like their modern representatives, selected this site, probably considering that the Baran river was in its immediate neighbourhood and a spring-fed channel, the Khajur Wahi, flowed by its side. The water of this *Wahi* is quite good for drinking and could be utilized, as it is done today, for irrigation. There is a ruined Landi, or 'rest-house', on the other side of the Baran, on the road from Taung to Karachi. Near Khajur, the road crosses the Baran and bifurcates in two directions, one branch leading to Arabjo Thana and another to Karachi. It is probable that the road, passing along the western bank of the Baran and the Landi opposite Khajur, represents the older route, while the one from Karchat to Khajur *via* the Kalerro hills by which we were travelling was more or less of recent origin. This follows from the fact that the latter has been laid across the ruins, after having cut away the débris and stone walls which must have blocked its passage. The site at Khajur, which may be at places 10' to 12' high, is littered with débris, as well as chalcolithic pottery and chert flakes. Courses of stone, no doubt the foundations of walls, could be seen everywhere, and over them were lying black shingles in abundance. The shingles, which must have been used for foundations, appeared to be a characteristic feature of the prehistoric sites in these hill tracts of Sind.

Finds.—The objects collected from Khajur were few in number. The pottery fragments represented mostly straight-shouldered vessels (*e. g.*, Kh 8 : Pl. XXXVIII, 21). On some of them could be detected traces of the bichrome decoration, the mentionable patterns being lozenges in a row and chevron. Chert flakes were rather common at this site. A type of frequent occurrence was the one having a rounded end. Some of the interesting objects are described below :

- Kh 1 Painted potsherd; fragment of a vessel with straight shoulder and body, and wide mouth; light red ware; traces of a band of hatched lozenges. Pl. XXIX, 30.
- Kh 8 Painted potsherd; fragment of a straight-shouldered vessel with bulged out body; reddish ware with traces of buff slip and decoration in black; black band on the inner side of the mouth as usual.
- Kh 18 Painted potsherd; fragment of a straight-shouldered vessel; blackish ware; original colours almost faded away; a continuous festoon with a dot in each loop, in black. Pl. XXIX, 14.
- Kh 25 Painted potsherd; light red ware; traces of buff wash and a reddish brown band; chevron pattern in black. Pl. XXIX, 24.
- Kh 28 Terracotta object, flat and oval; buff colour; L. 3·7"; B. 1·95".
- Kh 29 Terracotta biconical bead with incised strokes; L. 1"; dm. at ends about ·55", and at middle 1·15". Pl. XXXIII, 70.
- Kh 47 Chert flake; L. 2·25"; max. B. ·45". Pl. XL, 27.
- Kh 55 Chert flake rounded at end; L. 1·65"; max. B. ·5". Pl. XL, 36.
- Kh 46 Chert flake rounded at end; light red; L. 2·05"; max. B. ·6".
- Kh 57 Chert flake rounded at end; L. 1·4"; max. B. ·35".
- Kh 45 Chert flake rounded at end; slightly crooked; L. 3·55"; max. B. ·55".
- Kh 30 Chert core fragment; L. about 2"; max. B. 1·3".

Mound at Arabjo Thana.—From Khajur we arrived the same evening at the Police outpost of Arabjo Thana, an important village in the Kohistan Mahal of Karachi District. To the south of the outpost, on the bank of a torrent-bed called Kotriwaro *Dhori*, which is connected with the Baran river, there is a mound some 23 feet high (Pl. XI, c). The Dhori was now quite dry; but when the Baran rises, much water passes through it and the other Dhoris of this locality. In consequence there is good cultivation in the vicinity of Arabjo Thana. Having a roundish appearance the mound looked like a Buddhist stūpa from a distance, but a closer examination left no doubt as to its prehistoric character. The surface was dotted with stone rubble and potsherds of a red or greenish tint. From among these were picked up part of a copper tool and a number of long chert scrapers. Recent burials by the local Muhammadans have disturbed the ancient layer of deposits, and the site has undergone much denudation. Still it was worthwhile to sink a few pits and collect from them as many samples of pottery, etc., as possible. But this met with strenuous opposition from the underlings of a Baluch named Mir Khan who owns extensive land at Arabjo Thana. For days together no excavation was possible, and the situation grew somewhat tense when to secure even ordinary supplies became difficult. At this stage, much valuable help was rendered by Mr. Hafiz, the Deputy Collector of Kotri, who was at the time touring in Kohistan. He issued strict orders to the local Zamindars to render whatever facilities we required for our work at Arabjo Thana and in its neighbourhood.

Trial Pits.—When it became possible again to resume investigations, four pits were sunk at the mound of Arabjo Thana. But the work was much hampered by excessive rains which continued for days together. We had therefore to be satisfied with the limited number of specimens that turned up in the course of the operation.

Finds.—Some of the typical specimens are described below:

- Ar 3 Straight-shouldered painted vase fragment; chocolate band at neck; light red ware with red wash.
- Ar 9 Straight-shouldered painted vase fragment; chocolate band at neck; greyish ware.
- Both the vessels are now devoid of decoration.
- Ar 36 Painted vase fragment; pale ware; a line of hatched lozenges at neck: chocolate on buff slip. Pl. XXIX, 29.
- Ar 30 Painted vase fragment; chevron in chocolate on buff slip; light red ware. Pl. XXIX, 23.
- Ar 44 Painted vase fragment; reddish brown band at neck; below, part of a line of lozenges in chocolate on buff slip; light red ware. Pl. XXIX, 18.
- Ar 16 Painted vase fragment; light red ware; a triangular compartment containing a series of uprights, in black on red slip. Pl. XXIX, 17.
- Ar 53 Bead with incised strokes, with a flange at the middle; ht. .65": dm. at the middle .85", and at end .55". Pl. XXXIII, 63.

- Ar 54 Bead with incised strokes; ht. .75"; dm. at the middle .9", and at end .4".
The decoration is probably imitated from basketry.
- Ar 51 Ball of greyish stone; dm. 1.45".
- Ar 52 Ball of greyish stone; dm. 1.15".
- Ar 46 Part of a copper chisel; L. 1.3"; maximum B. .4" and thickness .3".
Pl. XLI, 27.
- Ar 57 Hone; probably slate; L. 5.2"; maximum B. .65"; thickness .3".
Pl. XL, 42.

A large number of finely made chert flakes were collected at Arabjo Thana of which only three are illustrated, viz., Ar 61, L. 3.5" (Pl. XL, 45); Ar 71, L. 2.4" (Pl. XL, 44); and Ar 78, with pointed end, L. 2.6" (Pl. XL, 43).

Ruins at Shahjo-Kotiro.—An interesting site was examined between Arabjo Thana and Khajur, to the east of the road, locally known as Shahjo-kotiro. Although not much higher than the level of the surrounding plain, the site could be recognized from the black and red shingles scattered over the area. It is scarcely more than 8 feet in height at the northwestern corner where it assumes the shape of a little tumulus. Amongst the shingles, bits of red pottery and chert flakes were noticed, but unlike Khajur and Arabjo Thana the number of cherts was comparatively small. There were again very few traces of partially buried stone walls in this area, the only mentionable ones being those exposed by people in the course of digging earth for the construction of an irrigation embankment. This digging has been largely responsible for the spoliation of the site, as at many other places in Sind. Two pits were dug at Shahjo-kotiro, and in one of them stone courses being the remnants of the foundations of a room, were laid bare.

Finds.—A number of interesting objects were recovered from these pits. The pottery included some very fine painted specimens of the black-on-red type. The motifs that occur frequently may be seen on Sha 16: a group of slanting lines is introduced at intervals in a band, and this is followed in the next by a continuous line of eye-shaped loops. The latter appears sometimes also with other motifs, probably to fill up intervening spaces, as on Sha 46. Special attention may be drawn to the motif on Sha 13,30 which probably represents the date-palm, and to the line of ibexes on Sha 20. The type of pot that seems to have been predominant was the open bowl. A few copper objects were also discovered which included fragment of a bangle, a small chisel and an arrow-head. Other objects comprised perforated pottery, terracotta and conch shell bangles, terracotta toy-chariot frame, a few chert flakes and a big pottery jar recovered in fragments. A descriptive list of certain selected specimens is given below:

- Sha 34 Vase fragment; a continuous line of eye-shaped motifs, at neck of vase. Pl. XXXII, 20.
- Sha 21 Vase fragment; decoration as on Sha 34, but in each loop there are linear strokes instead of a dot; below, detached groups of slanting lines. Pl. XXXII, 28.

- Sha 39 Vase fragment; two parallel lines of eye-shaped motifs; below, groups of slanting lines. Pl. XXXII, 29.
- Sha 45 Vase fragment; a group of slanting strokes at neck; on the inner side, festoon ornament.
- Sha 16 Bowl fragment; assemblage of slanting lines at intervals in two bands separated by a line of eye-shaped motifs; ht. about 3·5". Pl. XXXII, 35.
- Sha 27 Vase fragment; assemblage of slanting lines alternating with a column of small strokes, in two bands. Pl. XXXII, 31.
- Sha 31 Vase fragment; two hatched leaves separated by a line in an elliptical compartment. Pl. XXXII, 26.
- Sha 8 Vase fragment; probably part of two hatched triangles meeting at a point; above and below, other hatched patterns, but not clear. Pl. XXXII, 32.
- Sha 46 Vase fragment; *Pipal* leaf in a band with lines of eye-shaped motifs around it; above, in another band, a line of eye-shaped motifs. Pl. XXXII, 24.
- Sha 14 Vase fragment; part of a column of hatched leaves, between two vertical rows of crescent-shaped motifs. Pl. XXXII, 34.
- Sha 20 Vase fragment; a line of ibexes; other parts of design missing. Pl. XXXII, 39.
- Sha 51 Vase fragment; a line of ibexes, but less distinctive than on Sha 20.
- Sha 13, 30 Vase fragments; date-palm at neck; below, ribbed body. Pl. XXXII, 40.
- Sha 19 Pan fragment; in the interior at the centre, concentric circle design with a ball in the middle. Cf. Kr 91, above p. 131. Pl. XXXII, 37.
- Sha 12 Dish fragment; original diameter about 1'; concentric bands and a wavy line. Pl. XXXII, 36.
- Sha 23 Two parallel rows of groups of slanting lines.
- Sha 38 Vase fragment; dotted flower in compartments formed by the sides of hatched triangles.¹ Pl. XXXII, 21. Cf. Ghazi Shah, Pl. XXVI, 17.
- Sha 9 Vase fragment; ht. 2·5"; red wash on outer surface and at neck on inner side. Pl. XXXVII, 19.
- Sha 70-71 Tumbler with ring-base; ht. 3·5"; dm. at mouth 2". Pl. XXXVII, 18.
- Sha 59 Miniature vase; ht. 1·7"; dm. at mouth 1·9". Pl. XXXVII, 9.
- Sha 36 Cylindrical vase fragment; grey ware; ht. 2·1"; dm. at base 3·75". Pl. XXXVII, 20.
- Sha 41 Miniature vase with ridge above base; ht. 1·7"; dm. at mouth 1·55"; wheel-made, but not well formed. Pl. XXXVII, 8.
- Sha 56 Perforated vase fragment, representing portion of the base.
- Sha 26 Dish-on-stand fragment with incised crescents. Pl. XXXI, 15.

¹ Cf. a Dabarkot (N. Baluchistan) example in *Mem. A. S. I.*, No. 37, Pl. XV, D. N. h. 12.

- Sha 18 Fragment of a vase with tapering base (cf. Lk); red wash on surface.
 Sha 6 Dish-on-stand fragment with incised decoration. Pl. XXXI, 8.
 Sha 68 Terracotta toy-chariot fragment; L. 2·6".
 Sha 72 Terracotta bangle fragment; dm. 2·65".
 Sha 75 Shell bangle fragment; dm. 2·5".
 Sha 33 Copper bangle fragment; dm. about 2·1". Pl. XXXIII, 72.
 Sha 48 Copper chisel; L. ·8". Pl. XLI, 17.
 Sha 22 Copper arrow-head; maximum L. 1·7". Pl. XLI, 22.
 Sha 82 Fragment of some rectangular copper implement; L. 1·15." Pl. XLI, 18.
 Sha 80 Chert flake with curved end; L. 1·6". Pl. XL, 41.
 Sha 78 Chert flake with pointed end; L. ·95". Pl. XL, 40.

Hothiano.—Not far from Shahjo-kotiro there is a channel called Pujhani Nāi coming out of a spring in the Hothiano, an offshoot of the Laki Range. Above this channel, on the top of the hill, there are ruins of stone buildings, and hundreds of cherts, both worked and un-worked, lie scattered over the area. There are also stray potsherds here and there, but none with any distinctively prehistoric character. So that it is difficult to pronounce an opinion as regards the age of the ruins. It may, however, be safely asserted that this place too was a flint-knapping centre like Gujo, Bandhni and Maliri noticed already.

Ruins at Ahmad Shah.—On the 16th of February, we left Arabjo Thana and proceeding farther south came across certain ruins of stone buildings in the vicinity of Ehri Nāi. No prehistoric relic was found either on the surface of the ruins or in the trial pits we excavated at the site. But half a mile to its north-west, by the side of a torrent bed, which goes by the name of Ahmad Shah *Dhori*, clear traces of the Chalcolithic period were again in evidence. The débris had been dug out here and there, in which chert flakes (*e.g.* Ah 48: Pl. XL, 56) and cores (*e.g.* Ah 47: Pl. XL, 57) and pottery vase fragments (Ah 43, 42: Pl. XXXVII, 1, 2) were present. The rubbish so obtained had been utilized in a graveyard, to which the site is now reduced, and also for constructing irrigation dams. The principal grave is of one Ahmad Shah after whom the place and the neighbouring torrent bed are called. To the west of the graveyard a *Bandh* has been raised out of the earth and débris collected from the site, in which also lots of chalcolithic pottery could be detected.

Camp at Othmanjo-Buthi.—At a distance of six miles from Arabjo Thana, we encamped on the Baran river, not far from the village of Wahi. Our camp was shaded on one side by a hillock called Othmanjo-Buthi. At first we had great difficulty in procuring drinking water at this place. The Baran water was not drinkable; it could not be used even for a wash, as that would immediately cause violent skin irritation. Looking for other sources of water, we discovered a hot-spring just to the west of the hill, issuing from the steep side of the river bank and splashing down on its bed. As it was quite inconvenient for our men to draw water from the spring, some cutting and clearance near its outlet had to be made. The water was found quite excellent, which more than compensated the trouble we had taken in collecting it.

Ruins on Othmanjo-Buthi.—The surface of the hillock, which is more or less flat, bears evident traces of prehistoric occupation. The ruins cover an area of about 1,000 feet by 800 feet and are at a height of some 50 feet from the bank of the river. Over the undulating rocky bed could be seen lines of stones buried in *débris* which, as usual, were the foundations of the buildings that once stood here. The area was strewn over with shingles and potsherds, some of which washed down by rains were resting on the slopes of the hill. In places, stone blocks, which must have been originally used in the buildings, were heaped up in piles, showing that the site had undergone much disturbance in recent times.

Excavations and finds.—Four trenches were cut along certain walls, parts of which had been already visible on the surface (Pl. XLVI). The foundations of several rooms were laid bare after removing a foot or two of the *débris* in which they were buried, and over sixty objects were recovered from the trenches. The number of painted sherds was limited, and fewer still were those on which decoration was intact. Judging from fragments, the pots appeared to have been mostly of the straight-shoulder type (*e.g.* Pl. XXXVIII, 19) and bore decoration in two colours over a slip of buff or light red. In one of the rooms two large size pots were discovered; the base of one was resting in a cavity purposely made in the original rocky bed in a corner of the room below the floor level. This pot, which was found in a crushed condition, was removed in fragments and later pieced together (Ot 48). It contained portions of the right ulna and rib of a bull and two cuttle-bones (*see below*, p. 155). There was also found in it a pottery feeding-cup with two spouts of which one was missing. The other pot was too fragmentary to be of any use, and only its contents were collected. These were fourteen chert flakes of various sizes and shapes, a cuttle-bone again and a few pottery articles. Of the pottery objects the most noteworthy was a jar-stand (Ot 59) pierced with four holes, evidently for suspension. Another jar-stand (Ot 53) like this was also lying in the same room; it has five instead of four holes. From a room adjoining was picked up a copper chisel (Ot 52), while from another room were recovered some interesting chert flakes of which two are blade-shaped (Ot 62 *a* and *e*) and one is finely pointed (Ot 47). Mention may also be made of a large jar, Ot 64, disinterred in fragments and later pieced together like Ot 48, and a curry stone, Ot 58, which has a flat surface and is raised at one end. Further details of the principal finds are given below:

- Ot 21 and 25 Flat, painted dish; fragments; broad flowing curve and comb-shaped branch motif, in black on red wash; red wash also on the outer surface. Pl. XXIX, 1, 2.
- Ot 16 Painted red ware with buff slip; three parallel wavy lines and oval dot in chocolate. Pl. XXIX, 10.
- Ot 56 Painted vase fragment; light red ware; broad colour-band and two horizontal lines in chocolate on buff slip. Pl. XXIX, 9.
- Ot 48 Big painted pottery jar with straight shoulder; two parallel wavy lines around body; ht. 19·5". Pl. XXXV, 4.

- Ot 27 Painted vase fragment; light red ware; black bands on buff slip. Pl. XXIX, 11.
- Ot 59 Jar-stand with four holes for suspension; red wash on outer surface; ht. 2·51"; dm. at top 5·1", and at base 6·4". Pl. XXXVII, 40.
- Ot 53 Jar-stand with five holes for suspension; pale ware; ht. 1·4"; dm. at top 3·75", and at base 4·6".
- Ot 61 Hand-made miniature tumbler; ht. 2·5"; dm. at mouth 1·5". Pl. XXXVII, 32.
- Ot 64 Big jar with straight shoulder; rimless type; ht. about 17". Pl. XXXV, 3.
- Ot 49 Feeding-cup with two spouts; grey ware; ht. 2·5"; dm. at mouth 2·7". Pl. XXXVII, 33.
- Ot 57 Terracotta bead with incised strokes; globular; ht. ·8"; maximum dm. 1·1". Pl. XXXIII, 71.
- Ot 52 Copper chisel; L. 2·25"; B. at top ·4", and at end ·28". Pl. XLI, 3.
- Ot 47 Chert pointer; L. 4·6"; maximum B. ·55". Pl. XL, 58.
- Ot 46 Chert knife; L. 3·4". Pl. XL, 60.
- Ot 62a Chert flake with lunate edge; L. 1·9". Pl. XL, 59.
- Ot 62e Chert flake with lunate edge; L. 1·8".

The two flakes, 62a and 62e, which have a thin and sharp edge, might have been used as razors.

Ot 38 Chert flake; rectangular; L. 2·15".

Ot 58 Curry stone; L. 10"; maximum B. 5·4"; one end missing. Pl. XIX, 40.

Bachani.—On the opposite side of the Baran river, and due west of Othmanjio Buthi, is a small mound about 8' high, strewn over with shingles and chalcolithic pottery. It falls on the way to Karachi, and is situated to the north-east of Bachani which has a ruined Landi (rest-house). The site appeared to be very poor in antiquities. Traces of buried walls were few, and the number of chert flakes (*e.g.*, Pl. XL, 48: Bc 35) lying over the area was rather limited. A pit, 20 feet by 10 feet, was sunk here, but nothing of much importance was found except a few painted sherds representing the familiar black-on-red ware (*e.g.*, Bc 2: Pl. XXXII, 23).

Halt at Thanu Bula Khan.—On the 19th February, we broke up camp, and after a ride of thirteen miles reached Thanu Bula Khan, the headquarters of Kohistan. Our halt at this place was a little longer than usual. The Brahui and Sindhi coolis, who accompanied us on this wearisome journey of a hundred miles, from Ali Murad to Thanu Bula Khan, were keeping the Ramzan fast and wanted to celebrate the Id festival which fell on the 20th of the month. Moreover, there being no post office on the way so far, sufficient official correspondence had accumulated which had to be disposed of, and there were also other pressing duties to attend to. For all this the halt at Thanu Bula Khan was particularly opportune; but soon after the Id we resumed our journey.

Ruins near the Disoi.—A site was now visited near the torrent-bed of Disoi, five miles to the north-east of Thanu Bula Khan and about two miles to

the west of the Darwat Pass. It appeared to be very much poor, so far as surface relics were concerned. This must have been due to the fact that the whole country remains under water when the Baran rises in flood. Stone rubble and a limited number of prehistoric pottery were found scattered over an area measuring some 600 feet long by 450 feet broad. The site is locally known as the Beḍi Kotīro, and a legend current here avers that boats (*beḍi*) used to ply near it in the past. Beḍi Kotīro rests on a substratum of rock which was reached only a foot below the layer of débris. Trial trenches sunk at this place yielded a few painted potsherds of the Indus black-on-red class (e.g. Di 8, Di 13: Pl. XXXII, 27 and 30), fragments of perforated pottery, pottery dish with incised crescentic marks (Di 25), a copper bangle (Di 51, dm. about 1·75": Pl. XXXIII, 69), terracotta and chank bangles, chert flakes, terracotta toy-chariot fragments (e.g., Di 31), a cornelian bead (Di 53, L. ·6": Pl. XXXIII, 62), a chalcedony weight (Di 52, max. L. ·7": Pl. XXXIII, 61), and about two hundred round and biconical terracotta lumps (dm. about 1·6", axis about 1·1") of which a few were brought back as samples. The purpose of the last mentioned object was not clear, but it is worthy of notice that similar small terracotta lumps were found also at a few other sites in the neighbourhood of Thanò Bula Khan.

The Mol Valley.—From Thanò Bula Khan a road leads to Karachi through the Mol valley, and another proceeds to the nearest railway town of Kotri, after crossing the Baran river at the Darwat Pass. As both the roads were open to motor traffic we decided to explore this part of the District in a car which was requisitioned from Hyderabad. To the Mol valley we were particularly attracted, in view of the prominence given to it by Mr. Carter. As early as 1851, attention was drawn by some writers to the existence of stone structures near the village of Truck in this valley.¹ Recently, Mr. Carter visited these and several other remains, and he referred them to the prehistoric period.² It was therefore necessary to inspect as many of these structures as possible in the course of our journey, and with this object in view we left for Karachi on the 24th February.

Remains at Kapat.—The country to the south of Thanò appeared to be the continuation of the same stony desert lying to its north. The hills in this part were much smaller in height, but bare and rugged as before, and there was greater scarcity of water as we went farther and farther. The country looked generally barren and most uninviting. We passed the village of Damach and halted to the south-west of Kapat to examine the remains of two stone buildings. The one nearer to the road seemed to represent a mediæval Hindu temple. It has four doorways, at the four cardinal points, with traces of four piers in the middle. The walls of the building were standing up to a height of about 5 feet, and huge stone slabs, each about 10 feet in length and of varying width were found amongst the ruins. These were probably used for the roof of the temple. The building seems to be identical with the one referred to as "Gohar Basta" by Masson, which he visited on his way from

¹ *Jour. Bom. R. A. S.*, Vol. V (January 1854), p. 355.

² Cousens, *Antiquities of Sind*, p. 46.

Arabjo Thana to Karachi.¹ To its west, at a distance of one hundred and ten feet, there is another building, measuring 168' by 45' and divided into four rooms, each of which could be entered by a door on the east. The walls, which are of stone, measure 5' in width and stand to a height of 6'. This building resembles very closely the structures we had already met with at Bandhni, Pokhran and other places, with however this difference that here it is associated with a temple.²

Remains near Truck.—About $3\frac{1}{2}$ miles to the south-west of Kapat there is another group of similar ruins. The main body of the building, which extends from north to south, measures 294' long by 46' broad. It is divided into seven rooms arranged in a line of which the middle one projects out on the east and west, this projection giving the plan a cross-like appearance. The middle chamber, opening on the east like the other six, has got three doors, and must have formed the most important part of the building. It might have been a shrine. But nothing was found at the site that could throw light on this point. Frere³ pointed out long ago that buildings such as these were common on the lines of road from Karachi to Sehwan and Kotri. It is not impossible that they were intended, at least a majority of them, as shelter for travellers. It should be noted that these ruined buildings must not be regarded as 'prehistoric monuments', since at none of them was found anything prehistoric like chert flakes etc.

Amilano.—After passing through this rugged country we reached the vicinity of the Malir stream, which suddenly emerging into view broke the monotony of the scene. Near the junction of the Mol and the Malir streams is Amilano, about 27 miles from Karachi. Here, the road passes through a prehistoric site. It is about 5' higher than the road, and as usual the area is strewn over with loose rubble. The houses, which have completely disappeared, were erected on courses of stone. These could be traced here and there, and from the débris fragments of pottery and terracotta, *e.g.*, toy chariot, typical of the chalcolithic culture, were collected. But here we had no opportunity of carrying out trial diggings, as the workmen had to be left behind with their implements and other equipage at Thano Bula Khan.

To Mungo Pir and Band Murad Khan.—On the 26th February, we visited the springs at Pir Mungo from Karachi and investigation was carried on in this valley for about eleven miles. The object of the journey was to locate a mound situated between Karachi and Pir Mungo, which is referred to by T. G. Carless in a report on Karachi written in 1838. Carless writes: "An hour's ride brought us to the foot of the hills, which are about 800 feet high, and of coarse sandstone formation: we crossed them through an irregular rocky ravine, having every appearance of being the bed of a large torrent during the rains, and then pursued our way along several valleys, bounded by long narrow ridges, or detached hills.

¹ *Journey*, Vol. II, p. 156 and sketch on p. 157.

² The remains at Kapat seem to be identical with those noticed by Captain Preedy in 1853. *Jour. Bom. R. A. S.*, Vol. V, p. 359 and Pl. V, fig. 4.

³ *Ibid.*, p. 368.

At the gorge of the pass by which we entered, a mound built of fragments of rock was pointed out to me, which is said to contain the treasures of an ancient monarch of the country, and to be the abode of a host of demons, who prevent any one from attempting to open it. About an hour after we had left the spot, we gained the entrance of the plain or valley in which the springs are situated."¹ Following this account we made a search in the area but could not locate any mound of the above description. Next morning, we set out again and this time pushed on as far as Band Murad Khan on the Hab river which separates Sind from the territory of the Jam of Las Bela. On our way back from Band Murad Khan, which is 19 miles from Karachi, we met a Baluchi shepherd who gave us information about a site, overlaid with potsherds and débris, to the south of Mungo Pir.

Orangi.—The place, which we reached soon after, according to the direction given by the shepherd, is near the seventh mile-post from Karachi and immediately to the west of the road to Mungo Pir. The locality is called Orangi in the map. Here, by the side of a grove of date trees a spring gushes forth into a stone reservoir, and through it flows out again into a channel. The land to the south and east of this spring, which is sandy and overgrown with grass, is dotted with small chert flakes (e.g., Pl. XL, 53-55) and also bits of stone rubble; the latter, as we know, are almost a *sine qua non* of the hill sites of Western Sind. Potsherds were rather common, although amongst them no definitely prehistoric piece could be detected. Some of the pottery appeared to be quite modern and were associated with fragments of glass and china. There was therefore no doubt that the site was in occupation in recent times. The presence of the chert flakes on the other hand definitely suggested that this recent settlement stood on the remains of the prehistoric period, and it is possible that this is the site alluded to in the report of Carless. Without excavation there was no means of ascertaining the true character of Orangi in reference to the sites hitherto explored in Sind. The land, over which the remains are spread, is about 8' higher than the channel, and perhaps a prehistoric layer may be found after the modern deposits lying on the surface are removed. This site, being within a few miles of the sea-shore, was therefore the southernmost point in Sind up to which the extension of the prehistoric culture could be traced. Although quite insignificant looking, Orangi may be one of the links in that great chain which once connected this part of India with Persia. Other links of this chain must be looked for in the neighbouring territory of Las Bela. It still remains unexplored, but it is fairly certain that one of the principal trade routes followed by the ancients lay through this country.

The Return Journey.—On the 28th February, we came back to our camp at Thano Bula Khan where we were fully occupied for a week in the listing of antiquities collected and packing them for despatch to Mohenjo-daro. By the 7th of March the party left for Kotri. The path lay across the hills and for some distance along the bed of the Baran river, which flowing through the Darwat Pass(Pl. XII, f) falls on the Kotri plain. After a ride of 11 miles we

¹ *Selections from the Records of the Bombay Government, No. XVII, New Series, Part I, p. 204.*

SOME TYPICAL VIEWS OF THE SECOND JOURNEY



(a) A GENERAL VIEW OF BUBAK.



(b) FISHING IN LAKE MANCHHAR.



(c) THE HILL OF PIR GHAZI SHAH.



(d) THE BANDHNI STREAM ON THE WAY FROM SEHWAN TO KARACHI.



(e) ARRIVAL AT POKHRAN. THE KHIRTHAR RANGE SEEN IN THE BACKGROUND.



(f) THE DARWAT PASS ON THE WAY FROM THAN BULA KHAN TO KOTRI.

broke journey at the Dak Bungalow of Jhangri to examine a site called Dhillanijo-Kot, at a distance of about four miles to its north-east, on the bank of the Baran.

Dhillanijo-Kot.—The ruins of Dhillanijo-Kot occupy a spur of the Laki hills, and stand at a height of about seventy feet from the bed of the river. Remnants of a stone wall, 5' wide, which must have once surrounded the area, were peeping out at places. The site appeared to have been destroyed by the action of the Baran, as it carries a very large volume of water to the Indus during the rains. The actual depth of the deposits was not found to be more than 3' in any place. The area was full of rubble and potsherds from among which a few fragments of 'rimless' vases, and chert flakes (Pl. XL, 49-52) were collected. The pottery was devoid of any decoration, although it had traces to show that it was originally painted.

To Kotri.—Next afternoon we rode off towards Kotri, a distance of 21 miles from Jhangri. On the way water was not available anywhere, except in a little depression where it had accumulated after the recent rains. The path to Kotri was stony, and the country practically bare and barren throughout. No village was seen on the way, and the only people met with were a few meandering goat-herds or some stray visitors returning from Kotri on camels. It was a great relief when leaving this dreary land of Kohistan at our back, we came at twilight to the town of Kotri, which from a distance with its iron bridge looked mysterious as it lay in silhouette against the eastern horizon. Here, we closed the survey, and after a few days' halt at Mohenjo-daro returned to the headquarters at Simla.

CHAPTER IX.—GENERAL OBSERVATIONS

The data collected in the foregoing pages enable us to make certain general observations regarding the peoples inhabiting the Indus Valley and its western border-land in the Chalcolithic period (4th and 3rd millennia B. C.)¹. These observations are, of course, of a tentative character, considering that half of Sind, the State of Las Bela, and almost the whole of the Punjab and Rajputana still remain unsurveyed and unexplored, and that in Baluchistan there are very few sites where systematic excavation and stratification have been attempted.

The explorations undertaken by the present writer link up the zone of the Chalcolithic civilization in Sind directly with the area surveyed by Sir Aurel Stein in Southern Baluchistan.² The northern and eastern limits of this civilization are as yet unknown, but it is clear that in Sind it extended in the south-west almost up to the shores of the Arabian Sea. The settlements of Orangi and Amilano in the west and Tharro Hill near Gujo in the east form the base of a triangle, having its apex at Limo Junejo in the north. The people

¹ Regarding dates see Marshall, *Mohenjo-daro*, Vol. I, pp. 103-04. and Mackay, *ibid.*, p. 334.

² For his report see *Mem. A. S. I.*, No. 43.

whose culture we are surveying lived in this region—in the valley of the Indus, as well as in the highland belt stretching north to south, beyond its right bank. The sites discovered within this area fall under two categories, viz., places where the people actually inhabited and those where they carried on the flint-knapping industry, so characteristic of the age to which they belonged. Evidence of this industry has been discovered at several sites, *e.g.*, on Tharro Hill, at Bandhni, at Maliri and in the hills of Rohri.

From the present situation of Amri, Chāñhu-daro, Lohumjo-daro and Mohenjo-daro it is possible to imagine that anciently too, these stations existed not far from the Indus. It is, however, likely that the course of the river followed a somewhat different curve, bringing it much nearer to Chāñhu-daro than at present, although its general direction remained very nearly the same. Living in a flat riparian tract, the Indus people could find almost unlimited scope for agricultural pursuits, like the Egyptians in the Nile valley or the Sumerians and the Babylonians in the valley watered by the Euphrates and the Tigris. But the Indus people must have been a prey to the inroads of their less fortunate but more sturdy, neighbours from the hills, and moreover, were subject also to the devastations wrought by the Indus. In the hilly region, the scope of agriculture was necessarily very much limited. To irrigate the narrow and isolated strips of land was difficult, and it is doubtful if the hard and rocky soil could be made to yield a harvest commensurate with the needs of the people. The two sources of water supply which they could command were the natural springs and rains. The spring water must have been then, as now, diverted through artificial channels and brought over to the verge of the cultivated land. It is only natural, therefore, that settlements should have grown up as they did, at places within easy reach of the torrent-beds and the springs, and the channels emanating from them. This explains why the people chose to dwell at sites like Pokhran, Ghazi Shah, Damb Buthi, Bandhni and Chauro, which are far away from the Indus. At most of these places in the hills, their houses were perched on eminences, and as such were better protected than those of their neighbours of the Indus valley; and besides, these highlands were beyond the reach of the flood water of the Indus.

But the people of the hills were obviously much poorer as compared to those living in the wide expanse of the Indus plains. Wealthy cities like Mohenjo-daro could not possibly have developed in mountain fastnesses, without having the advantage of a rich fertile soil, the gift of a great river like the Indus. It is, however, possible that conditions of life were somewhat more congenial in that age than they are now. The country was blessed with a greater rainfall, and consequently had better prospects of agriculture. For this, evidence is furnished by the large number of street drains and the rain-water pipes discovered at Mohenjo-daro, the universal use of burnt instead of sun-dried bricks in its buildings and the representation on the seals of the tiger, the rhinoceros and the elephant, who favour a moist climate.¹ Some significance should also be attached in this connection to the preponderance of vegetation motifs on the painted

¹ *Mohenjo-daro*, Vol. I, pp. 2, 5-6.

pottery of Mohenjo-daro and other contemporary sites of the Indus valley. It may, therefore, be safely concluded from the archaeological evidence available, that Sind, like Baluchistan, Sistan, Transcaspia and Central Asia, has been subject to continuous desiccation, though to a more limited extent.

So far as this physical change relates to Western Sind, there are certain facts to which I should like to draw particular attention. A glance at the skeleton map (Pl. I) will show that the stations of prehistoric culture discovered in this region were very closely situated to one another, forming a chain as it were, running parallel to the Khirthar Range. At none of the sites again has been traced any sign of re-occupation after the Chalcolithic times, and at present no permanent human settlement exists in the neighbourhood of many. Judging from the large number of stations existing in such a narrow compass, this part of the country must have been much more densely populated than it is now. To the west of the Khirthar and the river Hab, in the Jhalawan and Makran Districts of Baluchistan, Sir Aurel Stein has discovered a similar chain of prehistoric sites, and at some of these he has been able to detect clear evidence of desiccation.¹ Putting these facts together, it seems plausible that one of the reasons for the desertion of the sites in Western Sind was the appearance of a drier climate. And due to this circumstance or another, the people gradually moved towards the rich, food-producing lands of the alluvial Indus country.

An idea of the dwellings of the Indus people can be formed from the buildings unearthed at Mohenjo-daro. They were all constructed with burnt bricks and must have been, in some cases at any rate, more than one storey high. At the hill sites on the other hand, bricks were never used. The walls of these buildings were made of stone at the base, up to a height of two to three feet, the stone blocks being rough hewn and often laid with mud mortar. A material frequently used in the foundations of the buildings was stone rubble. The superstructure must have been built of mud and such perishable materials as reed and wood. Had they used stone for the superstructure as well, we should have found masses of loose blocks in course of clearance, but the débris at all these sites was remarkably free from them. As regards the material of which the roof was made, no definite information is yet available. In the clearance of a house at Mohenjo-daro, large quantities of semi-burnt clay bearing impressions of reed were met with. From this it appears probable that reed and matting overlaid with mud were used for the roof and the partition screens, as in Sind and Mesopotamia at the present day. The roofs of the houses at the hill sites of Sind might also have been made of similar materials. Recent discoveries in Baluchistan have further shown that this type of construction was in vogue there too in the Chalcolithic period.

At two places in Western Sind, viz., at Ali Murad and Kohtras, we have evidence to show that the people had some knowledge of fortification. There is no doubt that the remains at the two sites are those of fortresses or fortified palaces. The defence wall of Ali Murad was built of stone, only at the base, while

¹ *Mem. A. S. I.*, No. 43, pp. 34, 132, 186.

that of Kohtras must have been made entirely of this material. No such structures have yet been discovered either at Harappa or at Mohenjo-daro. In the Indus plains stone was not easily available and does not appear to have been used as a building material, except in such rare cases as for covering street drains.

There was probably quite a different type of dwellings in and around Lake Manchhar. Observations made along its banks testify to the existence of a lake-dwelling people. The lake sites have yielded neither stones nor bricks, but pottery and chert flakes embedded in pure silt. This is very significant, probably suggesting that here the people lived in pile-dwellings, like the lake-dwellers of Europe, in the midst of the lake or close to the edge of water. Dwellings somewhat akin to these exist even now on Lake Manchhar, which are inhabited by fishermen, and it is possible that this form of habitation is a survival from prehistoric times. We have in the lake-sites of Sind probably the only evidence of a fishing folk of the Chalcolithic period in India. Although no undoubted specimen of a fishing implement has been brought to light, it is just possible that the small chert flakes, which have been found in plenty at Trihni and Shah Hasan, were used for harpoons and angling hooks.

These peoples, namely the hill men, the lake-dwellers and those who lived on the banks of the Indus, all used wheel-made pottery, betraying thereby a community of culture, in spite of many diversities. Examples of hand-made pottery are not altogether absent, but these were produced under exceptional circumstances, for instance to be deposited with the dead in burial as at Damb Buthi, and cannot therefore be regarded as typical of the age. The ceramic remains dug out from the dwelling and burial places cannot, however, be relegated, either technically or stylistically, to one particular group; nor are we justified in assuming that all the different pot-fabrics were co-existent. As our evidence is drawn almost entirely from pottery, a classification of the various ceramic specimens so far recovered is essential.

First of all, there is a class of thin ware of buff or light red clay with purely geometric patterns. In Sind, this pale ware, which shows a three-colour scheme, was found for the first time at Amri¹ on the Indus, and subsequently at Lohri near Lake Manchhar and at a number of sites in the hills of Western Sind, *e.g.*, at Pandi Wahi, Bandhni, Damb Buthi and Chauro. The designs are painted in black or chocolate on a matt surface which bears either a thin slip or merely a wash, of buff or light red colour. Frequently, a reddish brown band is introduced, side by side with black or chocolate, which produces a polychrome effect. This ware, however, has not been called 'polychrome' in the present Memoir. In order to distinguish it from the more developed multi-coloured specimens of Nal, on which three or more paints are sometimes used, it may be described as 'bichrome', the paints used on it being two only, leaving the ground colour out of consideration. The reddish brown had for its base, manganiferous iron ore, which was probably obtained from an ochrous substance. The presence of more manganese in the ore was responsible for the chocolate colour: the black was the result probably of using manganese alone; and the

¹ I am grateful to Sir John Marshall (*Mohenjo-daro*, Vol. I, p. 92, n. 3 and p. 100) and Prof. V. Gordon Childe (*Nature*, Nov. 18, 1933, p. 790) for having drawn the attention of scholars to my discoveries at Amri.

pale colour of the clay must have been due to insufficient baking in the kiln.¹ A noteworthy feature of the decoration is the evanescent character of some of the colours which must have been applied after firing. The vessels of this class of pottery are mostly 'rimless'², the predominant types being beakers and bowls. They reveal two distinct tendencies: they are either steep-sided and have slightly everted lip, or have a straight shoulder and bulged out body with a straight lip. From the number of specimens recovered from each of the respective sites, painted pottery of this class appears to have been produced in very large quantities.

Then we have a well-baked thick ware of bright terracotta colour with decorations in black on polished red slip, which varies between Indian red and vermillion. The red colour was produced, as analysis has shown, by oxide of iron contained in a kind of ochrous earth. The ornaments were evolved by combining geometric devices with plant and animal forms; but on this pottery there is a distinct paucity of purely geometric patterns. The forms of vessels were numerous and varied, most of them being unpainted. The commonest types³ are: pointed-bottom or short-stemmed vases, scored below the shoulder; high-footed fruit-dishes; tumblers with flat base; jars with wide mouth and flat base or ring-base; narrow-mouth and wide-shoulder vases; footed bowls; jars with thick and lumpy base; bowls with flat base; goblets; longish jars with flared mouth; handled cups, the handle being pierced with a hole for suspension; and cylindrical vases with perforated body. There were also large storage jars, either squat with large mouth, or tall and narrow-mouth with body tapering down to a slender stem, both having a base inadequate for keeping it standing independently. The principal site of the black-on-red as well as the plain pottery of the aforesaid types is, of course, Mohenjo-daro. What is particularly noteworthy at this site is that rimmed vessels and vessels with splayed out neck are quite common, beakers of the Amri type are extremely rare, and straight-shoulder pots are practically non-existent. From all points of view, therefore, the pale pot-fabrics of the Amri family are to be regarded as quite of a different class from the black-on-red and its undecorated companions from Mohenjo-daro.

At some places, the black-on-red ware has been pretty common, as for instance at the lower levels of Chāñhu-daro and Ghazi Shah, and at Karchat and Shahjo-kotiro. There are again other sites which show a remarkable paucity of the painted fabric, plain or undecorated pottery being there much more in evidence. Considering the extensive operations carried out at Mohenjo-daro, the painted specimens recovered there are comparatively few in number, the vast majority being of the undecorated class.⁴ Similar also was our experience at Lakhiyo and Ali Murad, which agree with Mohenjo-daro in all essential details. Again, at Chāñhu-daro, where we have two superimposed strata, painted

¹ I am indebted to Dr. M. A. Hamid of the Archaeological Department for useful information regarding this matter. For the use of manganese as a material for colouring pottery, see L. L. Fermor, *The Manganese-ore Deposits of India—Mem. G. S. I.*, Vol. XXXVII, p. 602, and *Mohenjo-daro*, Vol. II, p. 686.

² Above, p. 28 and n. 4.

³ *Mohenjo-daro*, Vol. I, pp. 293 ff.

⁴ This fact has been duly noted by H. Frankfort in his *Studies of the Early Pottery of the Near East*, Part II, p. 187. See also Marshall, *Mohenjo-daro*, Vol. I, p. 37.

pottery was far less common at the upper stratum, while quite a wealth of this material came from the lower levels. In Baluchistan, a site called Suktagen-dor represents a culture closely allied to that of Mohenjo-daro. Here also, Sir Aurel Stein found 'a striking rareness' of painted pottery, as compared to the plain fabric.¹ Having regard to these circumstances, it may be safely assumed that painted pottery had in its initial stages a very wide currency over Sind and Baluchistan, but gradually in course of time it became a rarity. At Ghazi Shah, at the lowest levels, the black-on-red pottery (*e.g.*, specimens with the bull figure) has been found in association with samples of the pale bichrome ware; at Amri, it came from above the level of this identical bichrome class, while at Pandi Wahi, it was generally found above the other, but in rare cases this was met with also at the base of the mound, from where the pale stuff almost invariably came.² This shows that the black-on-red technique was prevalent over a long period of time, and that these sites represent *at least two phases* of Indus, one co-existent with the pale ware culture and another posterior to it. Judged by the test of frequency of painted fabric appearing at the various sites, Mohenjo-daro should legitimately be assigned to a *later phase* of the civilization when the people had become more matter-of-fact and utilitarian in their outlook. They preferred the hard-burnt red ware to the more delicate, and indifferently burnt, pale fabric, and gradually abandoned the practice of decorating their household pottery with painting.

The sequence of the two classes of Sind pottery is a matter of great importance, as with it is indirectly linked up the question of the dating of the Nal culture which appears to have been essentially different from that of Mohenjo-daro, that is to say, from Indus. The ceramic remains of Nal, Nundara and kindred sites in Baluchistan, which show a 'geometric' style, form a distinct group by themselves, related more or less to the pale wares of Sistan and of areas farther afield. On the other hand, fabrics of a typical black-on-red class, representing a mixture of geometric, zoomorphic and plant forms, from sites in Northern Baluchistan like Dabarkot, form another group intruding into this zone of pale pottery. This group can be affiliated directly to the cultural zone of Indus.³ Likewise, the pale wares of Sind, which bear a family likeness to the potteries of Kulli and Mehi⁴, and also to some extent to those of Nal and Nundara, in Baluchistan, must be reckoned as an intrusive element in the Indus valley. This kinship probably supplies also the requisite clue for the determination of the order of sequence of Nal in ceramic history. While there are no sufficient grounds to assume a wide difference in age between Amri, Kulli and Mehi on the one hand, and Nal and Nundara on the other, we find in the former group the beginning of a ceramic phase which is more pronounced and in fact fully developed in the latter—the polychromy of Nal and Nundara having at its background

¹ *Mes. A. S. I.*, No. 43, pp. 64, 69. The kinship between the two sites would be evident (*ibid.*, Pls. VI-VII), *e.g.*, from the peculiar bird-shaped whistle, the receptacle having a handle pierced with a hole, barrel-shaped terracotta beads and the characteristic miniature pottery vessels, all these being common to Suktagen-dor and Mohenjo-daro.

² Above, p. 93.

³ *Mohenjo-daro*, Vol. I, p. 97.

⁴ I am not sure if all the painted specimens collected by Stein at Kulli and Mehi are referable to one and the same stratum. Some of these at any rate cannot be correlated with Amri, and have greater likeness to the Indus fabric.

amongst the deposits of Culture II.¹ Beyond Transcaspiia it would be rather futile to proceed at the present moment for typological pendants, although in point of decorative motifs it would still be worth while to compare our specimens from Amri and kindred sites with those brought to light at Al-Ubaid and Samarra in Mesopotamia, at Susa (I) and Tepeh Musyan in Western Persia and at Shahr-i-sokhta and other sites in Sistan.² The pale-coloured 'geometric' pottery of Sind (e.g., of Amri, Chauro and Ghazi Shah) can be directly correlated with these foreign potteries, and it shows affinity to Mesopotamian wares in a much greater measure than is shown by the potteries of Harappa and Mohenjo-daro.

But do these analogies prove an actual connection, cultural as well as racial, between Sind and the western countries? There is no doubt whatsoever that a particular form of decorative art, as illustrated by the 'Amri' pottery, travelled from one country to another during the Pre-Indus or Early Indus period. Commercial intercourse, such as that attested by the discovery of the Indus seals in Persia and Mesopotamia, would not alone suffice to explain this circumstance. Nor would it explain adequately the occurrence of a figure closely resembling the Sumerian Hero-god Eabani on some of the Indus seals unearthed at Mohenjo-daro. The people themselves must have migrated, carrying with them their own cults and traditions, and also the particular mode of vase-painting to which they had been hitherto accustomed, reminiscences of which are preserved in some of the objects discovered in Sind.³ But it is not easy to decide whether the migration started from the East or from the West. As regards the Indus people—those who inhabited Harappa and Mohenjo-daro, it cannot be said at once that they came from outside India, although some of their objects certainly show points of technical resemblance with those of Persia, Mesopotamia and Transcaspiia of the Chalcolithic period.⁴ The household articles, and the arts and architecture of the Indus people, have a distinct stamp of individuality, which favours the conclusion that whatever be their ultimate origin they must have settled in India for centuries, and that it was here that their civilization reached its final stage of development. In this connection we must not forget that the earlier wares of Sind exhibit more foreign elements than the pottery of Harappa and Mohenjo-daro, and at these two sites such elements as the figures of the elephant and the humped bull (*Bos Indicus*) appearing on the seals are so well established that the *essentially Indian* character of the culture which they represent cannot be denied. This thoroughly Indian technique is also probably indicative of a *later age*, provided it can be proved that the people originally migrated from the west. Indeed, the presumption of a migration from the western highlands in the Pre-Mohenjo-daro period is strengthened

¹ Pumpelly, *Explorations in Russian Turkestan*, Vol. I, p. 135, figs. 120 and 121; and p. 136, figs. 122, 126, 127 and 131.

² Above, pp. 27-28, 85, 94-95. Prof. Gordon Childe compares them, in style and technique, with the Jemdet Nasr pottery which is not yet published. *Loc. cit.*, p. 790. The affinity of 'the Amri Ware' to some of the potteries discovered in Baluchistan and Sistan was first suggested in my Departmental notes the substance of which has appeared in *India in 1929-30* (p. 353) and *India in 1930-31* (pp. 484-85), published by the Government of India in 1931 and 1932 respectively.

³ Cf. *Mohenjo-daro*, Vol. I, pp. 103-5, and Mackay, *Antiquity*, 1931, pp. 459-73; *ibid.*, 1932, p. 356.

⁴ Cf. above, pp. 37-38.

by a consideration of the ibex figure appearing on certain objects. It is represented on some of the seals and pottery at Harappa and Mohenjo-daro, and also on a seal from Chāñhu-daro which is to the east of the Indus. But the animal does not belong at all to the Indus plain. The distribution of the ibex, whose males have 'scimitar-shaped horns curved backwards,' is important. It 'inhabits barren rocky hills in herds' in Baluchistan and Western Sind, but 'does not occur east of the Indus.'¹ It is represented *in herds* on the pottery of Susa and Musyan in Persia and of the Makran and Jhalawan Districts of Baluchistan (*e.g.*, at Kulli and Mehi), and its occurrence in identical setting on the pottery of the hilly region of Western Sind is attested by the present discoveries.² In this chain of evidence, leading us from Persia to the valley of the Indus, we should probably recognize a proof of the migration of an ibex-knowing people from beyond the western borderland of Sind.

Incidentally, the ancient lines of communication between Sind and the outer world in prehistoric antiquity engage our attention. The route connecting Southern Sind with Persia lay, of course, through Makran and the Las Bela State of Baluchistan which could be reached by way of Karachi, across the Hab river. I have shown³ that this route, and its further continuation, *via* Karachi, to Tatta and onwards, must have been followed by the Arab invader Muhammad Kasim in the 8th century A.D. And there are reasons to believe that in his return journey from India, Alexander the Great followed a track across the Las Bela State, although the actual location of this route is not yet finally settled. As regards Baluchistan, it has two principal routes communicating with Sind. The Brahuis and the Baluchis migrate in considerable numbers to the Lower Indus Valley every year to earn their livelihood. Most of these nomadic visitors enter Sind through the Mula pass, and following the track to Johi in Larkana District pass on to the vicinity of Lake Manchhar. This route was followed by Masson in his journey from Kalat to Karachi. There is also another route which is frequently taken by caravans. It passes through Lak Garre near Kathrach, and next through Lak Phusi and Lak Rohel, finally reaching Sind by way of Pandi Wahi and Tando Rahim Khan. Along the bed of the Nari river, at Pandi Wahi, there is a path for camel traffic leading to the above-mentioned *Laks* or passes, which form the most accessible lines of communication. Through this route the dwarf palm (*Pish*) of Central and Lower Jhalawan is imported to Tando Rahim Khan and other marts of Sind.⁴ The discovery of prehistoric sites at both Tando Rahim Khan and Pandi Wahi, and of other stations of this age all along the route, *via* Lake Manchhar and the Baran and Mol valleys, up to Karachi, proves that the lines of communication anciently adopted must have been identical with these. The people proceeding to and from the Indus valley had thus the option of one or the other of these two routes. The openings in the mountain barriers, through which they lie, must have served as permanent

¹ Blanford, *Fauna of British India, Mammalia*, p. 503.

² Above, pp. 130, 137.

³ Above, pp. 45-46.

⁴ *Baluchistan District Gazetteer Series*, Vol. VI, pp. 321, 323, 334; *ibid.*, Vol. VIII, pp. 226-227.

gateways that have remained immune to the successive waves of political and administrative changes throughout the ages.

A degenerate and, therefore, a late phase of Indus is illustrated by potteries discovered at the upper levels of Jhukar and Lohumjo-daro, and at certain sites brought to light on Lake Manchhar. At Jhukar and Lohumjo-daro, the old black-on-red technique continued, but in a modified style, and a number of new patterns were also evolved. A noteworthy feature is the reappearance of the bichrome style, although this new pottery differs widely from the earlier fabric in type as well as design. It is either of terracotta or pale buff colour representing a coarse ware, on which the decoration is altogether poor and the number of designs extremely limited. The style can be further studied at the lake-site of Trihni, in its characteristic schematized rosettes. Here, the black-on-red pottery is totally absent, although there are other links connecting this phase with Indus. Side by side with this painted ware there was prevalent a type of pots with incised strokes at the shoulder, some examples of which come also from the latest levels of Mohenjo-daro.

In course of time, the chalcolithic civilization of Sind seems to have passed into a phase when the red ware was replaced by a kind of black ware with incised patterns. It has been found at Jhangar near Lake Manchhar, and also probably at the latest levels of Mohenjo-daro. At Jhangar, painted pottery is not altogether absent, but the number of specimens recovered is very small, and the patterns depicted thereon are just a few. The incised black pottery has many points of resemblance with that recently discovered at Huttanahalli near Bangalore in the Madras Presidency, which dates from the Early Iron age. The characteristic type of the black pottery of Jhangar was the 'bell-beaker', like that of the Danubian civilization of Europe. This, however, does not necessarily imply that the Danubian had really any connection with the black-ware culture of Sind. In any case, Jhangar illustrates an era of deterioration in vase-painting, which has a great significance; for, with the disappearance of the vase-painters we lose the thread of the civilization we have been following so far, and from this point onward, up to the rise of Buddhism in Northern India, it is impossible yet to bridge the gulf by archaeological data.

¹ Since this Memoir was sent to press, Prof. H. Frankfort of Amsterdam has published a very instructive and illuminating paper dealing with the close affinity of the Indus civilization with those of the Ancient Near East (*Annual Bibliography of Indian Archaeology for the year 1932*, Leyden, 1934, pp. 1-12). He draws interesting parallels between some of the typical finds of Mohenjo-daro and those excavated by him in the Akkadian city of Tell Asmar (2500 B.C.).

APPENDIX A.—IDENTIFICATION OF ANIMAL AND HUMAN REMAINS

1. ANIMAL REMAINS

By

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The collection of animal remains on which the present report is based was made by Mr. N. G. Majumdar, in the course of preliminary excavations carried out by him at certain chalcolithic sites in Sind, in the Districts of Larkana and Karachi, during the season 1930-31.

The number of animal remains obtained in the course of these explorations is very small, and unfortunately most of them are in a very fragmentary condition. The cattle bones of this collection belong mostly to young animals, and consist of fragments of long bones, with, in a few cases, bits of the lower jaws, ribs, vertebrae, pectoral and pelvic girdles and some limb bones. None of the bones are of any use for taking comparative measurements, and unfortunately there are no complete or fragmentary skulls in the collection. The bones are apparently contemporaneous in age with those excavated from Mohenjo-daro and Harappa, but are in a better state of preservation and not so strongly infiltrated with gypsum. The chief interest of the collection lies in the find of a number of almost complete sepia—or cuttle-bones, which were found inside two large pottery jars in the hillock Othmanjo-Buthi, Karachi District. It has been possible to identify these specifically, and at the end of this report I have added a note about the local names and uses of the cuttle-bone.

In view of the small and fragmentary collection I do not propose to deal with it on the lines of my report on the Animal Remains from Harappa, but give below a short descriptive list of the remains from each respective site, with such additional remarks as are necessary. The more important finds are illustrated in Pl. XLII. For information relating to the sites, depths of the finds, associated objects, etc., I am indebted to Mr. Majumdar.

*Site Dm.*¹—Six miles south of Jhangar in the Sehwan Taluka of Larkana District, in chambers on the surface of a flat rocky ledge by the side of Damb Buthi Hill. The bones were found in yellow earth with human skeletal remains, painted pottery and chert flakes, about one foot below the surface. There are reasons to think that the chambers were used for burial purposes (see *ante*, p. 115). The human bones are described by Dr. Guha on pp. 157-58 below.

Dm 91. Two fragments of the scapula of a young bovine, probably *Bos indicus* Linn.

*Site Ot.*²—A hillock called Othmanjo-Buthi on the river Baran in Kohistan, Karachi District. The bones are from two large pottery jars found *in situ* about 1' 5" below surface, in chambers on the top of the hillock. The associated objects include chert flakes, painted potsherds and a copper chisel.

Ot 51, 63. Three sepia-shells of *Sepia aculeata* d'Orbigny (Pl. XLII, figs. 3-8). In

Ot 51 are also included the right ulna fragment and a fragmentary rib of *Bos indicus* Linn. These bones are apparently of a half-grown animal.

¹ See *ante*, p. 114.

² See *ante*, p. 140.

*Site Pl.*¹—Pokhran Landi, Kohistan, Karachi District; from a chamber about one foot below surface, in a large pottery jar. Other objects found from the side of the jar comprised painted potsherds, chert flakes, and fragments of perforated pottery vase and dish with incised strokes, the last two objects resembling those discovered at Harappa and Mohenjo-daro.

Pl 35. Fragment of right upper jaw with the teeth Pm 3 and M 1, M 2 of the Domestic goat—*Capra aegagrus* Gmelin race *indicus* Prashad.² The jaw fragment appears to be that of a young animal and the teeth are not greatly worn. I reproduce a photograph of this fragment (Pl. XLII, fig. 10).

*Site Pw.*³—Pandi Wahi, in Johi Taluka, Larkana District. In a pottery jar found in an excavated pit, 5' 3" below the base of a 21 feet high mound.

Pw 291. Fragments of the right pelvic girdle of the Domestic goat—*Capra aegagrus* Gmelin race *indicus* Prashad.

*Site Jh.*⁴—Two miles south of Jhangar, Larkana District, in a mound 17 feet high. The mound yielded a class of grey incised ware together with chert flakes. The bones Jh (b) were found at a level of 1' 7" and Jh (a) at a level of 4' above the base of the mound, and close to them was recovered a copper awl. The site, according to Mr. Majumdar, represents 'one of the latest phases of the Indus Civilization.'

Jh (a). Distal end of left humerus and fragmentary right ramus of lower jaw with broken premolar and molar teeth of a young *Bos indicus* Linn. I reproduce a photograph of this specimen (Pl. XLII, fig. 9).

Jh (b). (i) Fragment of right ramus of lower jaw with Pm 1, 2 and a loose M 2; 4 fragments of lumbar and caudal vertebrae and ribs; 4 fragments of right and left scapula; 2 distal fragments of left radius and 1 fragment of left radius; 1 fragmentary 3rd-4th metacarpal; a bit of right pelvic girdle; distal fragment of femur and left tibia; 6 fragmentary metatarsals; 3 fragments of calcaneum and 1 right navicular, all of young cattle—*Bos indicus* Linn., and (ii) 1 right second upper molar tooth of the Domestic goat—*Capra aegagrus* Gmelin race *indicus* Prashad. A photograph of the tooth is reproduced in Pl. XLII, fig. 11.

Note on Cuttle-bones.

Certain families of the Cephalopoda have a well developed internal shell. In the family Sepiidae the greater part of the shell is calcareous and is composed of parallel layers united together by short pillars of calcareous substance; its general structure is stratified and alveolar.⁵ The sepia shell, cuttle-bone, sepion, Sepiostaire, *Os sepia* or *Schulp*, as it is variously termed, is an ovoidal structure of a whitish or creamy colour. Sepia shells are commonly found on the sea-shore where they are thrown up by the waves and hence the popular names *Samudrar jhag* (Punjab) or *Samudrer phenā* (Bengal), both of which mean sea-foam.

Unfortunately there are very few references in literature regarding the use of the cuttle-bone, but Meyer⁶ remarks, "Der Schulp dient als Poliermittel, als Material zum Formensch-

¹ See *ante*, p. 128.

² I have dealt with in detail the question of the nomenclature of the Indian Domestic Goat in my report (now in the press) on the Animal Remains from Harappa.

³ See *ante*, p. 91.

⁴ See *ante*, p. 68.

⁵ For a detailed account of the structure of the shell of *Sepia* reference may be made to Appellöf, A.—*K. Svensk. Vet.-Akad., Handl. XXV, No. 5, pp. 1-53, pls. i-xii* (Stockholm, 1893).

⁶ Meyer, W. Th.—*Tintenfische*, p. 122 (Leipzig, 1913). See also *Century Dictionary*, II, p. 1418 (1899).

meiden für Goldschmeide, als Kalklieferant für Vögel usw." In various parts of India also the cuttle-bone is used for polishing wood, paints, etc., in the same way as pumice stone, while rubbed into a paste with water it is applied as a palliative or absorbent against prickly heat, mumps, etc. It is given to canaries and other birds as food, and in small quantities is also used for making crisp certain types of cakes in the Punjab.

All the three specimens of cuttle-bone from Othmanjo-Buthi are incomplete. The chitinous border, the thin calcareous wings and the rostrum are absent and it is not possible to estimate their size exactly. The ventral surface, apparently as a result of rubbing or grinding, appears much coarser, but the granulation on the dorsal surface is well preserved. Two of these specimens show numbers of deep pits on the ventral surface and it is likely that these were produced by the beaks of birds picking out bits of shells from such areas. I have compared the specimens with complete Sepiostaires of various species of the genus *Sepia* Linn. of Indian waters and have no doubt that the Othmanjo-Buthi specimens are to be referred to *Sepia aculeata* d'Orbigny.¹ I reproduce photographs of the three specimens and of a complete shell from the Andamans in the Indian Museum collection (Pl. XLII, figs. 1-8).

Since the above was written I have received the following note by Dr. Girindra Nath Mukherjee, M.D., F.A.S.B., through Mr. Majumdar:—

Cuttle-bone in the Āyurveda.

The bone of the cuttle fish (Sepiostaire) is called *samudra-phena* in the Āyurveda. Its synonyms, e.g., *abdhi-kupha*, *arṇavaḥ-mala*, *hiṇḍīra*, *abdhi-hiṇḍīra*, etc., are given by Sanskrit Lexicographers (see *Sabdakalpadrūma*, s.v. *samudra-phena*). It is used as a remedial agent in the Āyurvedic system and described as antacid, astringent and local sedative. It was used for various diseases of the eye in ancient times. Sūśruta recommends its use in the treatment of ophthalmia caused by deranged bile and blood (*Sūśruta-saṁhitā*, Uttara-sthāna, Chs. X, XII, XVI) and as an ingredient of collyrium for improving the eye sight (*ibid.*, Chs. XVII, XVIII). The latter is prescribed also by Charaka. Cuttle-bone was used in the composition of the collyrium stick known as the *sukhāvātī vartī* and the *dr̥ik-prasādanī vartī* or the sight-restorer in the treatment of cataract (*Charaka-saṁhitā*, Chikitsā-sthāna, Ch. XXVI). It was commonly prescribed by later authors in the different diseases of ear, eye, throat and skin. It is easily pulverised and used as a dusting powder to relieve ear-ache. The scrapings of the bone are boiled in sesamum oil, and this medicated oil is employed for dropping into the ear in otorrhoea. A thin paste made of cuttle-bone and rock-salt in rose water is used as an eye drop in conjunctivitis. Its paste made with lime juice is supposed to be efficacious in itches, and with rose water in prickly heat. Pulverised, it is an ingredient of tooth-powder. The juice of *Hilamochikā* (*Enhydra fluctuans* Lour) mixed with the powder of cuttle-bone is recommended for removing the unpleasant odour of sweat and is used in many skin diseases (*Vanashadhi-darpana*, II, 363). Internally, it is used as an appetiser and enters into the composition of many well-known digestive salts, and is further recommended in cases of obesity.

2. HUMAN REMAINS

By

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Anthropologist, Zoological Survey of India.

The human bones marked Dm 91 were found by Mr. Majumdar in course of some trial excavations carried out by him in 1930-31 at Damb Buthi near Jhangar in the Larkana District of Sind. These were lying mixed up with painted pottery etc. in what appear to be burial

¹ For earlier literature on this species see Massey, A. L.—*Rec. Ind. Mus.* XII, p. 223 (1916).

chambers on a flat rocky ledge by the side of the Damb Buthi Hill.¹ The collection consists of broken fragments of skulls and long bones belonging to both adults and children. As the bones are extremely fragmentary no conclusions of scientific interest can be deduced from them and their identification in every instance is not beyond doubt. As far as can be ascertained the bones are as follows:—

DM 91—

- (a) 27 fragments of skulls, belonging at least to two individuals, one male adult having very thick cranial bones and the other probably female with thin bones.
- (b) Two broken pieces of the shaft of humerus.
- (c) Five pieces of the shaft of radius.
- (d) Three fragments of ulna (?).
- (e) Fragments of three phalanges.
- (f) Two broken pieces of the crest of ilium.
- (g) Fourteen fragments of femur.
- (h) Three pieces of the shaft of tibia.
- (i) Two pieces of the shaft of fibula.
- (j) Three fragments of metatarsal bones.

DM 22 and 115—

- (a) The proximal extremity of the right ulna of a child of about 7 years.
- (b) Broken part of the phalanx of a child.

Besides the above, there are numerous pieces of long bones, of a too fragmentary nature to be identified.

Jh (b)—Among the animal bones found in a mound 2 miles south of Jhangar,² in the Larkana District, there is the broken head of the right femur of a human being.

¹ See *ante*, p. 115.

² See *ante*, p. 68, and Dr. Prashad's note, *ante*, p. 156.

APPENDIX B.—LIST OF FIGURES IN PLATES XIII-XLI

[The figures in italics indicate the serial numbers in each particular Plate, and those that follow represent the Field numbers of the objects illustrated.]

PLATE XIII.

POTTERY, IRON IMPLEMENTS, AND OTHER OBJECTS OF THE INDO-SASSANIAN PERIOD FROM JHUKAR.

1 Jk 129; 2 Jk 31; 3 Jk 92; 4 Jk 241; 5 Jk 254; 6 Jk 243; 7 Jk 8; 8 Jk 99; 9 Jk 100; 10 Jk 98; 11 Jk 817.

References: pp. 15-18.

PLATE XIV.

COPPER COINS, SEALINGS, POTTERY, ETC., OF THE INDO-SASSANIAN PERIOD FROM JHUKAR.

1 Jk 585; 2 Jk 533; 3 Jk 763; 4 Jk 457; 5 Jk 777; 6 Jk 756; 7-10 Jk (coins); 11 Jk 69; 12 Jk 188; 13 Jk 252; 14 Jk 432; 15 Jk 131; 16 Jk 339; 17 Jk 398; 18 Jk 813; 19 Jk 526; 20 Jk 169; 21 Jk 143; 22 Jk 433; 23 Jk 151; 24 Jk 34; 25 Jk 507; 26 Jk 816; 27 Jk 71.

References: pp. 16-18.

PLATE XV.

POTTERY AND TERRACOTTA OF THE CHALCOLITHIC AGE FROM JHUKAR.

1 Jk 564; 2 Jk 714; 3 Jk 653; 4 Jk 655; 5 Jk 659; 6 Jk 640; 7 Jk 658; 8 Jk 579; 9 Jk 580; 10 Jk 639; 11 Jk 576; 12 Jk 574; 13 Jk 709; 14 Jk 710; 15 Jk 682; 16 Jk 541; 17 Jk 541; 18 Jk 604; 19 Jk 501; 20 Jk 552; 21 Jk 512; 22 Jk 665; 23 Jk 649; 24 Jk 593; 25 Jk 667; 26 Jk 531; 27 Jk 512; 28 Jk 343; 29 Jk 664; 30 Jk 284; 31 Jk 262; 32 Jk 605; 33 Jk 493; 34 Jk 512.

References: pp. 11-15.

PLATE XVI.

POTTERY, ETC., FROM JHUKAR, AMRI AND THARRO HILL.

1 Am 71; 2 Am 58; 3 Am 7; 4 Am 68; 5 Am 21; 6 Am 49; 7 Am 39; 8 Am 47; 9 Am 32, 78; 10 Am 41; 11 Am 14; 12 Am 34; 13 Am 3, 4, 6; 14 Jk 515; 15 Jk 547; 16 Jk 475; 17 Jk 489; 18 Jk 490; 19 Jk 474; 20 Jk 622; 21 Jk 685; 22 Jk 549; 23 Jk 603; 24 Th 9; 25 Th 7.

References: Am, pp. 32-33; Jk, pp. 13-15; Th, p. 21.

PLATE XVII.

SEALS, BEADS, BANGLES, ETC., FROM JHUKAR, AMRI AND CHĀNĀRU-DABO.

1 Jk 529; 2 Jk 557; 3 Jk 644; 4 Jk 602; 5 Jk 644; 6 Jk 644; 7 Jk 584; 8 Jk 663; 9 Jk 553; 10 Jk 559; 11 Jk 521; 12 Am 218; 13 Am 467; 14 Am 464; 15 Am 180; 16a-b Ch 309; 16c Ch 309; 17-19 Ch 72; 20 Ch 364; 21 Ch 366; 22 Ch 69; 23 Ch

363; 24 Ch 417; 25 Ch 73; 26 Ch 269; 27 Ch 67; 28 Ch 67; 29 Ch 456; 30 Ch 460; 31 Ch 310; 32 Ch 371; 33 Ch 368; 34 Ch 458; 35 Ch. 484; 36 Ch 190; 37 Ch 437; 38 Ch 372; 39 Ch 358; 40 Ch 358; 41 Ch 412; 42 Ch 204; 43 Ch 125; 44 Ch 248; 45 Ch 60; 46 Ch 247; 47 Ch 459; 48 Ch 332; 49 Ch 263.

References: Jk, pp. 12-13; Am, pp. 32, 33; Ch, pp. 40, 41, 42

PLATE XVIII.

PAINTED POTTERY FROM AMRI AND THARRO HILL.

1 Am 219; 2 Am 258; 3 Am 259; 4 Am 321; 5 Am 442; 6 Am 384; 7 Am 134; 8 Am 394; 9 Am 523; 10 Am 150; 11 Am 406; 12 Am 390; 13 Am 149; 14 Am 140; 15 Am 144; 16 Am 146; 17 Am 398; 18 Am 264; 19 Am 367; 20 Am 389; 21 Am 313; 22 Am 148; 23 Am 443; 24 Am 288; 25 Am 133; 26 Am 135; 27 Am 369; 28 Am 440; 29 Am 351; 30 Am 299; 31 Am 522; 32 Am 260; 33 Th 53; 34 Th 54.

References: Am, pp. 29-32; Th, pp. 20, 21.

PLATE XIX.

STONE OBJECTS FROM JHUKAR, THARRO HILL, AMRI, CHĀNHU-DARO AND OTHER SITES.

1 Jk 629; 2 Jk 575; 3 Jk 652; 4 Jk 467; 5 Jk 76; 6 Jk 76; 7 Jk 676; 8 Jk 109; 9 Jk 569; 10 Jk 556; 11 Jk 467; 12 Jk 524; 13 Jk 601; 14 Am 345; 15 Am 483; 16 Am 488; 17 Am 250; 18 Am 162; 19-22 Th; 23 Ch 439; 24 Ch 383; 25 Ch 355; 26 Ch 192; 27 Ch 394; 28 Ch 202; 29 Ch 74; 30 Ch 411; 31 Ch 339; 32 Ch 205; 33 Ch 303; 34 Ch 395; 35 Ch 482; 36 Ch 373; 37 Ta 1; 38 Lr 66; 39 Al 90; 40 Ot 58.

References: Jk, pp. 13, 15; Am, pp. 32, 33; Th, p. 21; Ch, p. 44; Ta, p. 105; Lr, p. 76; Al, p. 108; Ot, p. 141.

PLATE XX.

PAINTED POTTERY FROM CHĀNHU-DARO.

1 Ch 409; 2 Ch 144; 3 Ch 230; 4 Ch 342; 5 Ch 87; 6 Ch 207; 7 Ch 107; 8 Ch 289; 9 Ch 243; 10 Ch 157; 11 Ch 234; 12 Ch 210; 13 Ch 214; 14 Ch 101; 15 Ch 89; 16 Ch 81; 17 Ch 145; 18 Ch 10; 19 Ch 286; 20 Ch 343; 21 Ch 287; 22 Ch 25; 23 Ch 14; 24 Ch 218; 25 Ch 284; 26 Ch 448; 27 Ch 445 (unpainted); 28 Ch 401.

References: pp. 42-43.

PLATE XXI.

POTTERY AND TERRACOTTA OBJECTS FROM CHĀNHU-DARO, AMRI AND JHUKAR.

1 Ch 239; 2 Ch 179; 3 Ch 424; 4 Ch 43; 5 Ch 369; 6 Ch 376; 7 Ch 46; 8 Jk 513; 9 Jk 513; 10 Jk 513; 11 Jk 804; 12 Jk 513; 13 Jk 513; 14 Jk 582; 15 Jk 543; 16 Ch 252; 17 Am 166; 18 Ch 330; 19 Ch 319; 20 Ch 298; 21 Ch 206; 22 Ch 328; 23 Ch 28; 24 Ch 34; 25 Ch 425; 26 Ch 171; 27 Ch 487; 28 Am 537; 29 Ch 120; 30 Ch 235; 31 Ch 35; 32 Ch 468.

References: Ch, pp. 41-42; Jk, pp. 11, 12; Am, pp. 32, 33.

PLATE XXII.

PAINTED POTTERY, TERRACOTTA AND OTHER OBJECTS FROM LOHUMJO-DARO.

1 Lh 53; 2 Lh 162; 3 Lh 67; 4 Lh 167; 5 Lh 164; 6 Lh 118; 7 Lh 226; 8 Lh 211; 9 Lh 145; 10 Lh 13; 11 Lh 163; 12 Lh 166; 13 Lh 112; 14 Lh 137; 15 Lh 151; 16 Lh 104; 17 Lh 121; 18 Lh 92; 19 Lh 111; 20 Lh 75; 21 Lh 66; 22 Lh 86; 23 Lh 191; 24 Lh 90; 25 Lh 146; 26 Lh 136; 27 Lh 194; 28 Lh 39; 29 Lh 188; 30 Lh 97; 31 Lh 119; 32 Lh 178; 33 Lh 5; 34 Lh 124; 35 Lh 212; 36 Lh 213; 37 Lh 168; 38 Lh 229; 39 Lh 82; 40 Lh 169; 41 Lh 81; 42 Lh 30; 43 Lh 170; 44 Lh 114; 45 Lh 36; 46 Lh 6; 47 Lh 140; 48 Lh 201; 49 Lh 177; 50 Lh 185; 51 Lh 116; 52 Lh 175; 53 Lh 186.

References: pp. 52-58.

PLATE XXIII.

PAINTED POTTERY FROM TRIHNI, SHAH HASAN AND LAKHIYO.

1 Tr 106; 2 Tr 111; 3 Tr 174; 4 Tr 102; 5 Tr 69; 6 Tr 204; 7 Tr 53; 8 Tr 3; 9 Tr 58; 10 Tr 104; 11 Tr 203; 12 Tr 1; 13 Tr 55; 14 Tr 73; 15 Tr 66; 16 Tr 198; 17 Tr 103; 18 Tr 47; 19 Tr 68; 20 Tr 116; 21 Tr 50; 22 Tr 46; 23 Tr 150; 24 Tr 151; 25 Tr 113; 26 Tr 134; 27 Tr 177; 28 Tr 109; 29 Tr 149; 30 Tr 7; 31 Tr 48; 32 Tr 59; 33 Tr 105; 34 Tr 172; 35 Tr 49; 36 Sh 57; 37 Sh 34; 38 Sh 5; 39 Sh 39; 40 Sh 43; 41 Sh 4; 42 Sh 33; 43 Lk 37; 44 Lk 52; 45 Sh 56; 46 Sh 30; 47 Sh 41; 48 Lk 34; 49 Lk 23.

References: Tr, pp. 70-72; Sh, p. 73; Lk, p. 76.

PLATE XXIV.

PAINTED POTTERY FROM LOHRI, ALI MURAD AND DAMB BUTHI.

1 Dm 11; 2 Al 20; 3 Al 67; 4 Al 8; 5 Dm 7; 6 Dm 8; 7 Al 34; 8 Al 49; 9 Al 3; 10 Dm 12; 11 Dm 14; 12 Al 31 & 32; 13 Al 33; 14 Lr 138; 15 Lr 137; 16 Al 35; 17 Al 50; 18 Lr 130; 19 Lr 153; 20 Lr 197; 21 Lr 10; 22 Lr 161; 23 Lr 218; 24 Lr 127; 25 Lr 163; 26 Lr 196; 27 Lr 134; 28 Lr 225; 29 Lr 126; 30 Lr 124; 31 Lr 226-227; 32 Lr 39; 33 Lr 214; 34 Lr 224.

References: Dm, p. 120; Al, pp. 106-107; Lr, pp. 73-75.

PLATE XXV.

FUNERARY POTTERY AND OTHER OBJECTS FROM DAMB BUTHI.

1 Dm 95; 2 Dm 50; 3 Dm 102; 4 Dm 62; 5 Dm 78; 6 Dm 105; 7 Dm 97; 8 Dm 108; 9 Dm 100; 10 Dm 98; 11 Dm 46; 12 Dm 112; 13 Dm 107; 14 Dm 99; 15 Dm 93; 16 Dm 106; 17 Dm 96; 18 Dm 111; 19 Dm 101; 20 Dm 109; 21 Dm 104; 22 Dm 110; 23 Dm 94; 24 Dm 92; 25 Dm 103; 26 Dm 29; 27 Dm 23; 28 Dm 30; 29 Dm 26; 30 Dm 28; 31 Dm 22; 32 Dm 25; 33 Dm 24; 34 Dm 89; 35 Dm 115; 36 Dm 116; 37 Dm 117; 38 Dm; 39-40 Dm 126a, b; 41 Dm 114; 42 Dm 118; 43 Dm 121.

References: pp. 117-119, 115.

PLATE XXVI.

PAINTED POTTERY FROM GHAZI SHAH.

1 Gs 100; 2 Gs 104; 3 Gs 220; 4 Gs 80; 5 Gs 161; 6 Gs 71; 7 Gs 102; 8 Gs 7;
9 Gs 101; 10 Gs 187; 11 Gs 145; 12 Gs 165; 13 Gs 159, Gs 151; 14 Gs 36; 15 Gs 19;
16 Gs 6; 17 Gs 81; 18 Gs 103; 19 Gs 133; 20 Gs 213; 21 Gs 195; 22 Gs 162; 23 Gs
78; 24 Gs 243; 25 Gs 157; 26 Gs 119; 27 Gs 35; 28 Gs 32; 29 Gs 234; 30 Gs 215;
31 Gs 141; 32 Gs 296; 33 Gs 233; 34 Gs 134; 35 Gs 117.

References: pp. 95-99.

PLATE XXVII.

PAINTED POTTERY FROM GHAZI SHAH.

1 Gs 312; 2 Gs 287; 3 Gs 276; 4 Gs 278; 5 Gs 272; 6 Gs 260, Gs 263; 7 Gs 46;
8 Gs 84; 9 Gs 310; 10 Gs 315; 11 Gs 177; 12 Gs 307; 13 Gs 226; 14 Gs 93; 15 Gs 175;
16 Gs 299; 17 Gs 214; 18 Gs 8; 19 Gs 277; 20 Gs 289; 21 Gs 281; 22 Gs 178; 23 Gs
309; 24 Gs 317; 25 Gs 194; 26 Gs 86; 27 Gs 332; 28 Gs 184; 29 Gs 290; 30 Gs 202;
31 Gs 331; 32 Gs 180; 33 Gs 311; 34 Gs 323; 35 Gs 204; 36 Gs 203; 37 Gs 52; 38
Gs 146; 39 Gs 182; 40 Gs 219; 41 Gs 174; 42 Gs 269; 43 Gs 251; 44 Gs 285; 45 Gs
188; 46 Gs 255; 47 Gs 166; 48 Gs 238; 49 Gs 244; 50 Gs 245; 51 Gs 246; 52 Gs 235;
53 Gs 163.

References: pp. 95-101.

PLATE XXVIII.

PAINTED POTTERY FROM PANDI WAHL.

1 Pw 119 a; 2 Pw 82; 3 Pw 107; 4 Pw 79; 5 Pw 32; 6 Pw 27; 7 Pw 287; 8 Pw
16; 9 Pw 265, Pw 271; 10 Pw 92; 11 Pw 149; 12 Pw 236; 13 Pw 259; 14 Pw 263;
15 Pw 28; 16 Pw 87; 17 Pw 273; 18 Pw 151, Pw 157; 19 Pw 154; 20 Pw 272; 21
Pw 148; 22 Pw 165; 23 Pw 290; 24 Pw 34; 25 Pw 35; 26 Pw 18; 27 Pw 26; 28 Pw
262; 29 Pw 285; 30 Pw 112; 31 Pw 25; 32 Pw 254; 33 Pw 155; 34 Pw 264; 35 Pw
279; 36 Pw 270; 37 Pw 258; 38 Pw 90; 39 Pw 274; 40 Pw 294; 41 Pw 191; 42 Pw
289; 43 Pw 133; 44 Pw 115; 45 Pw 277; 46 Pw 276; 47 Pw 278.

References: pp. 109-112.

PLATE XXIX.

PAINTED POTTERY FROM PANDI WAHL, BANDHNI, POKHRAN, KOHRAS, KHAJUR, OTHMAN
BUTHI AND ARABJO THANA.

1 Ot 25; 2 Ot 21; 3 Bn 52; 4 Bn 48; 5 Bn 34; 6 Bn 26; 7 Ko 46; 8 Ko 67; 9
Ot 56; 10 Ot 16; 11 Ot 27; 12 Bn 15; 13 Bn 38; 14 Kh 18; 15 Bn 42; 16 Bn 14;
17 Ar 16; 18 Ar 44; 19 Bn 53; 20 Bn 46; 21 Bn 50; 22 Pl 21; 23 Ar 30; 24 Kh 25;
25 Pl 18; 26 Bn 5; 27 Bn 33; 28 Pl 16; 29 Ar 36; 30 Kh 1; 31 Ko 12; 32 Pl 2; 33
Pl 1; 34 Pl 19; 35 Ko 58; 36 Pw 282; 37 Pw 187; 38 Pw 36.

References: Ot, pp. 140-141; Bn, pp. 121-122; Ko, p. 134; Kh, p. 135; Ar, p. 136;
Pl, p. 129; Pw, p. 112.

PLATE XXX.

PAINTED POTTERY FROM CHAURO AND TANDO RAHIM KHAN.

1 Cr 75; 2 Cr 81; 3 Cr 22; 4 Cr 24; 5 Cr 98; 6 Ta 41; 7 Ta 3; 8 Ta 24; 9 Ta 21; 10 Cr 65; 11 Cr 97; 12 Cr 84; 13 Cr 96; 14 Cr 92; 15 Ta 10; 16 Ta 23; 17 Ta 34; 18 Ta 6; 19 Cr 69, Cr 73; 20 Cr 51; 21 Cr 27; 22 Cr 60; 23 Cr 76; 24 Cr 57; 25 Cr 79; 26 Ta 9; 27 Ta 43; 28 Ta 16; 29 Cr 6; 30 Cr 17; 31 Ta 46; 32 Ta 7; 33 Ta 11; 34 Ta 29; 35 Cr 89; 36 Cr 21, Cr 25; 37 Cr 95; 38 Cr 16; 39 Cr 38; 40 Ta 2; 41 Ta 37; 42 Ta 15; 43 Cr 61; 44 Cr 29; 45 Cr 91; 46 Cr 82; 47 Ta 25; 48 Ta 5, Ta 12.

References: Cr, pp. 124-125; Ta, pp. 103-105.

PLATE XXXI.

PAINTED AND INCISED POTTERY FROM JHANGAR, AND INCISED POTTERY FROM OTHER SITES.

1 Lh 152; 2 Gs 25; 3 Al 69; 4 Jh 32; 5 Jh 55; 6 Jh 4; 7 Lh 7; 8 Sha 6; 9 Dl 25; 10 Dl 12; 11 Jh 26; 12 Jh 13; 13 Jh 49; 14 Dl 4, Dl 19; 15 Sha 26; 16 Kr 90; 17 Gs 248; 18 Pw 42; 19 Al 91; 20 Jh 9; 21 Jh 14; 22 Jh 48; 23 Jh 38; 24 Jh 43; 25 Jh 56; 26 Jh 40; 27 Jh 21; 28 Jh 17; 29 Jh 30; 30 Jh 31; 31 Jh 41; 32 Jh 18; 33 Jh 12.

References: Lh, pp. 54, 57; Gs, p. 102; Al, p. 107, 108; Jh, pp. 78-79; Sha, pp. 138, 139; Dl, p. 127; Kr, p. 131; Pw, p. 113.

PLATE XXXII.

PAINTED POTTERY FROM KARCHAT, SHAHJO-KOTIRO, DHAL, DISOI AND GORANDI.

1 Kr 8; 2 Kr 30; 3 Kr 52; 4 Kr 49; 5 Kr 24; 6 Kr 99; 7 Kr 27; 8 Kr 31; 9 Kr 45; 10 Kr 20; 11 Kr 18; 12 Kr 102; 13 Kr 107; 14 Kr 32; 15 Kr 110; 16 Kr 100; 17 Kr 11; 18 Kr 23; 19 Kr 56; 20 Sha 34; 21 Sha 38; 22 Dl 13; 23 Bc 2; 24 Sha 46; 25 Gr (b) 4; 26 Sha 31; 27 Di 8; 28 Sha 21; 29 Sha 39; 30 Di 13; 31 Sha 27; 32 Sha 8; 33 Gr (b) 8; 34 Sha 14; 35 Sha 16; 36 Sha 12; 37 Sha 19; 38 Gr (b) 5; 39 Sha 20; 40 Sha 13, Sha 30.

References: Kr, pp. 130-131; Sha, pp. 137-138; Dl, p. 126; Bc, p. 141; Gr (b), p. 106; Di, p. 142.

PLATE XXXIII.

SEAL, BEADS, BANGLES AND MISCELLANEOUS OTHER OBJECTS.

1 Lh 80; 2 Lh 144; 3 Lh 22; 4 Lh 171; 5 Lh 200; 6 Lh 18; 6 a Lh 79; 7 Lh 21; 8 Lh 2; 9 Lh 209; 10 Lh 9; 11 Lh 173; 12 Lh 110; 13 Lh 17; 14 Lh 58; 15 Lh 218; 16 Lh 3; 17 Lh 65; 18 Lh 61; 19 Lh 158; 20 Lh 76; 21 Lh 149; 22 Lh 216; 23 Lh 122; 24 Ln 20; 25 Lh 199; 26 Lh 159; 27 Lh 187; 28 Lk 41; 29 Lk 45; 30 Lk 59; 31 Gs 342; 32 Gs 335; 33 Gs 341; 34 Gs 372; 35 Pw 280; 36 Pw 281; 37 Pw 226; 38 Kr 127; 39 Gs 346; 40 Gs 353; 41 Pw 219; 42 Pw 119; 43 Pw 215; 44 Kr 129; 45 Lk 51; 46 Gs 371; 47 Gs 31; 48 Gs 340; 49 Gs 339; 50 Gs 348; 51 Dl 42; 52 Gr (a) 12; 53 Kr 105; 54 Tr 229; 55 Kr 125; 56 Tr 240; 57 Al 64; 58 Al 26; 59 Al 74; 60 Al 75; 61 Di 52; 62 Di 53; 63 Ar 53; 64 Jh 53; 65 Al 81; 66 Al 25; 67 Al 86; 68 Al 62; 69 Di 51; 70 Kh 29; 71 Ot 57; 72 Sha 33; 73 Bd 1; 74 Bd 2; 75 Bd 3; 76 Bd 4; 77 Bd 5; 78 Bd 6; 79 Bd 7; 80 Bd 8; 81 Lr 141; 82 Lr 173.

References: Lh, pp. 55, 56, 58; Lk, p. 78; Gs, pp. 102, 103; Pw, p. 113; Kr, p. 131; Dl, p. 127; Gr (a), p. 106; Tr, p. 72; Al, pp. 107, 108; Di, p. 142; Ar, p. 136; Jh, p. 79; Kh, p. 135; Ot, p. 141; Sha, p. 139; Bd, pp. 47-48; Lr, p. 75.

PLATE XXXIV.

MISCELLANEOUS POTTERY AND TERRACOTTA OBJECTS.

1 Gs 169; 2 Lk 11; 3 Lk 31; 4 Gs 206; 5 Dm 15; 6 Lk 1; 7 Lk 58; 8 Bd; 9 Kr 72; 10 Lk 6; 11 Lr 18; 12 Lk 12; 13 Gs 193; 14 Gs 173; 15 Al 12; 16 Al 4; 17 Sh 2; 18 Pw 58; 19 Lk 29; 20 Lk 63; 21 Lk 56; 22 Lr 6; 23 Lk 44; 24 Al 30; 25 Al 68; 26 Pw 169; 27 Pw 43; 28 Pw 45; 29 Al 70.

References: Gs, p. 102; Lk, p. 77; Dm, p. 120; Bd, p. 48; Kr, p. 131; Lr, p. 75; Al, pp. 107, 108; Sh, p. 73; Pw, p. 113.

PLATE XXXV.

POTTERY VASES.

1 Gr (a) 4; 2 Gr (a) 9; 3 Ot 64; 4 Ot 48; 5 Jh 1; 6 Gr (a) 6; 7 Pw 40; 8 Pw 41 a; 9 Jk 545; 10 Jh 54; 11 Gr (a) 1; 12 Pw 41; 13 Jk 840; 14 Al 83.

References: Gr (a), pp. 105-106; Ot, pp. 140, 141; Jh, p. 78; Pw, p. 113; Jk, pp. 14, 15; Al, p. 107.

PLATE XXXVI.

POTTERY VASES.

1 Al 71; 2 Al 87; 3 Al 47; 4 Al 72; 5 Al 78; 6 Al 88; 7a Al 40; 7b Al 18; 8 Al 46; 9 Al 45; 10 Al 11; 11 Dm 17; 12 Lh 4; 13 Lh 25; 14 Lh 228; 15 Lh 227; 16 Lh 26; 17 Lk 18; 18 Lk 48; 19 Dl 2; 20 Lr 194; 21 Ta 53; 22 Lh 147; 23 Lh 141; 24 Lh 139; 25 Lk 30; 26 Lk 19; 27 Al 22; 28 Ko 71; 29 Ko 70; 30 Lh 203; 31 Lh 63; 32 Lh 223; 33 Lh 27; 34 Lh 28; 35 Al 73; 36 Al 19; 37 Lh 91; 38 Lh 1; 39 Lh 198; 40 Lh 49; 41 Pl. 22; 42 Al 66.

References: Al, pp. 106, 107; Dm, p. 120; Lh, pp. 54, 56, 57; Lk, p. 76; Dl, p. 127; Lr, p. 75; Ta, p. 105; Ko, p. 134; Pl, p. 129.

PLATE XXXVII.

POTTERY VASES AND OTHER OBJECTS.

1 Ah 43; 2 Ah 42; 3 Dl 3; 4 Kr 65; 5 Kr 63; 6 Kr 91; 7 Kr 91; 8 Sha 41; 9 Sha 59; 10 Gs 284; 11 Gs 171; 12 Gs 283; 13 Pw 59; 14 Pw 39; 15 Pw 184; 16 Pw 21; 17 Pw 193; 18 Sha 70, Sha 71; 19 Sha 9; 20 Sha 36; 21 Gs 232; 22 Gs 1; 23 Pw 195; 24 Pw 194; 25 Pw 182; 26 Dl 1; 27 Gr (a) 8; 28 Gr (a) 14; 29 Gs 3; 30 Gs 33; 31 Pw 183; 32 Ot 61; 33 Ot 49; 34 Gr (a) 13; 35 Gr (a) 2; 36 Gr (a) 3; 37 Gr (a) 2; 38 Gs 222; 39 Gs 247; 40 Ot 59.

References: Ah, p. 139; Dl, pp. 126, 127; Kr, p. 131; Sha, p. 138; Gs, pp. 99, 101; Pw, pp. 113-114; Gr (a), pp. 105, 106; Ot, p. 141.

PLATE XXXVIII.

TYPES OF POTTERY FROM AMRI AND OTHER SITES.

1 Am 313; 2 Am 525; 3 Am 146; 4 Am 258; 5 Am 523; 6 Am 143; 7 Am 134; 8 Am 522; 9 Am 288; 10 Am 440; 11 Am 260; 12 Gs 310; 13 Gs 243; 14 Gs 277; 15 Dm 93; 16 Dm 89; 17 Th 23; 18 Pl 12; 19 Ot 14; 20 Lr 227; 21 Kh 8; 22 Ko 72; 23 Ta 50; 24 Th 53; 25 Lr 14; 26 Ta 48.

References: Am, p. 28, 29-32; Gs, pp. 98, 101; Dm, pp. 118, 119; Th, p. 21; Pl, p. 128; Ot, p. 140; Lr, pp. 67, 74; Kh, p. 135; Ko, p. 134; Ta, pp. 86, 105.

PLATE XXXIX.

TYPES OF POTTERY FROM CHAUBO AND PANDI WAHL.

1 Cr 91; 2 Cr 38; 3 Cr 82; 4 Cr 22; 5 Cr 16; 6 Pw 28; 7 Pw 26; 8 Pw 274; 9 Pw 276; 10 Pw 277; 11 Pw 290; 12 Pw 285; 13 Pw 16; 14 Pw 286; 15 Pw 283.

References: Cr, pp. 123, 124-125; Pw, pp. 95, 109-112.

PLATE XL.

CHERT IMPLEMENTS.

1 Lh 109; 2 Lh 59; 3 Lh 220; 4 Pw 216; 5 Pw 196; 6 Pw 1; 7 Pw 198; 8 Al 84c; 9 Al 27; 10 Al 28; 11 Lr 165; 12 Lr 184; 13 Lr 67; 14 Lr 68; 15 Lr 164; 16 Ta 63; 17 Gs 365; 18 Gs 130; 19 Tr 232; 20 Tr 141; 21 Tr 88; 22 Tr 86; 23 Tr 41; 24 Lk 40; 25 Lk 33; 26 Sh 19; 27 Gr (a) 10 f; 28 Gr (a) 10 h; 29 Jh 5; 30 Jh 7; 31 Cr 40; 32 Bn 55; 33 Bn 54; 34 Kr 95; 35 Kr 92; 36 Kh 55; 37 Kh 47; 38 Ko 65; 39 Ko 62; 40 Sha 78; 41 Sha 80; 42 Ar 57; 43 Ar 78; 44 Ar 71; 45 Ar 61; 46 Mal; 47 Mal; 48 Bo 35; 49-52 Jhan; 53-55 Orangi (Kar); 56 Ah 48; 57 Ah 47; 58 Ot 47; 59 Ot 62 a; 60 Ot 46.

References: Lh, pp. 56, 58; Pw, p. 114; Al, p. 108; Lr, p. 76; Ta, p. 105; Gs, p. 103; Tr, p. 72; Lk, p. 78; Sh, p. 73; Gr (a), p. 106; Jh, p. 79; Cr, p. 125; Bn, p. 121; Kr, p. 131; Kh, p. 135; Ko, p. 134; Sha, p. 139; Ar, p. 137; Mal, p. 127; Bo, p. 141; Jhan, p. 145; Orangi, p. 144; Ah, p. 139; Ot, p. 141.

PLATE XLI.

COPPER IMPLEMENTS AND OTHER OBJECTS.

1 Jh 51; 2 Jh 52; 3 Ot 52; 4 Bd; 5 Ch 438; 6 Ch 464; 7 Ch 452; 8 Ch 275; 9 Ch 66; 10 Ch 62; 11 Ch 465; 12 Ch 415; 13 Ch 201; 14 Ch 76; 15 Ch 359; 16 Ch 400; 17 Sha 48; 18 Sha 82; 19 Gs 364; 20 Gs 349; 21 Jk 650; 22 Sha 22; 23 Gs 351; 24 Gs 344; 25 Lh 206; 26 Kr 78; 27 Ar 46; 28 Al 10; 29 Al 82; 30 Gs 345; 31 Lh 222; 32 Lh 62; 33 Lh 217; 34 Lh 19; 35 Jk 1.

References: Jh, p. 79; Ot, p. 141; Bd, p. 47; Ch, p. 44; Sha, p. 139; Gs, p. 103; Jk, pp. 13, 15; Lh, pp. 56, 58; Kr, p. 131; Ar, p. 137; Al, p. 108.

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APPROXIMATE SCALE OF FIGURES

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Pl. XV	Figs. 1-6, 19-20, $\frac{1}{2}$; the rest, $\frac{1}{3}$	Pl. XXIX	Figs. 1, 2, 9-11, 36-38, $\frac{2}{7}$; the rest, $\frac{1}{2}$
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POTTERY, IRON IMPLEMENTS AND OTHER OBJECTS OF THE
INDO-SASSANIAN PERIOD FROM JHUKAR



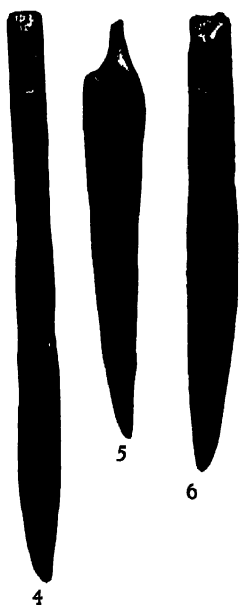
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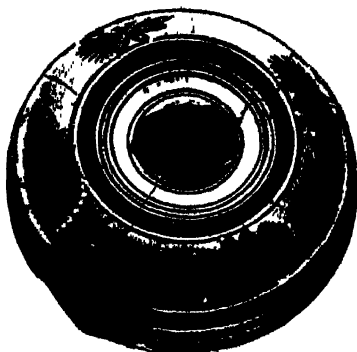
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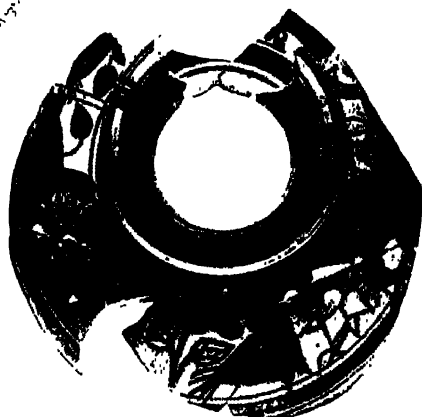
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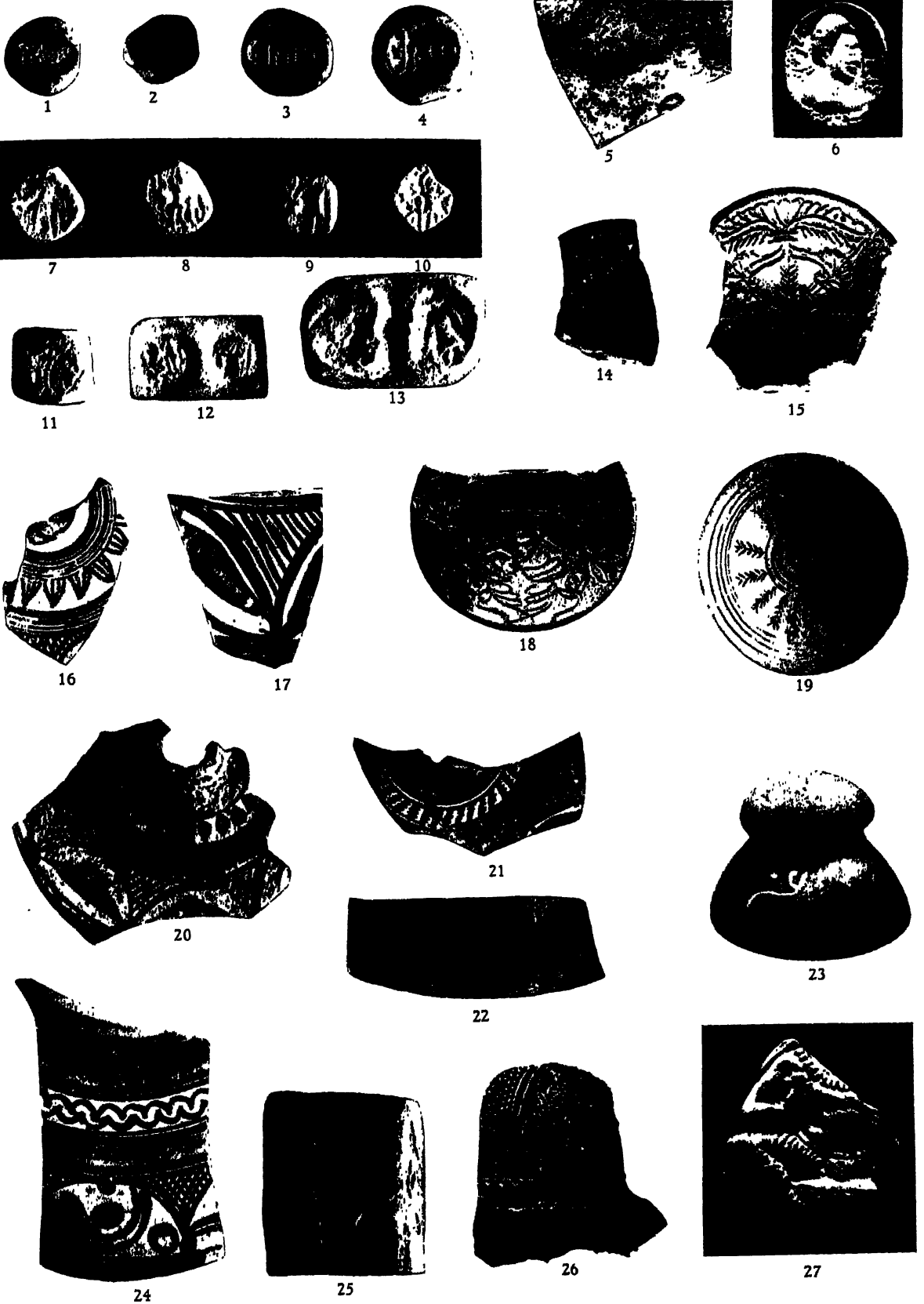


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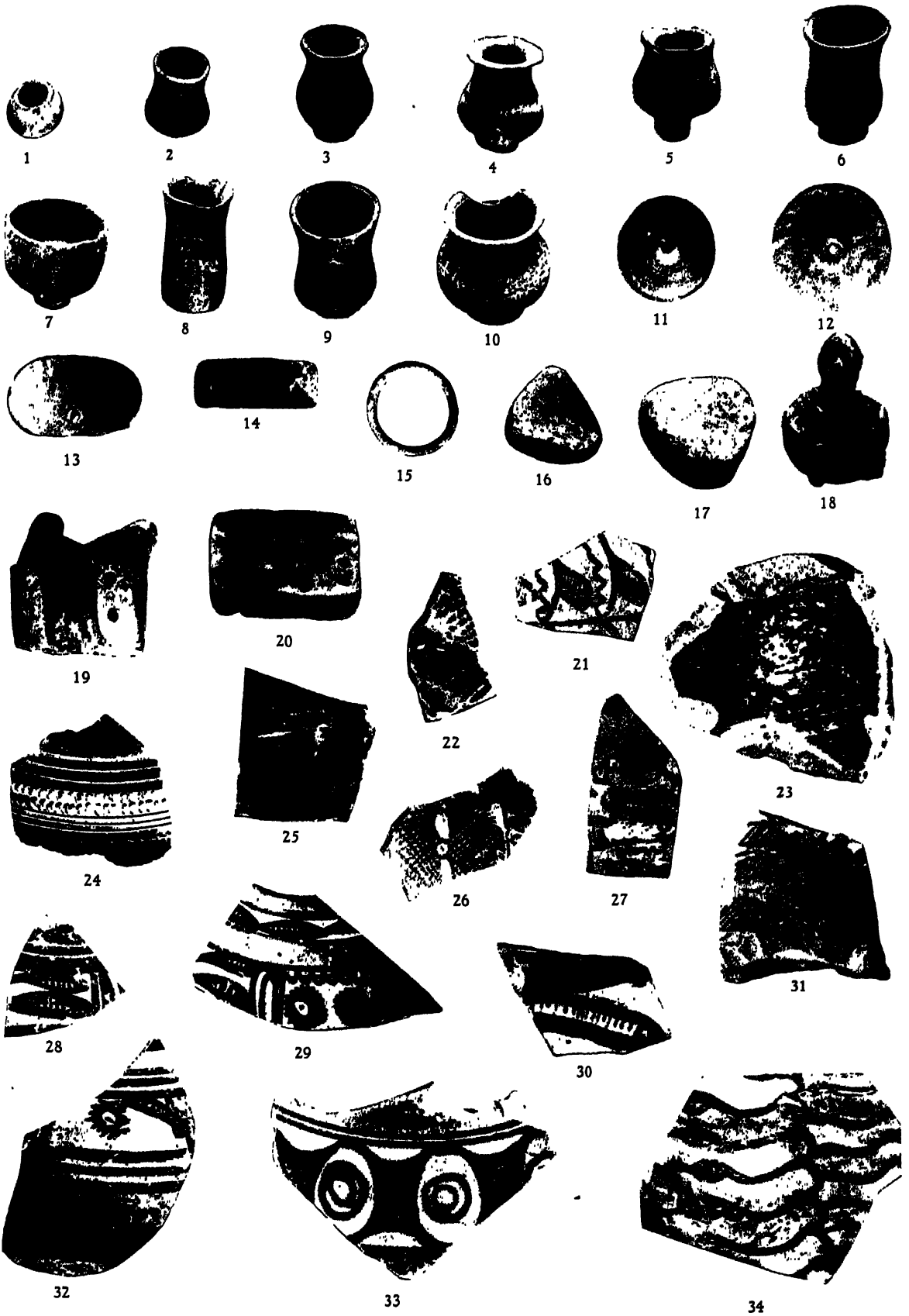


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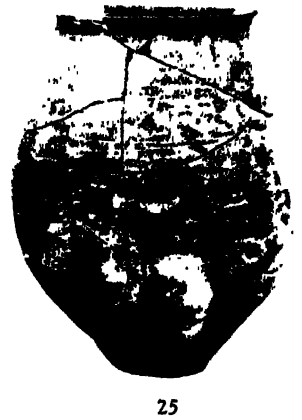
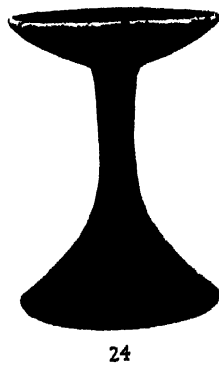
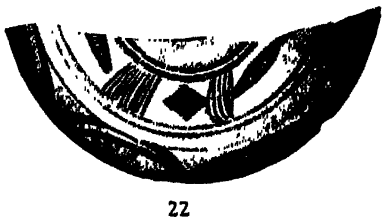
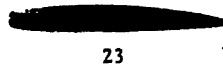
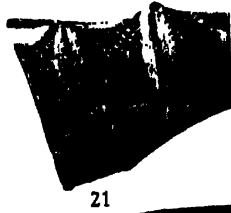
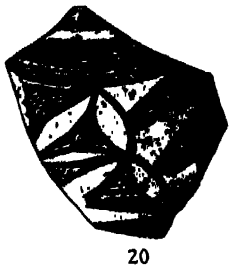
COPPER COINS, SEALINGS, POTTERY ETC. OF THE
INDO-SASSANIAN PERIOD FROM JHUKAR



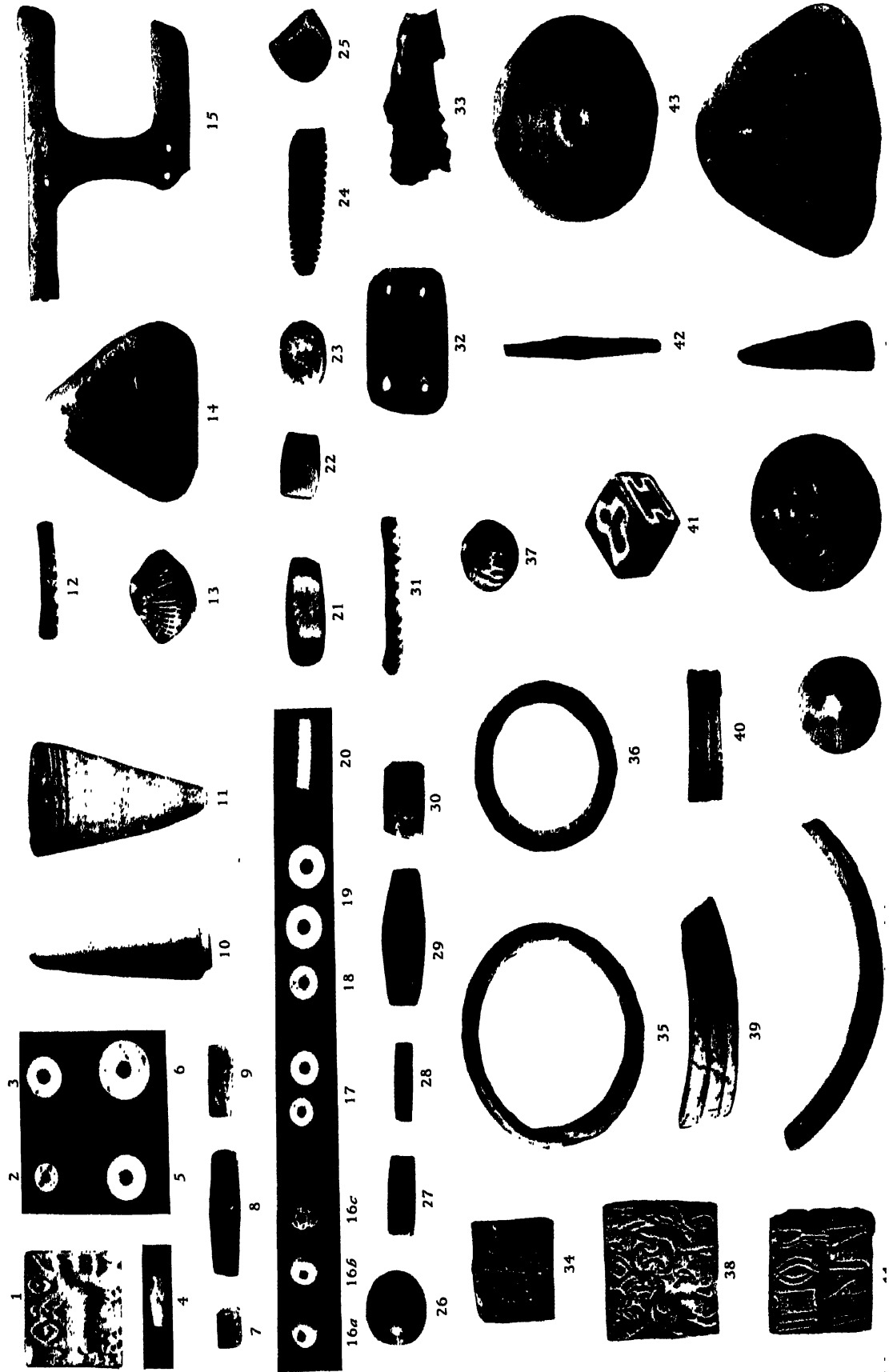
POTTERY AND TERRACOTTA OF THE CHALCOLITHIC AGE
FROM JHUKAR



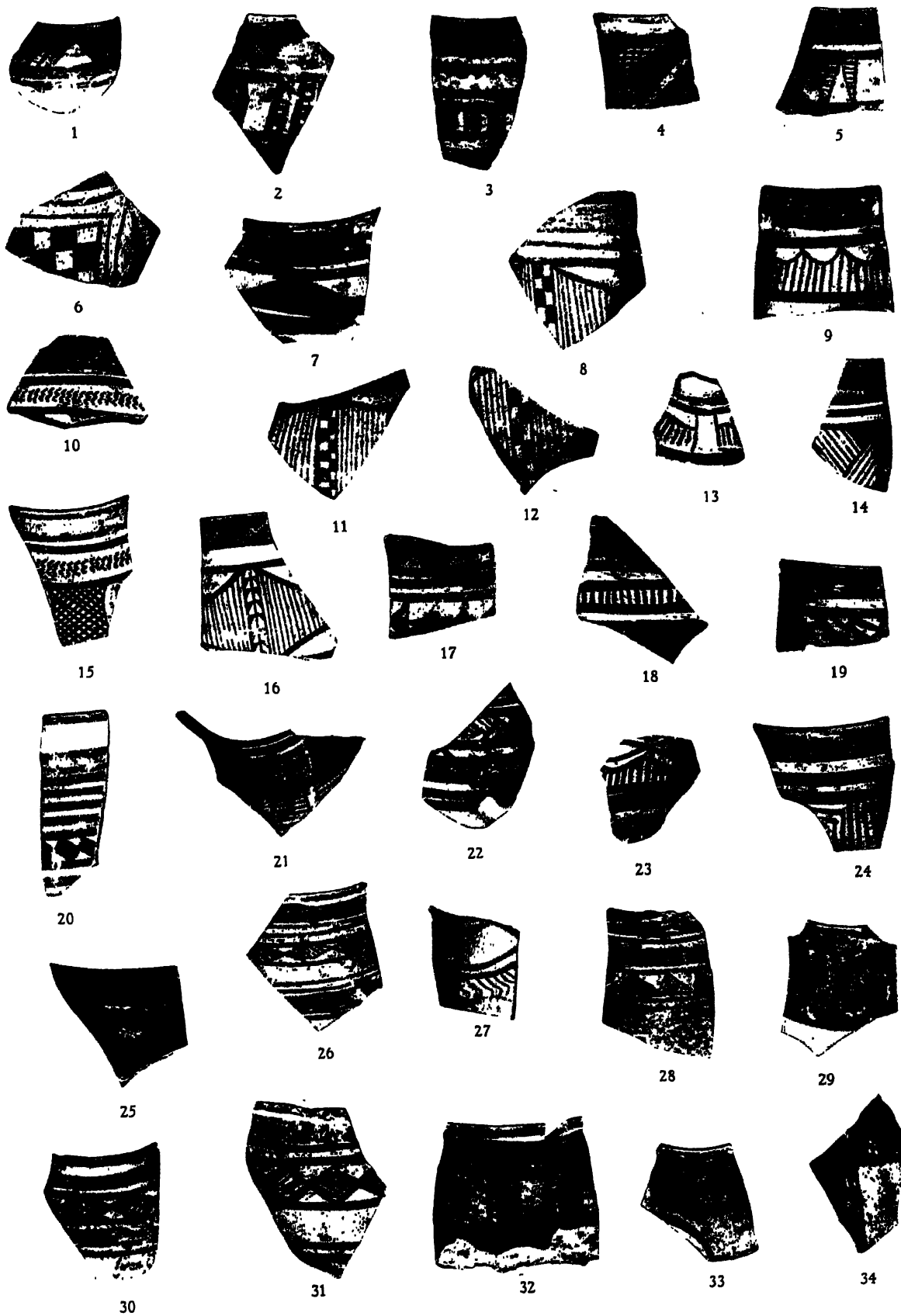
POTTERY ETC. FROM JHUKAR, AMRI AND THARRO HILL



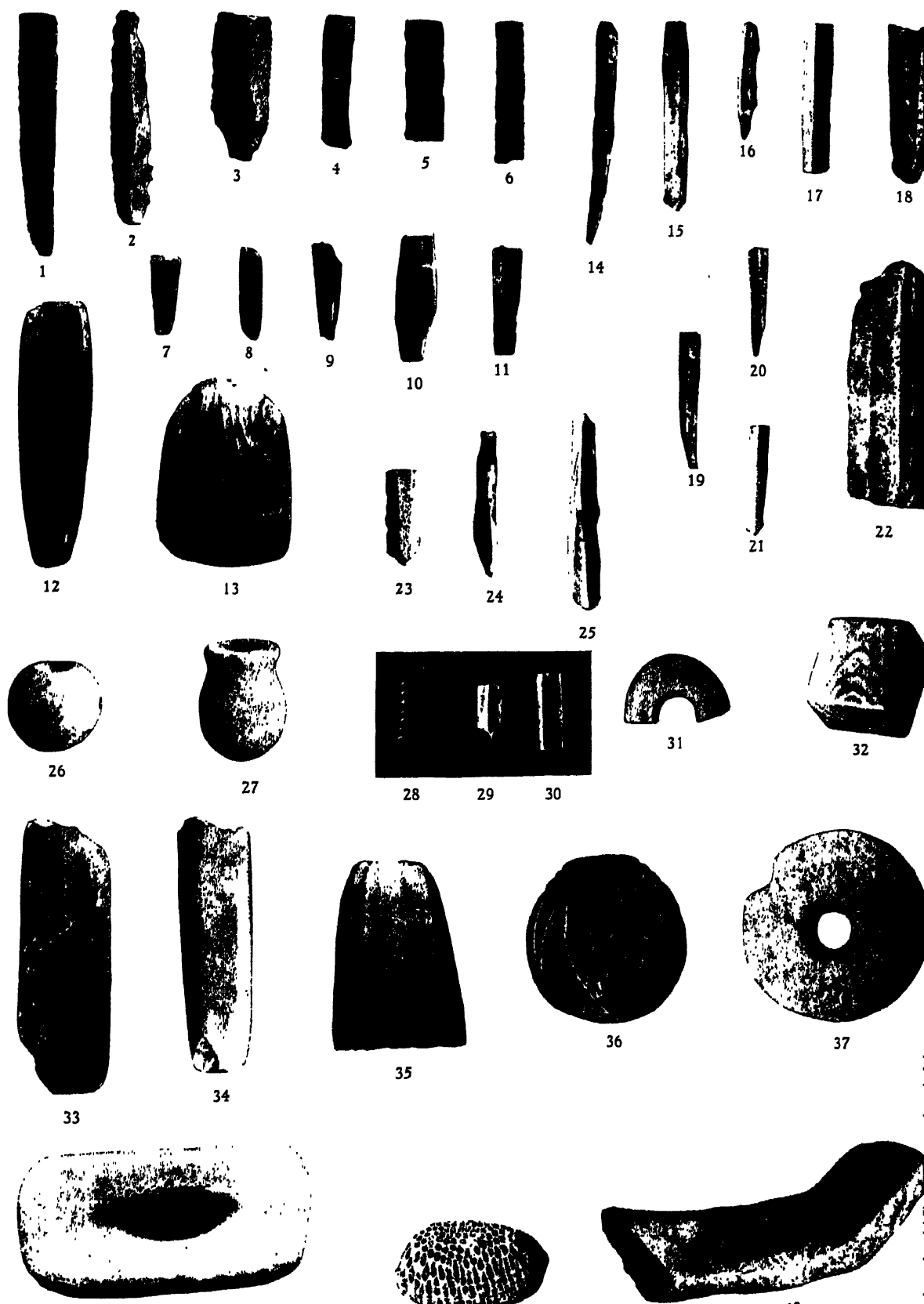
SEALS, BEADS, BANGLES ETC. FROM JHUKAR,
AMRI AND CHANHU-DARO



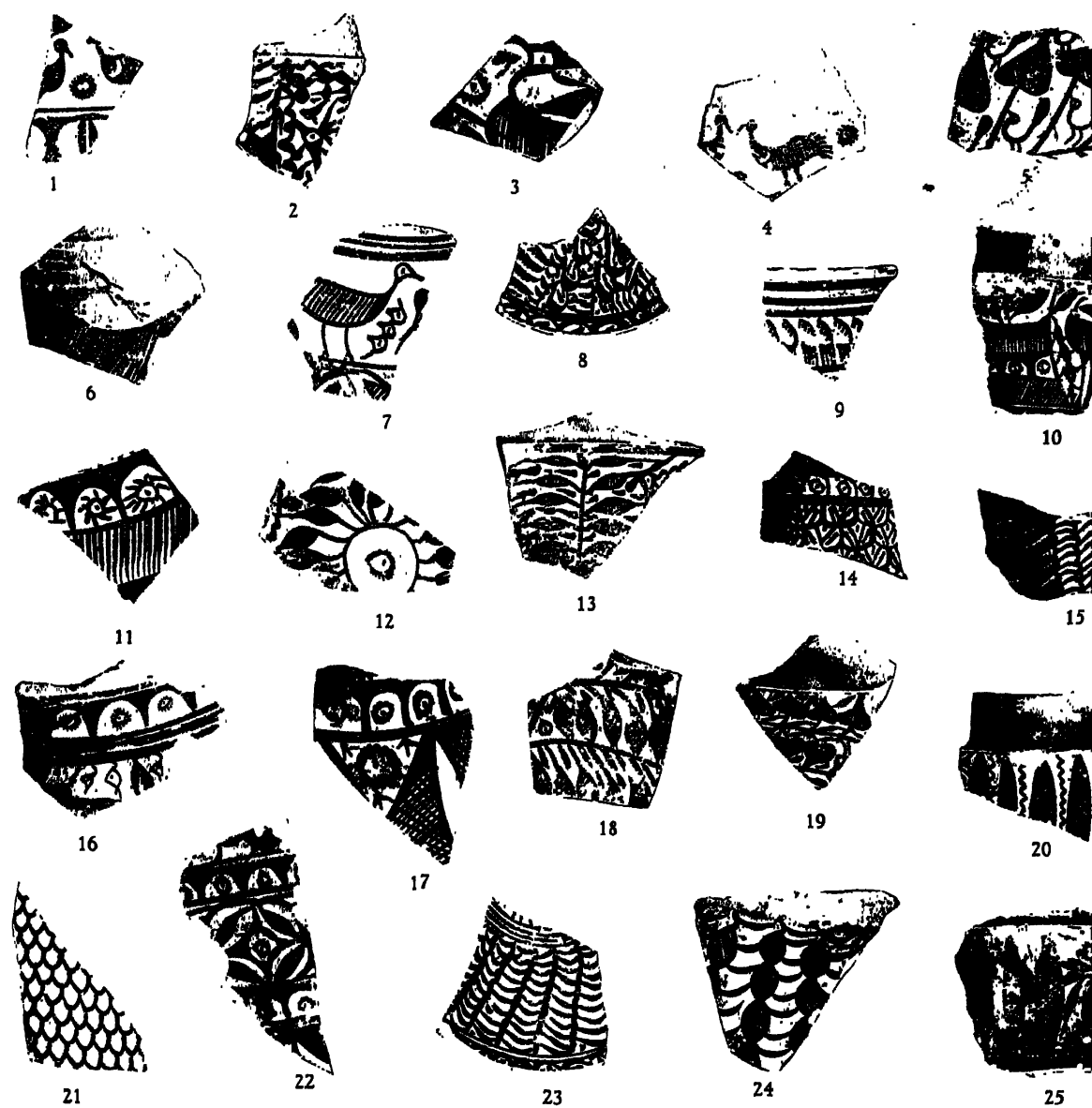
PAINTED POTTERY FROM AMRI AND THARRO HILL



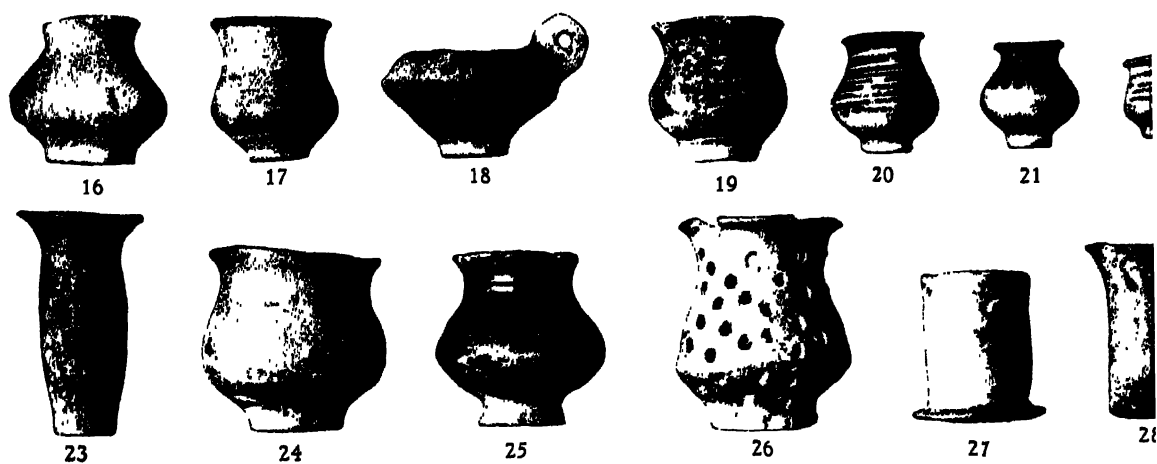
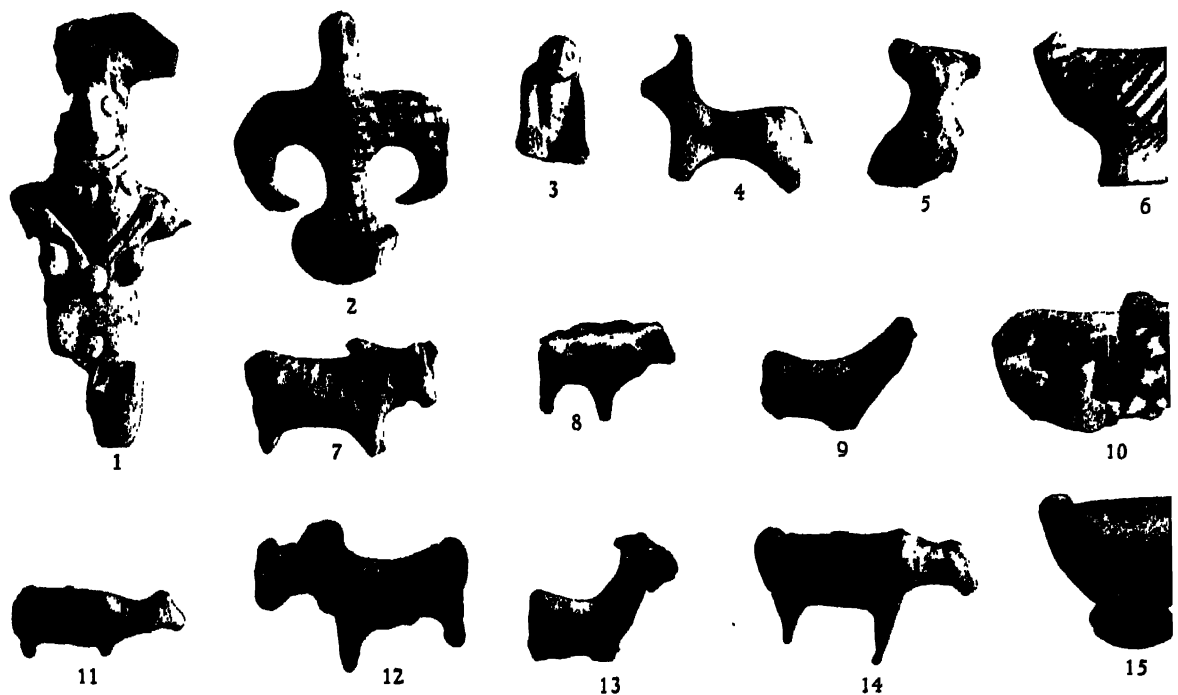
STONE OBJECTS FROM JHUKAR, THARRO HILL, AMRI,
CHANHU-DARO AND OTHER SITES



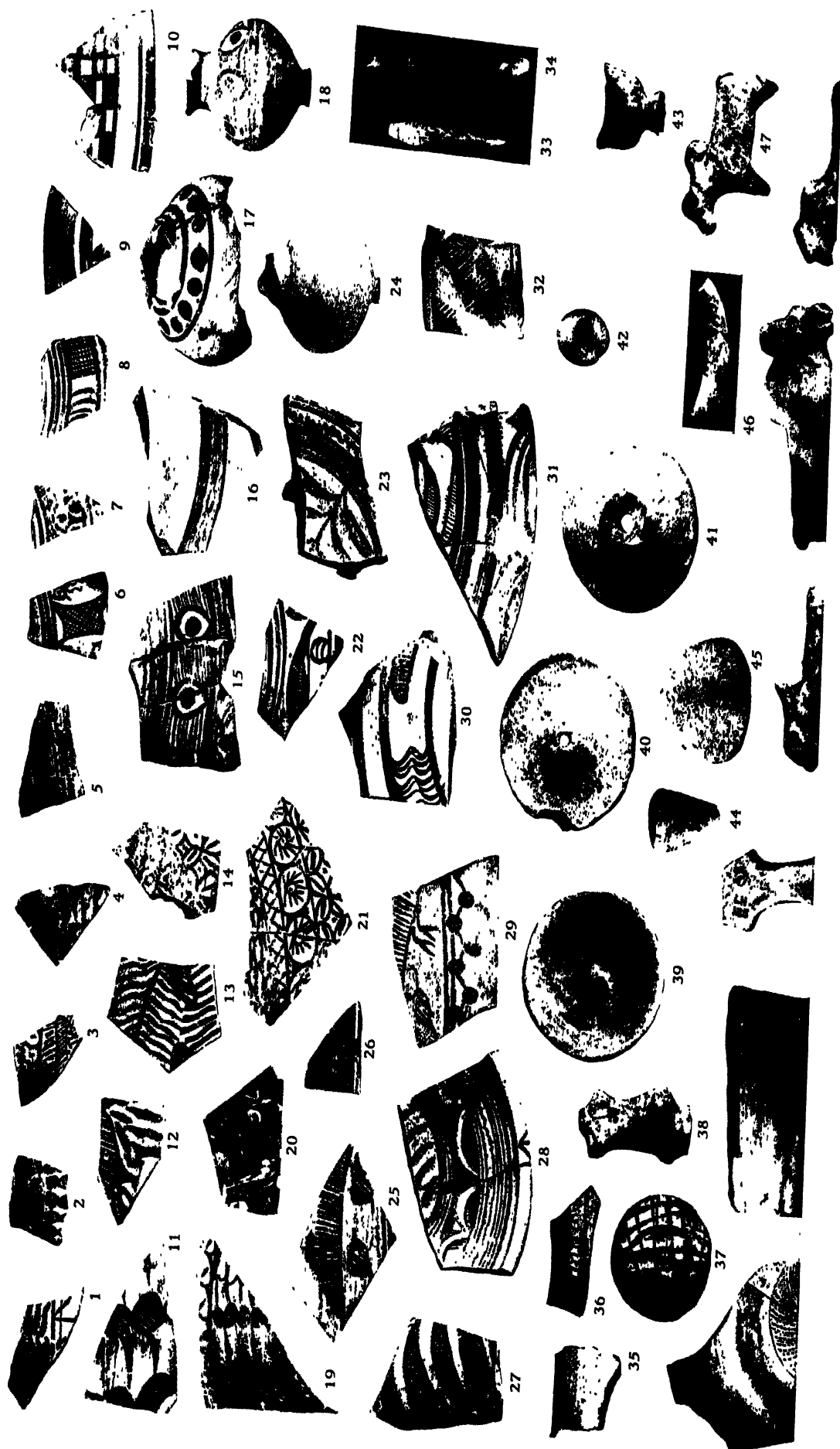
PAINTED POTTERY FROM CHANHU-DARO



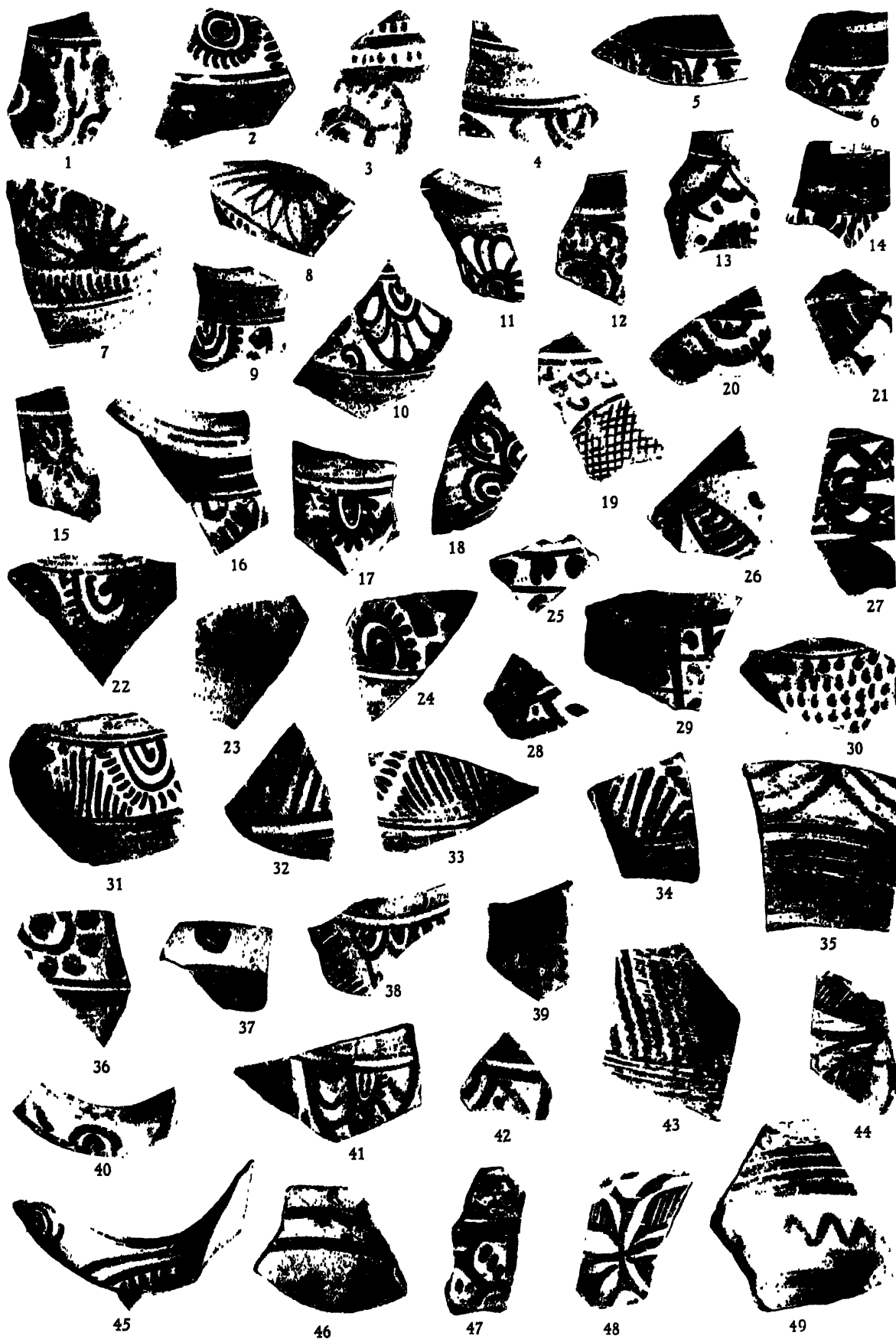
POTTERY AND TERRACOTTA OBJECTS FROM CHANHU-DARO,
AMRI AND JHUKAR



PAINTED POTTERY, TERRACOTTA AND OTHER OBJECTS
FROM LOHUMJO-DARO



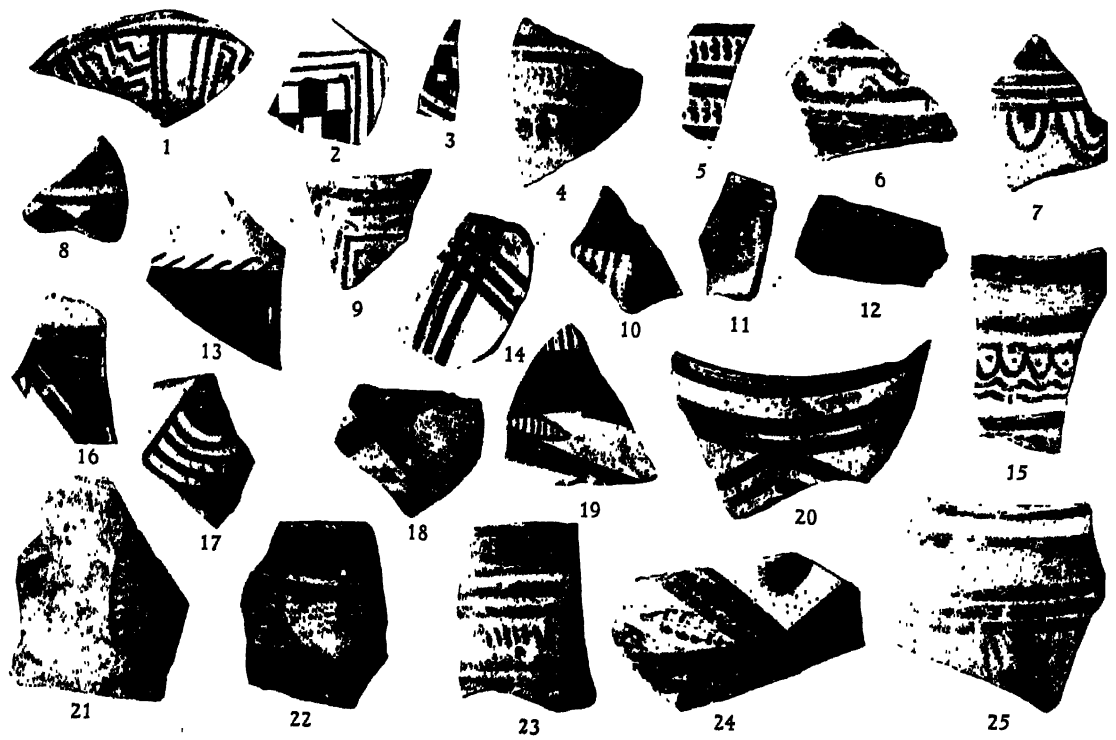
PAINED POTTERY FROM TRIHNI, SHAH HASAN AND LAKHIYO



PAINTED POTTERY FROM LOHRI, ALI MURAD AND DAMB BUTHI



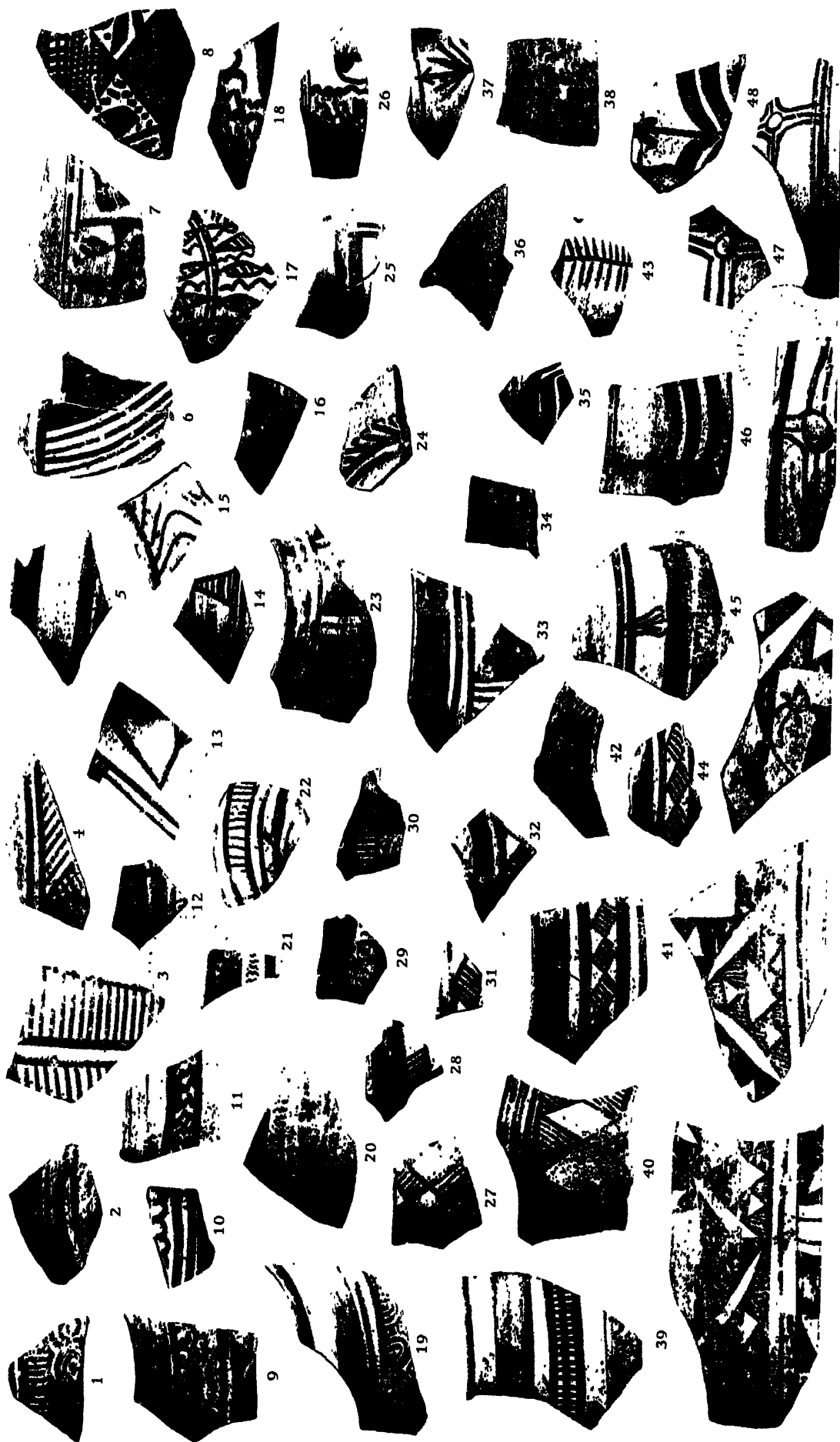
FUNERARY POTTERY AND OTHER OBJECTS FROM DAMB BUTHI



PAINTED POTTERY FROM GHAZI SHAH

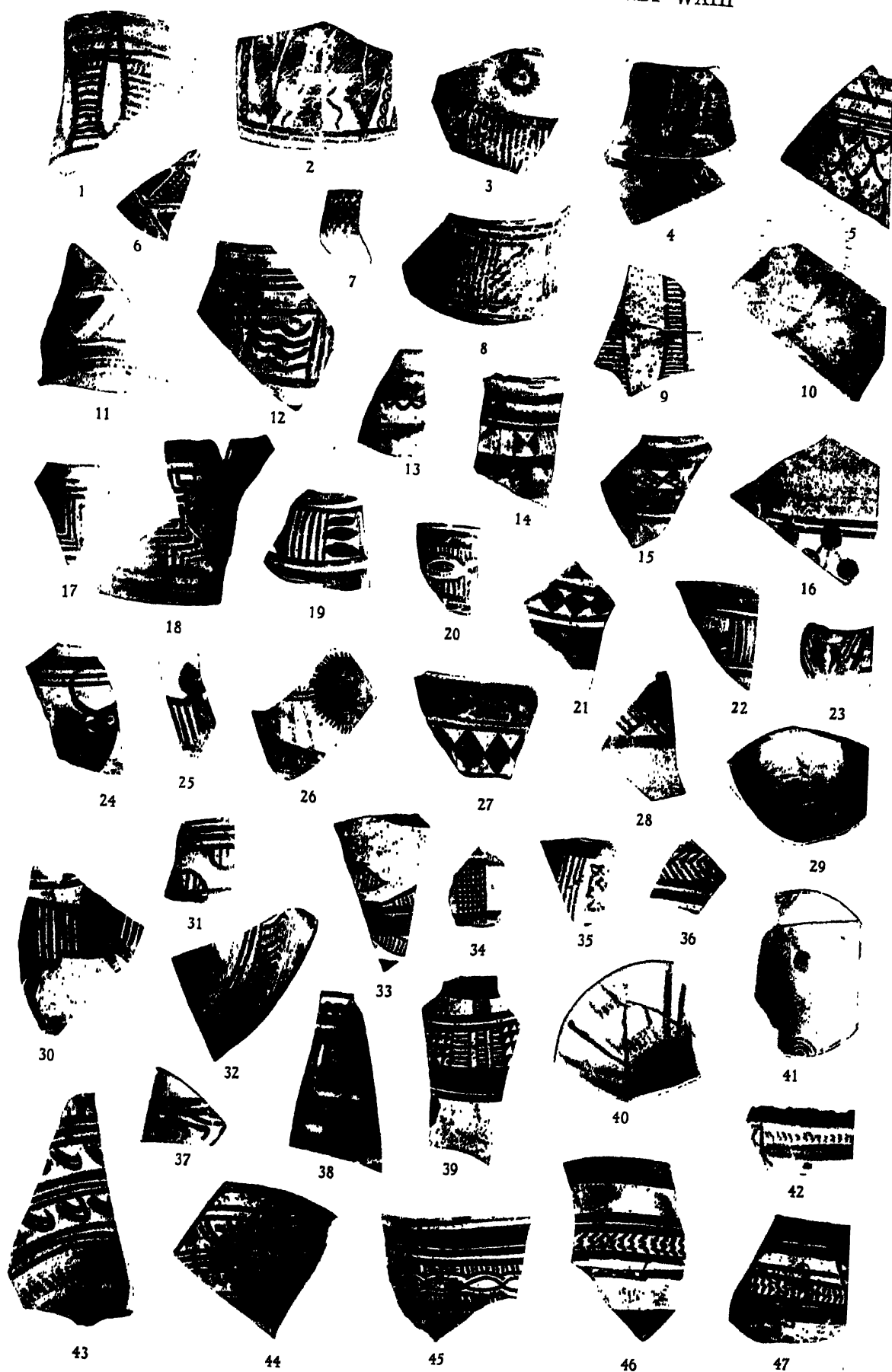


PAINTED POTTERY FROM GHAZI SHAH

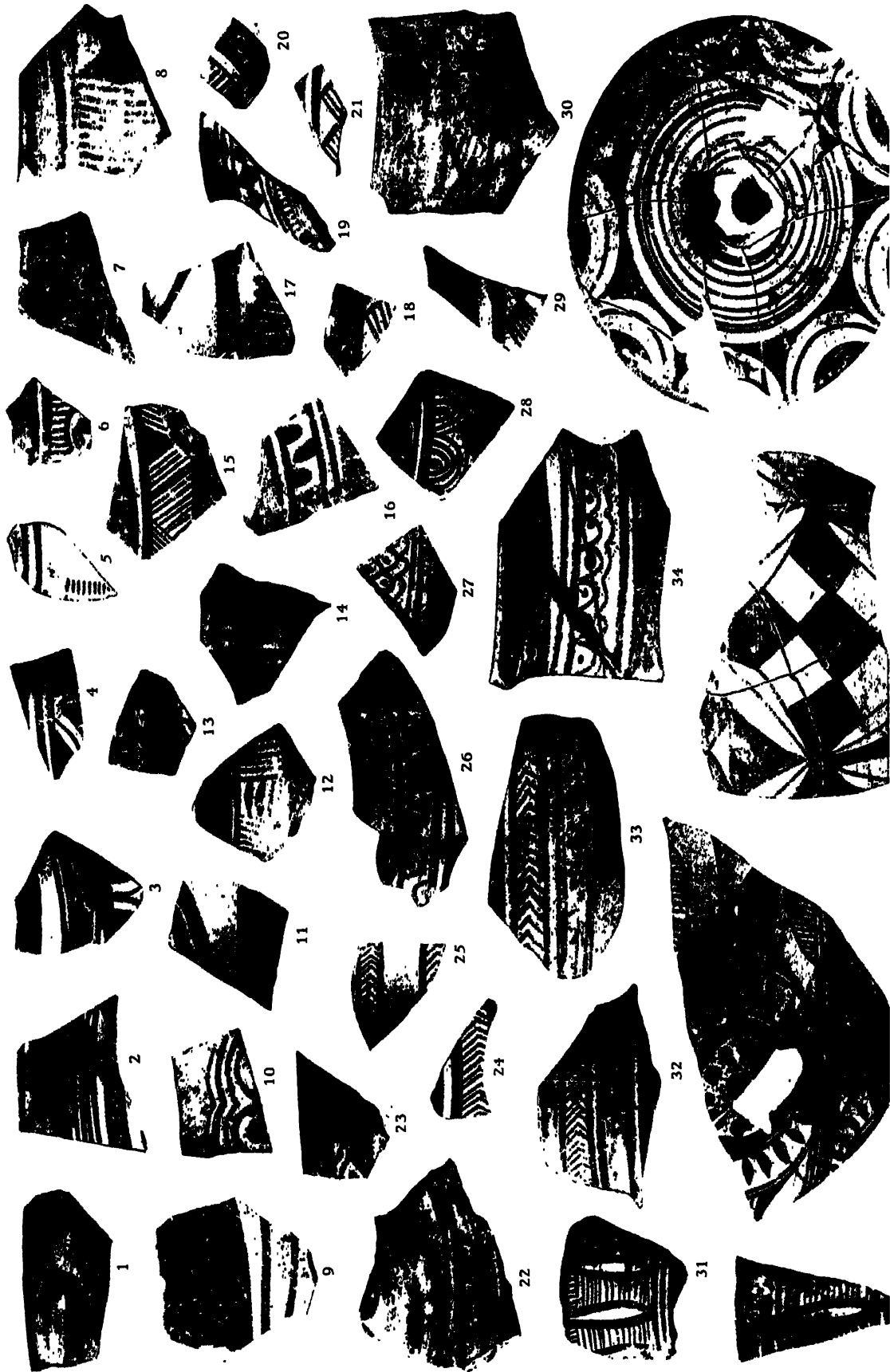


PAINTED POTTERY FROM PANDI WAHI

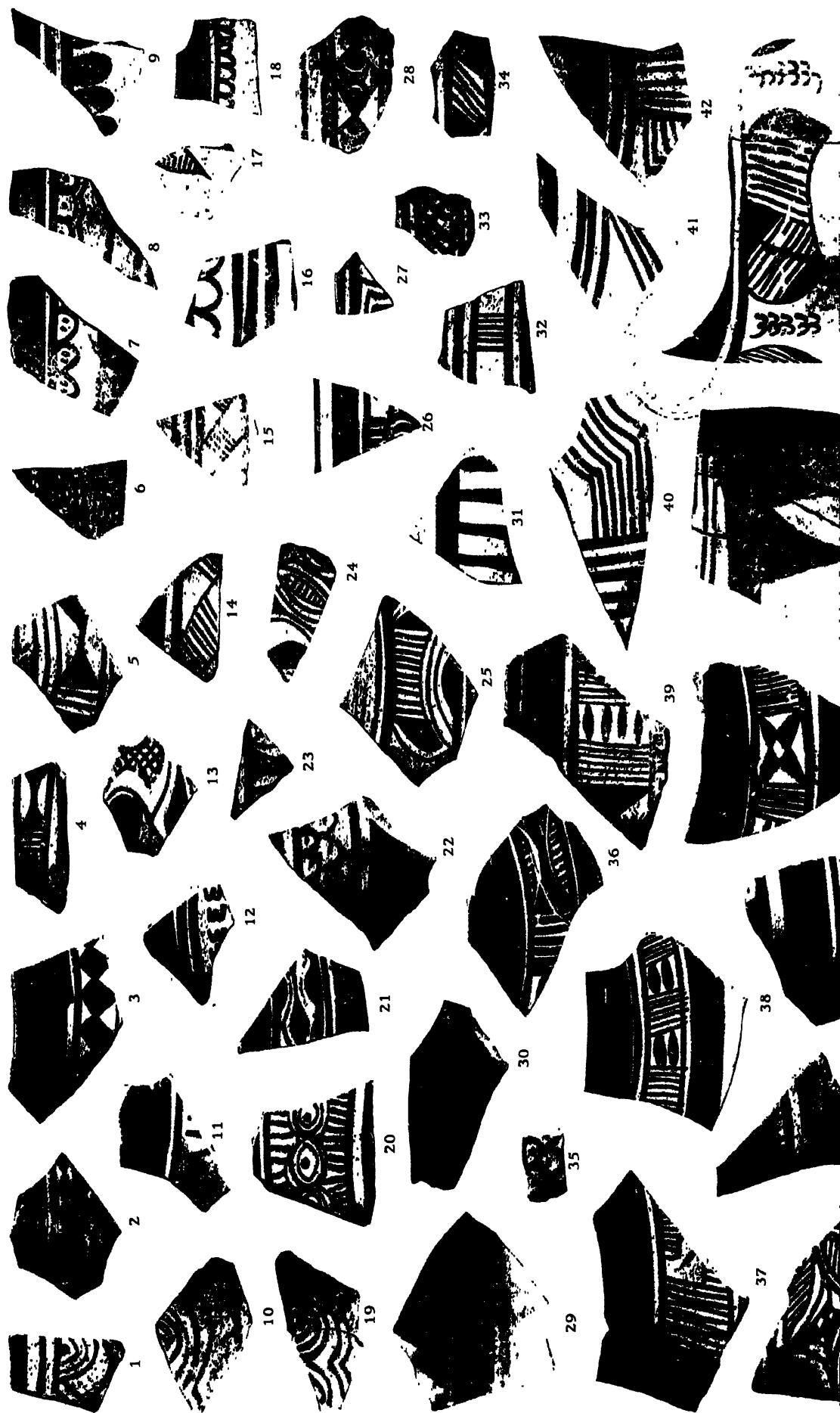
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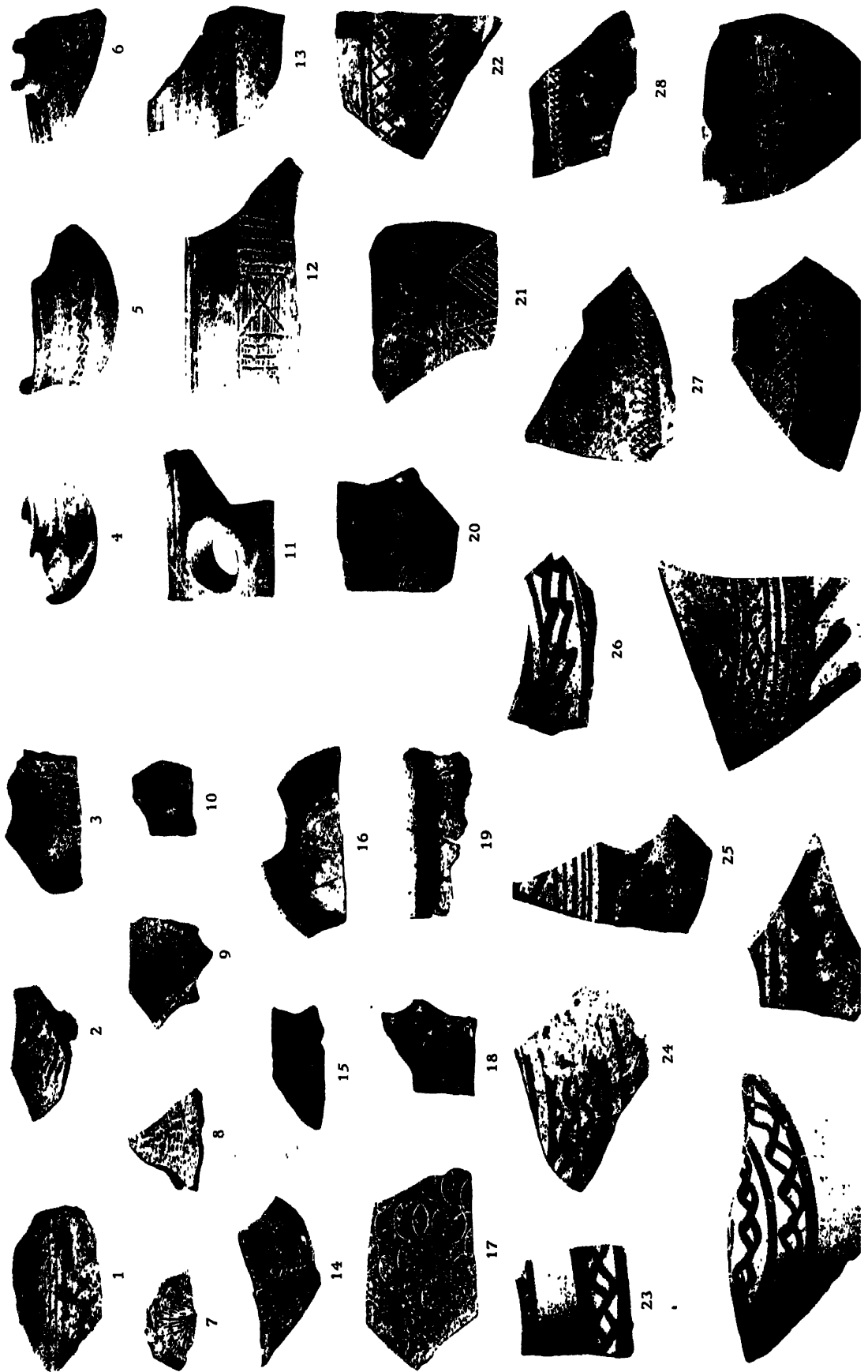
PAINTED POTTERY FROM PANDI WAHI AND OTHER SITES



PAINTED POTTERY FROM CHAURO AND TANDO RAHIM KHAN



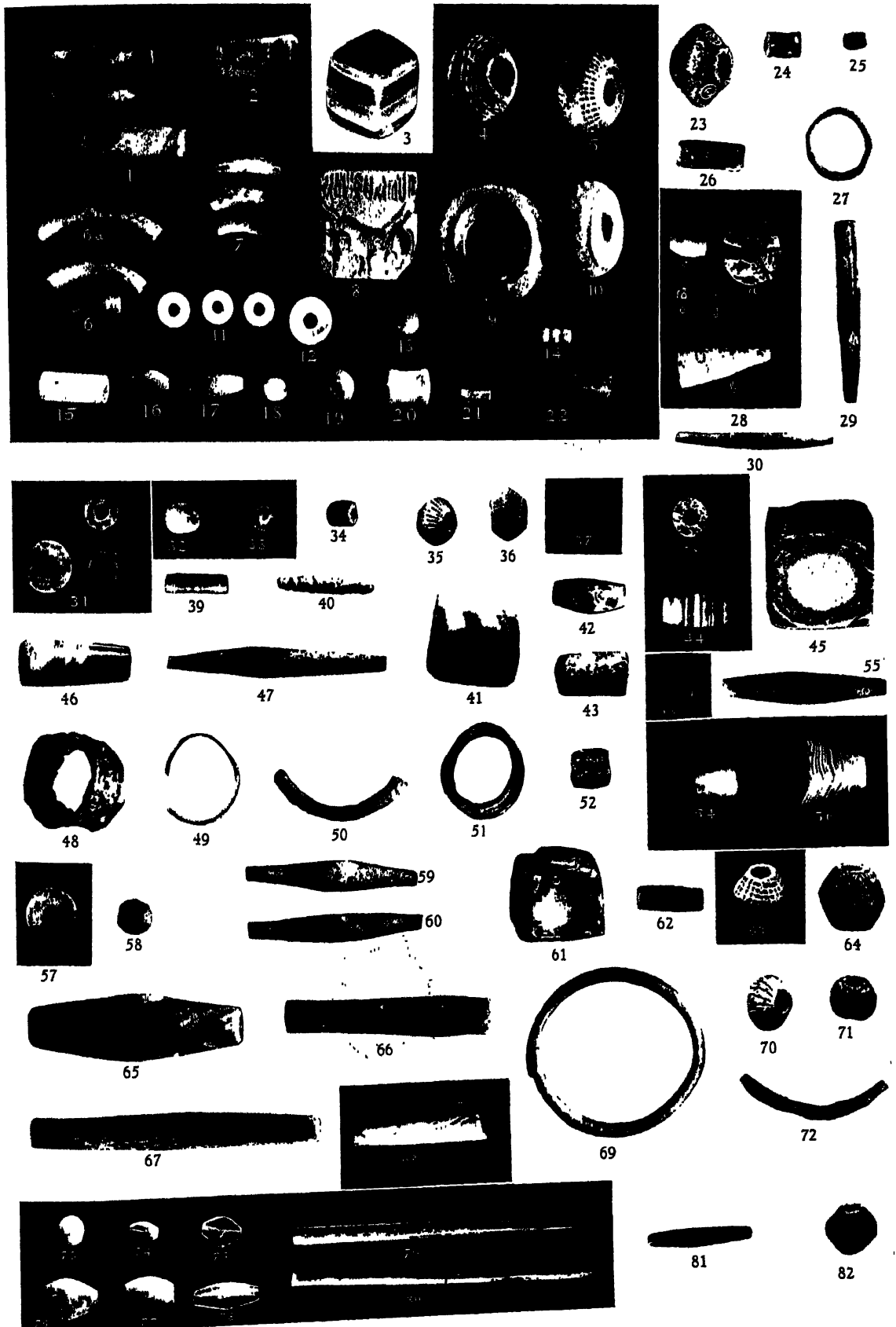
PAINTED AND INCISED POTTERY FROM JHANGAR, AND INCISED POTTERY
FROM OTHER SITES



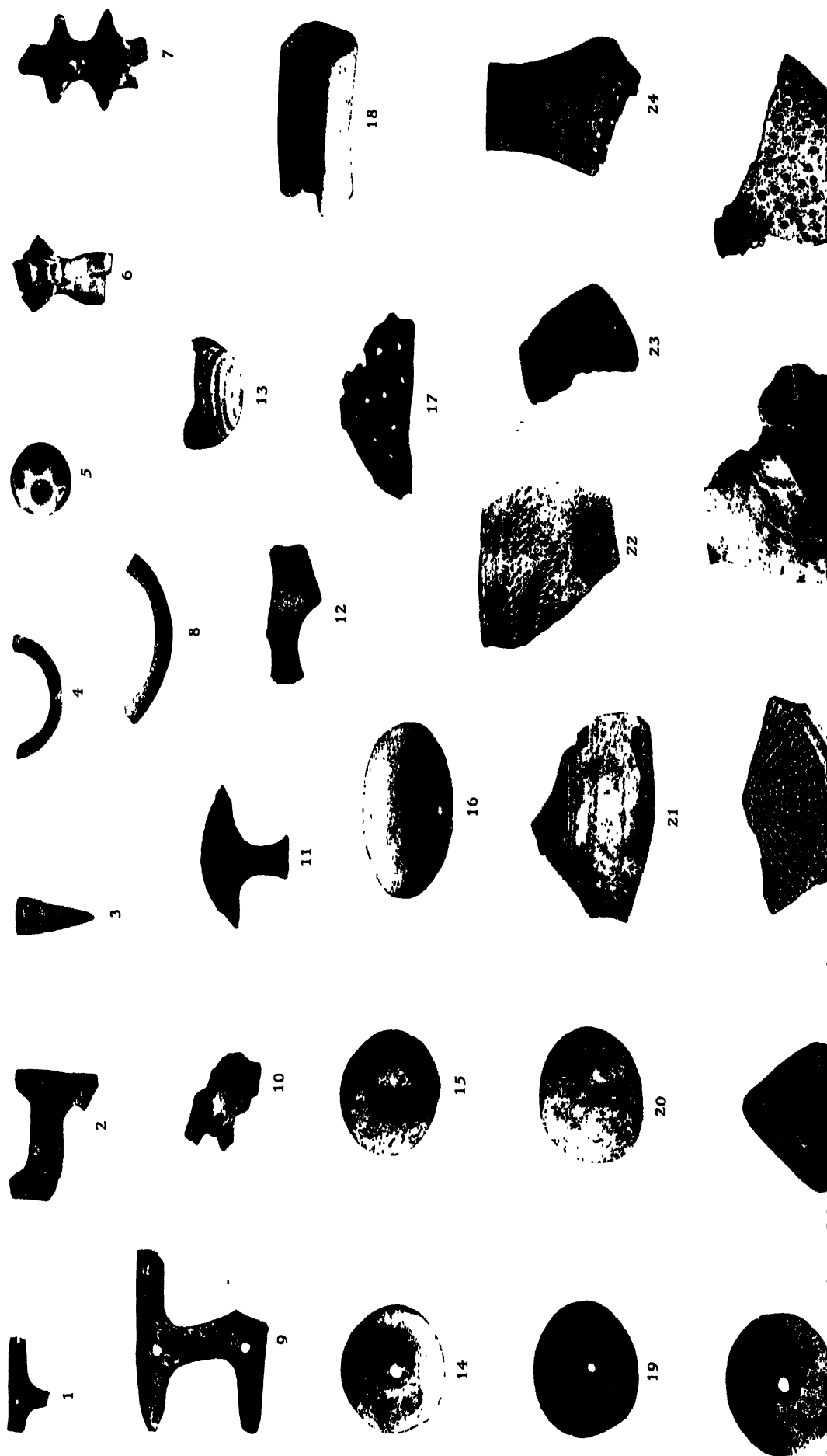
PAINTED POTTERY FROM KARCHAT, SHAHJO-KOTIRO,
DHAL, DISOI AND GORANDI



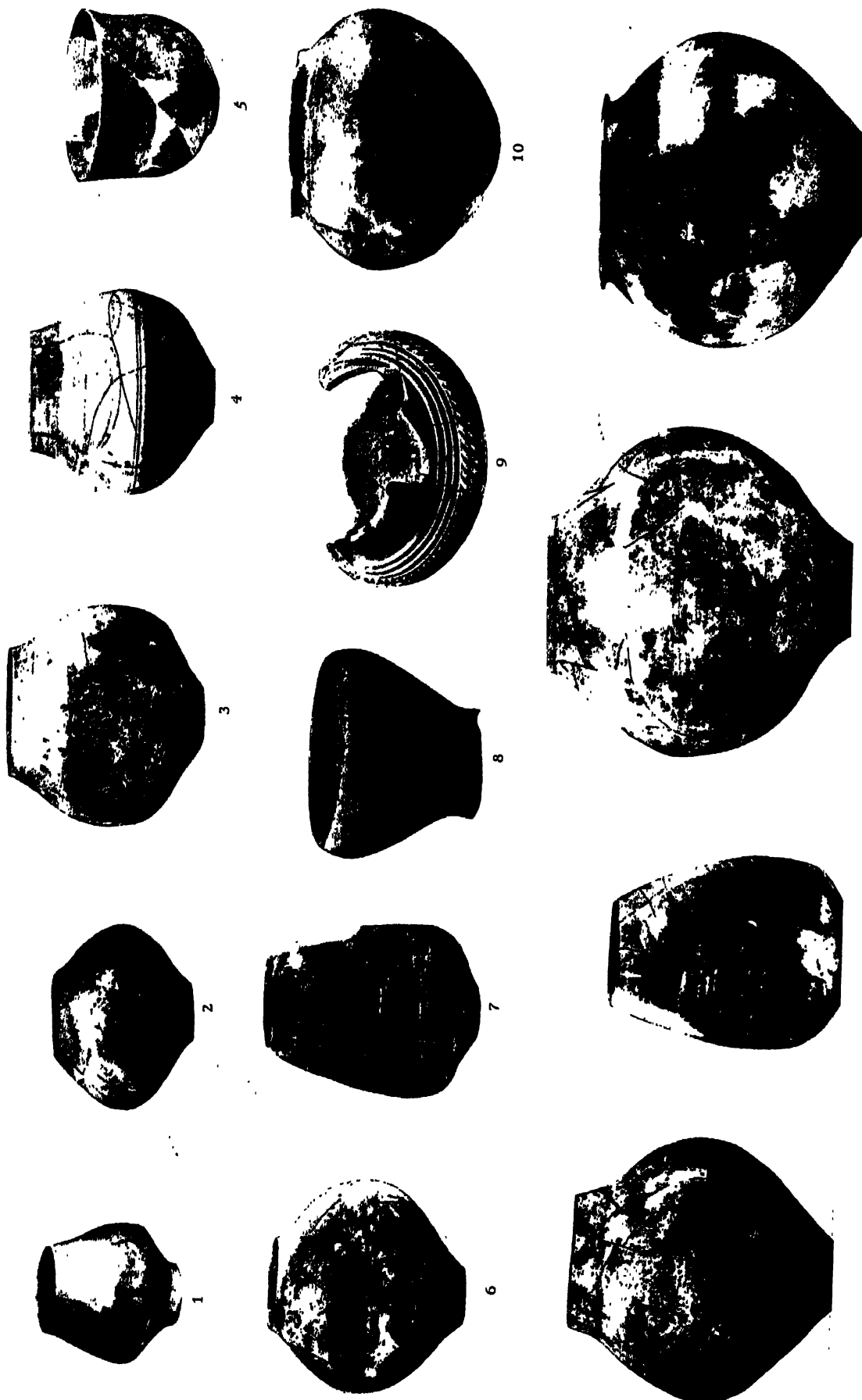
SEAL, BEADS, BANGLES AND MISCELLANEOUS OTHER OBJECTS



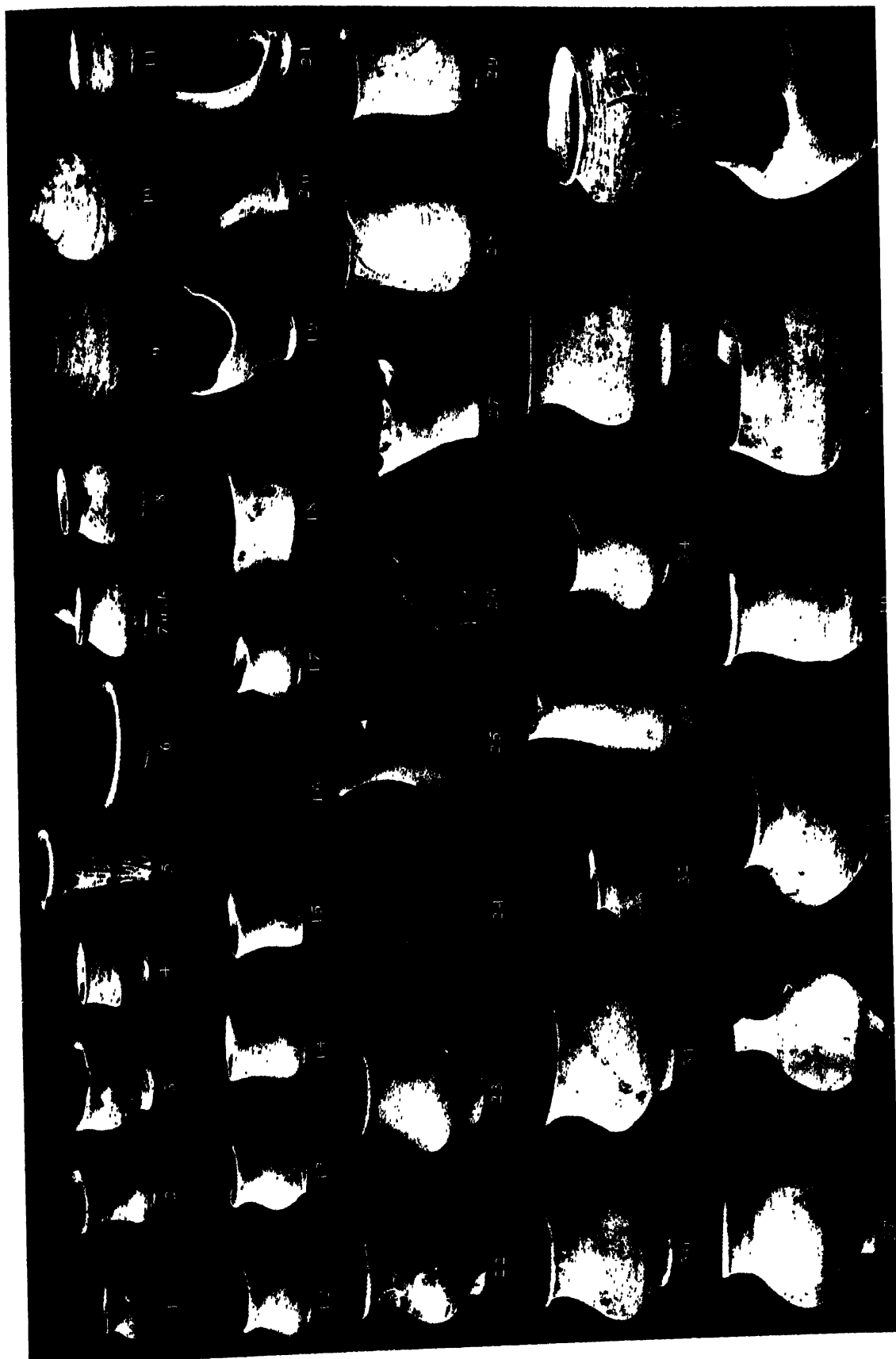
MISCELLANEOUS POTTERY AND TERRACOTTA OBJECTS



POTTERY VASES



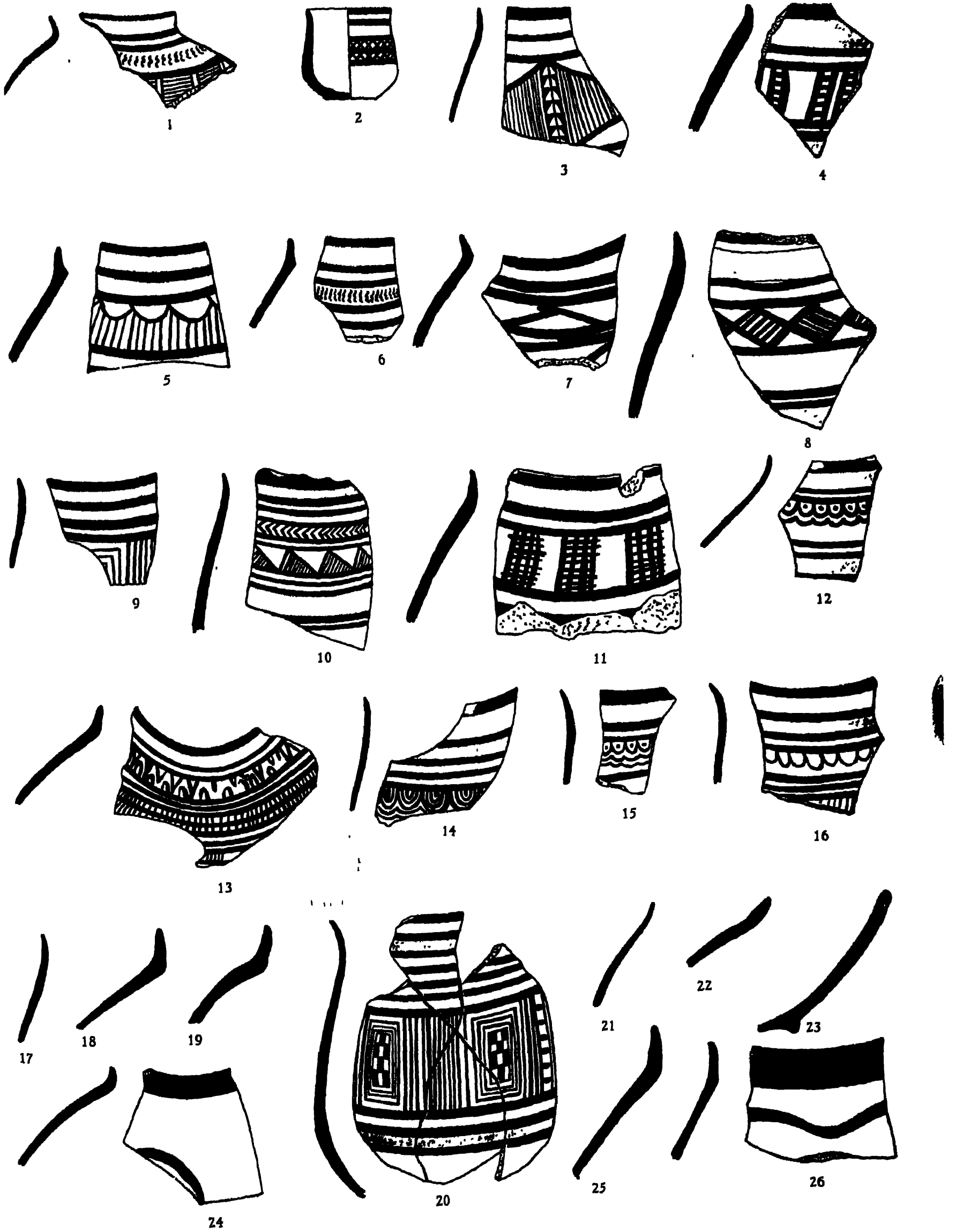
POTTERY VASES



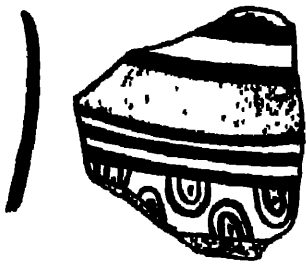
POTTERY VASES AND OTHER OBJECTS



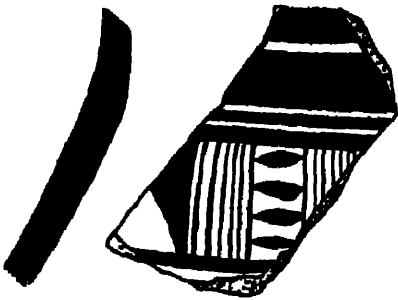
TYPES OF POTTERY FROM AMRI AND OTHER SITES



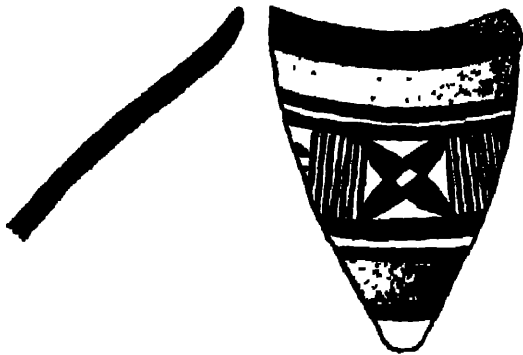
TYPES OF POTTERY FROM CHAURO AND PANDI WAHI



1



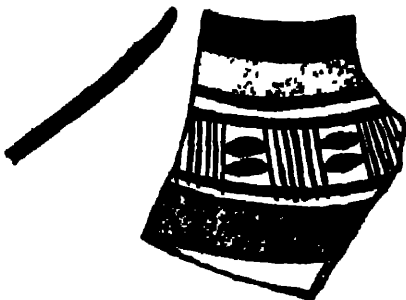
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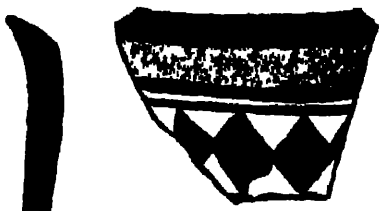
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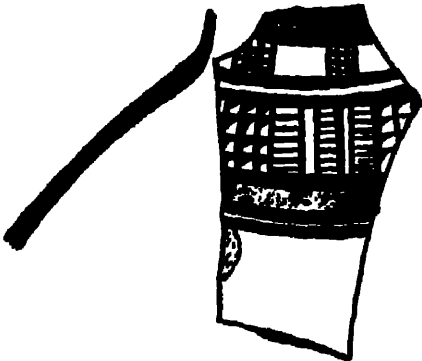
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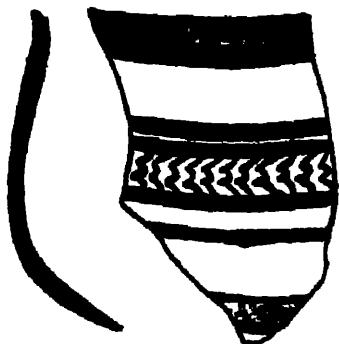
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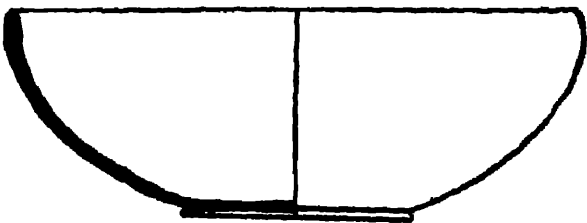
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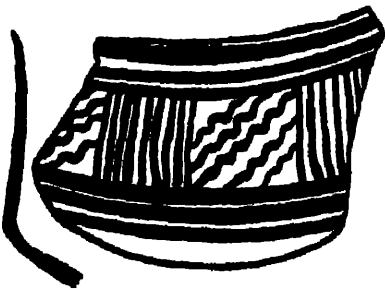
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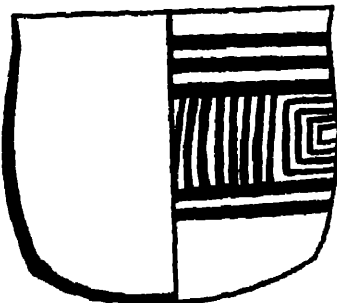
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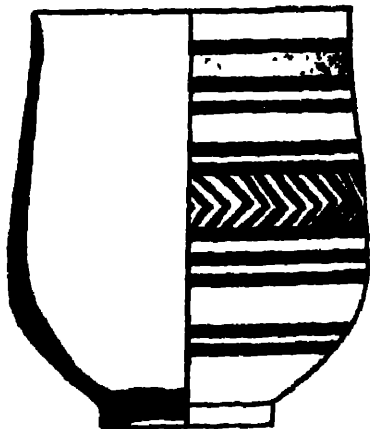
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13



14



15

CHERT IMPLEMENTS



COPPER IMPLEMENTS AND OTHER OBJECTS



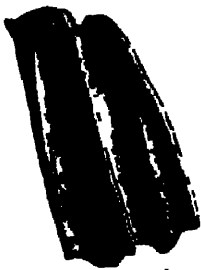
EXPLANATION OF PLATE XLII

- Figs. 1-8 are slightly reduced direct photographs, while Figs. 10, 11 are of natural size.
- Figs. 1, 2. Dorsal and ventral views of the cuttle-bone, *Sepia aculeata* d'Orbigny, from the Andamans in the Indian Museum.
- Figs. 3-8. Dorsal and ventral views of three cuttle-bones from Othmanjo-Buthi (Ot 51, 63).
- Fig. 9. Fragmentary right ramus of the lower jaw of a young *Bos indicus* Linn. from Jhangar (Jh, a).
- Fig. 10. Fragment of the skull of a Domestic Goat—*Capra aegagrus* Gmelin race *indicus* Prashad, with Pm 3 and M₁, M₂, from Pokhran Landi (Pl 35).
- Fig. 11. Right second upper molar tooth of the Domestic Goat—*Capra aegagrus* Gmelin race *indicus* Prashad, from Jhangar (Jh, b).

ANIMAL REMAINS



9



11



10



5



6



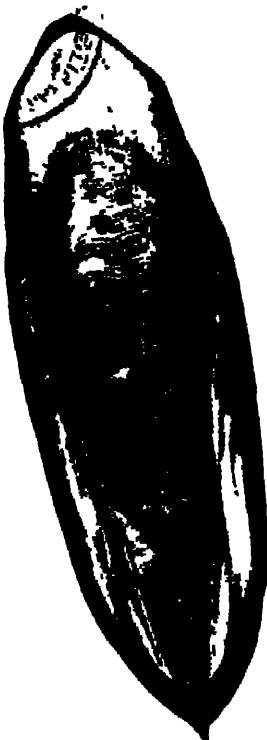
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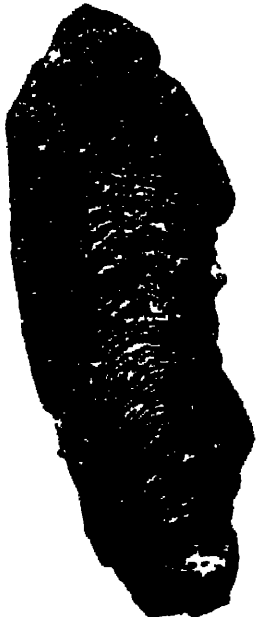
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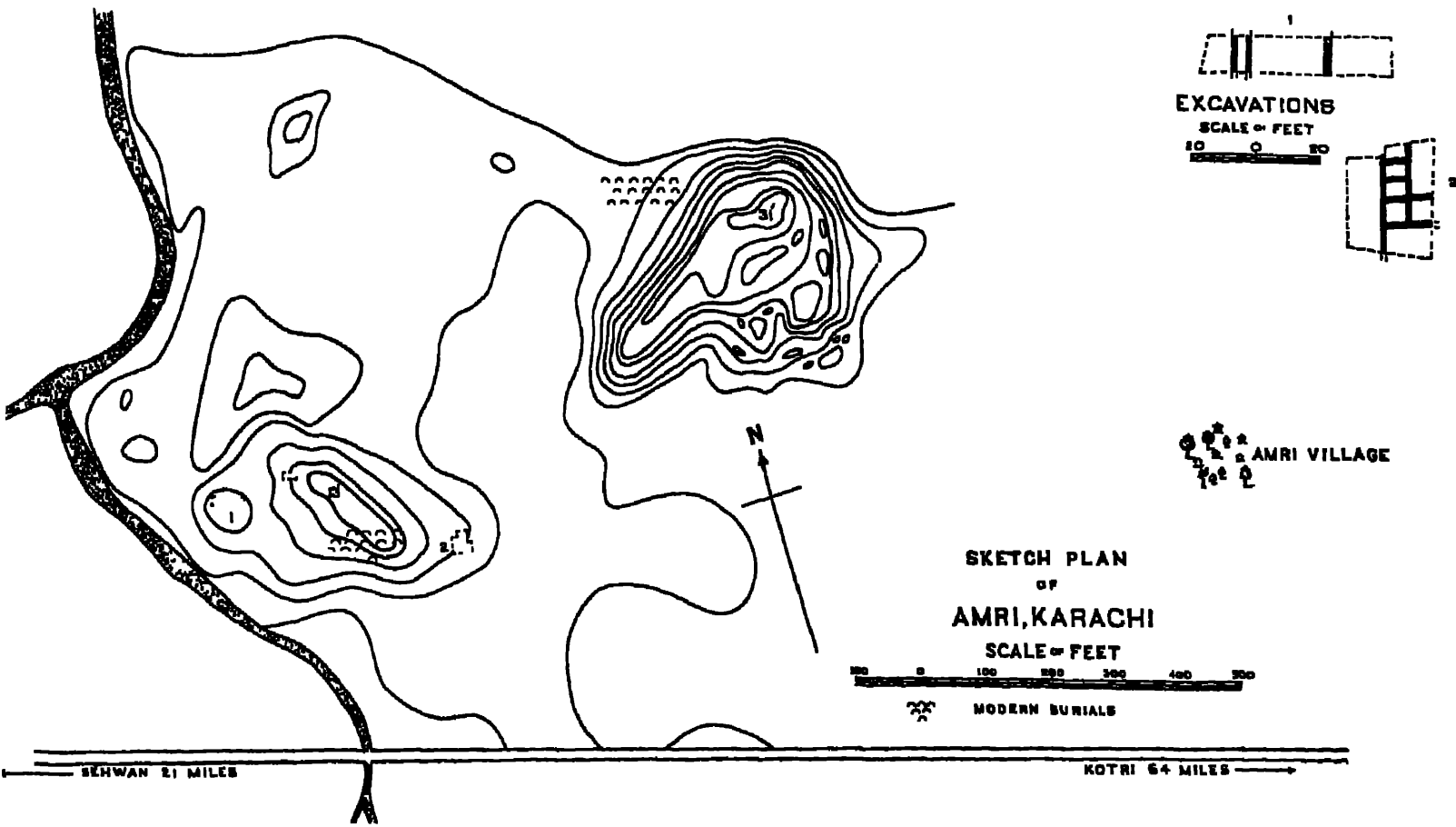
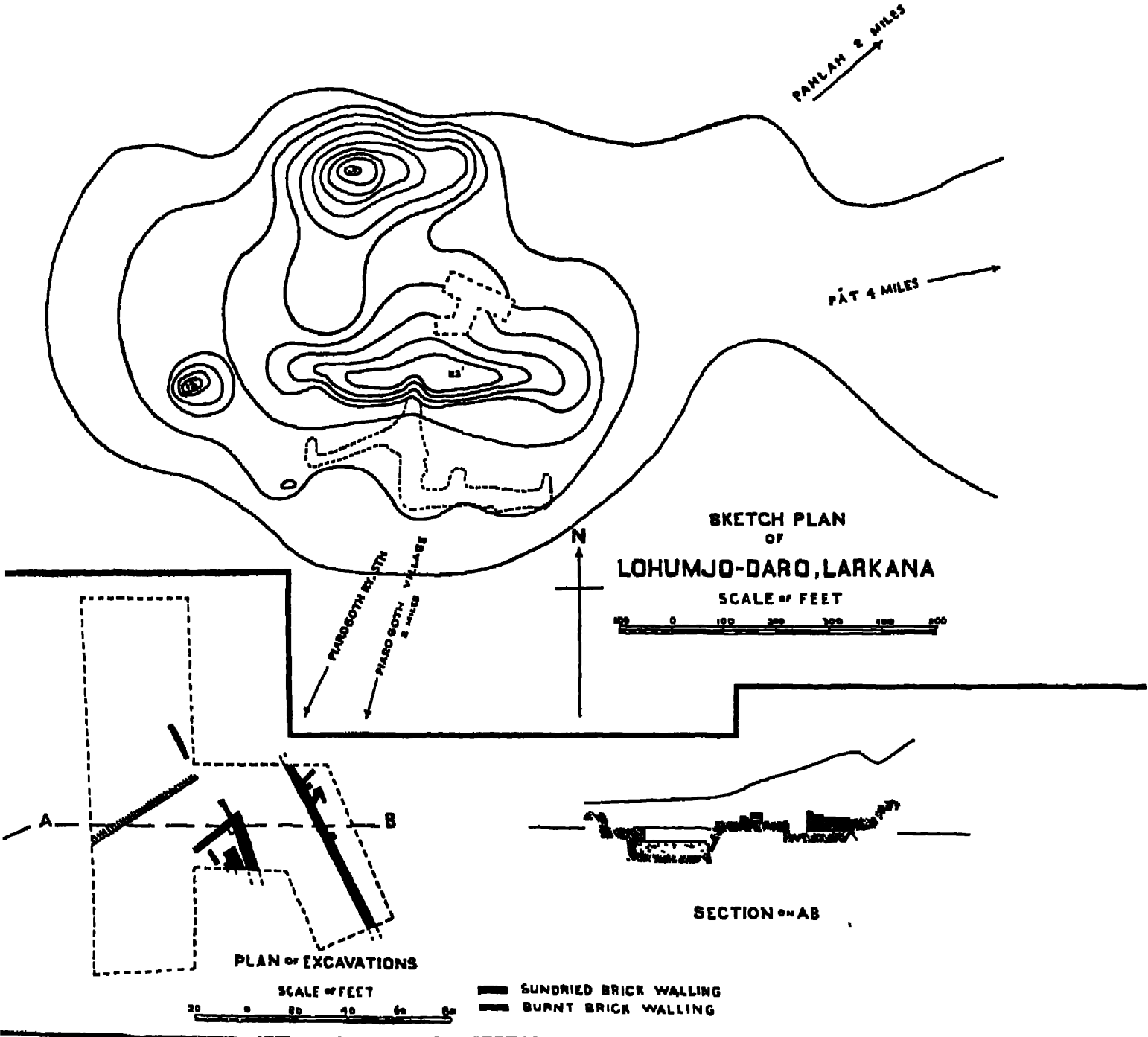
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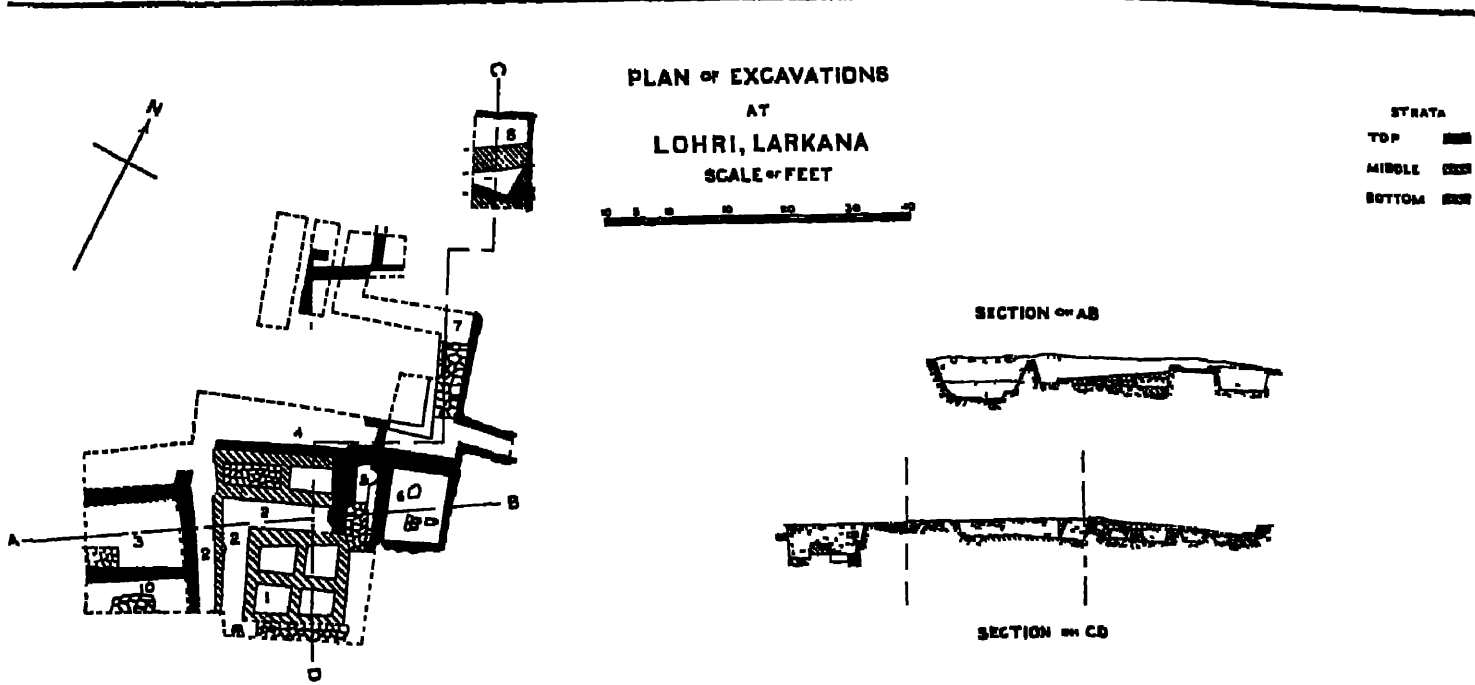
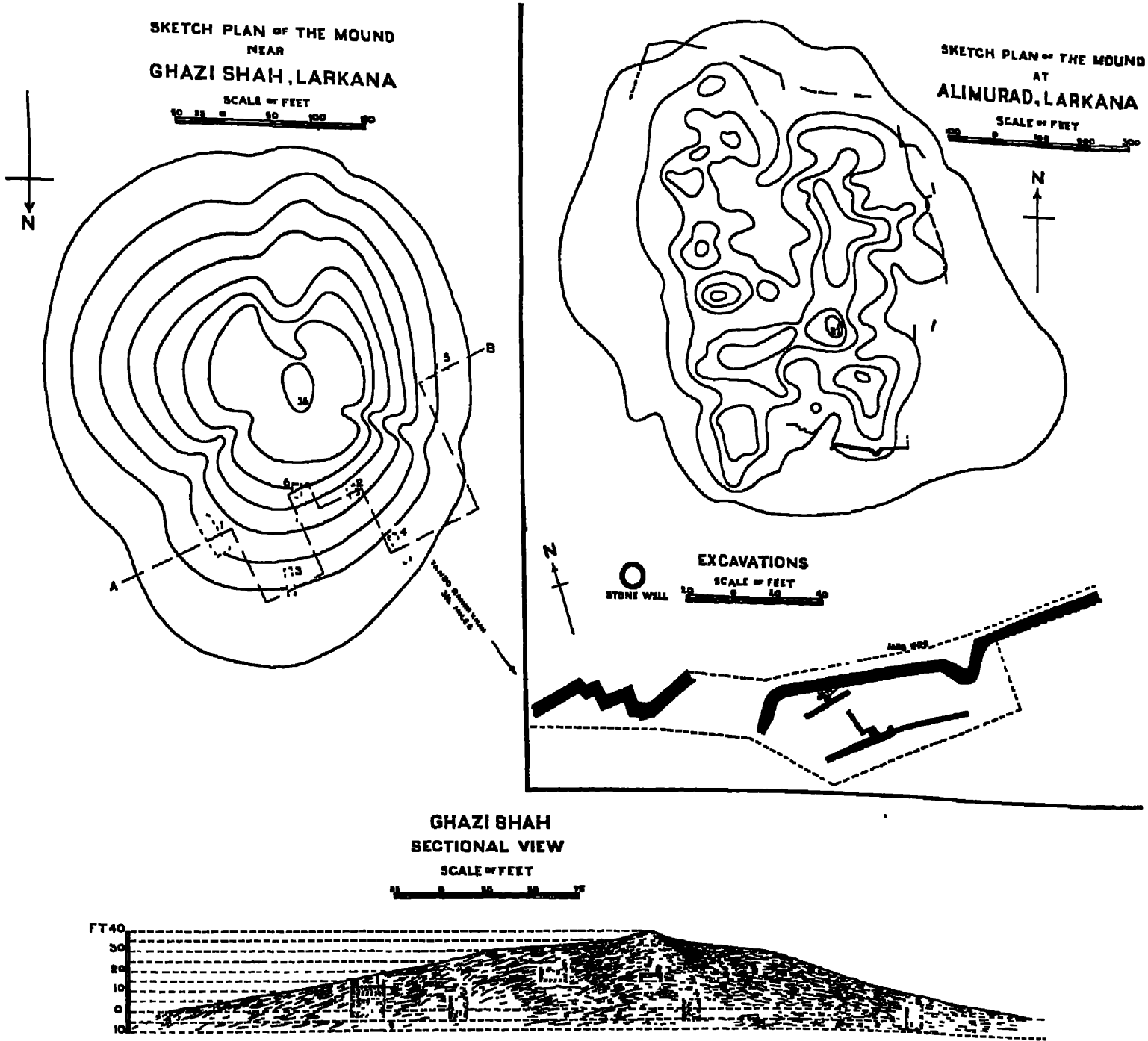


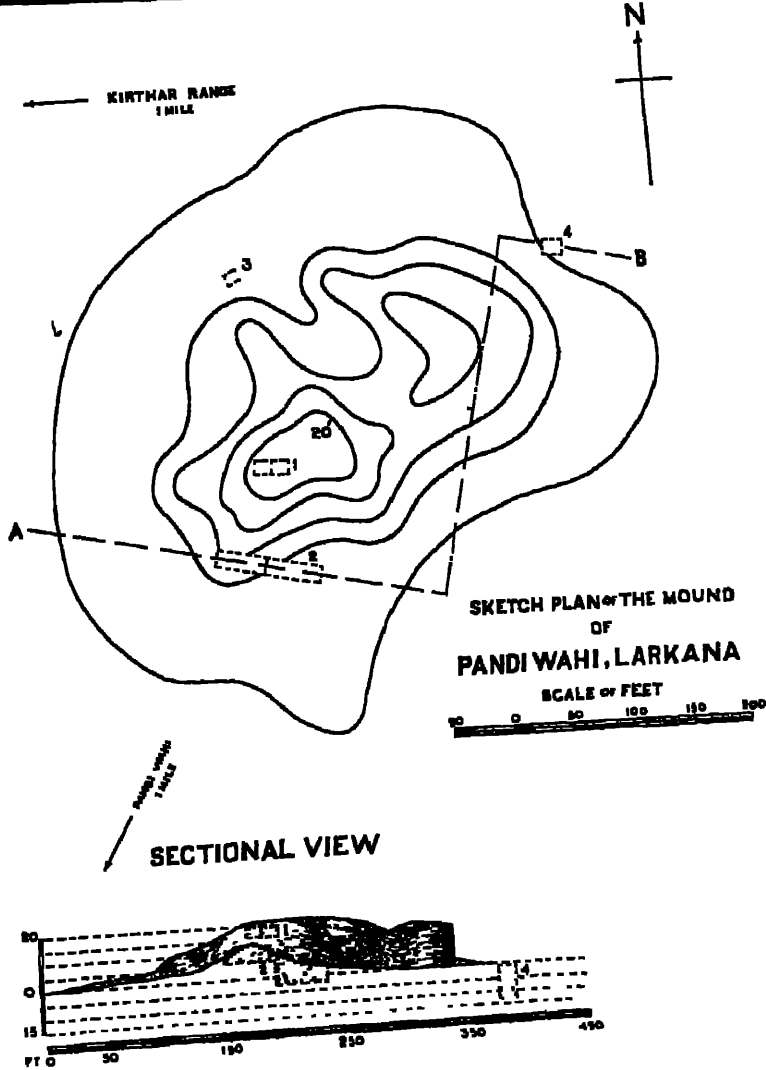
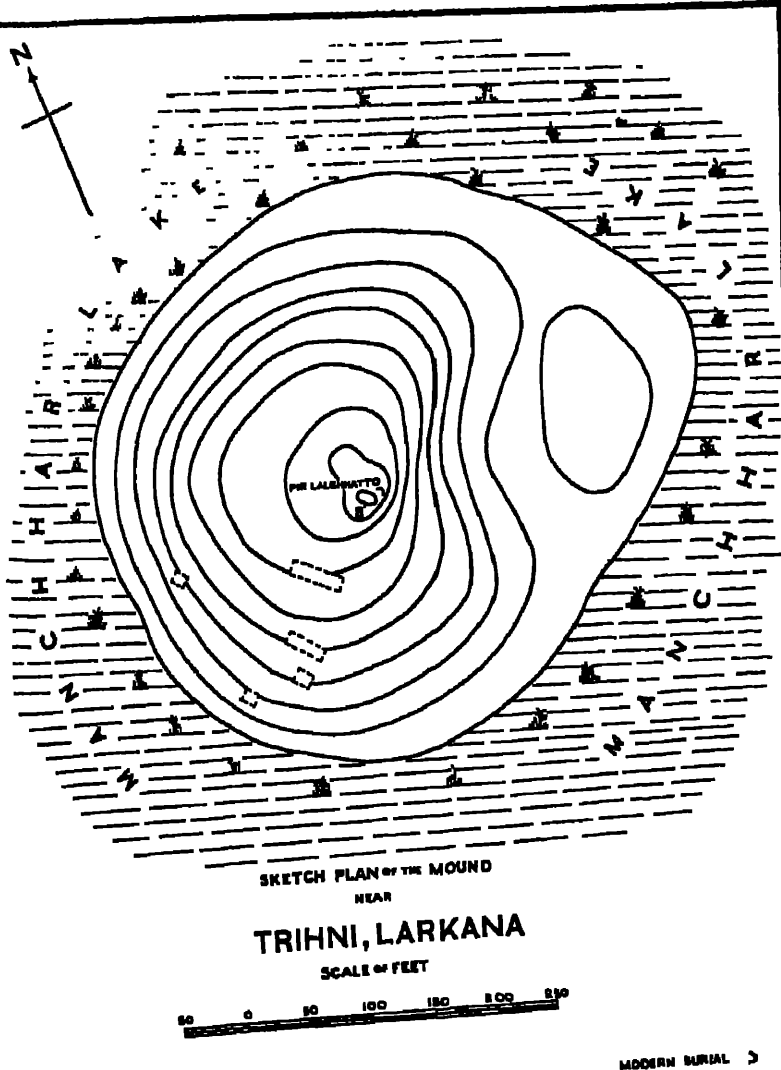
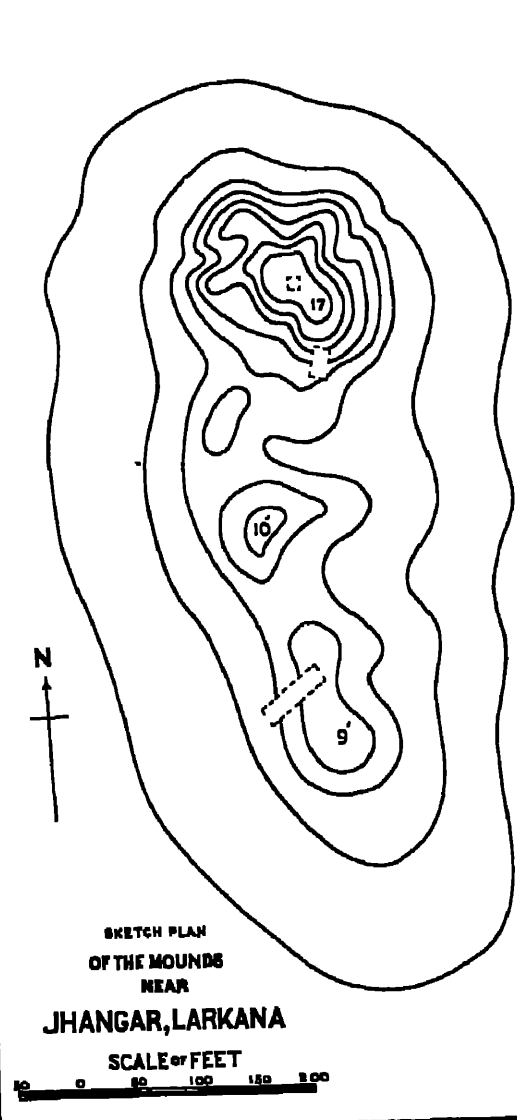
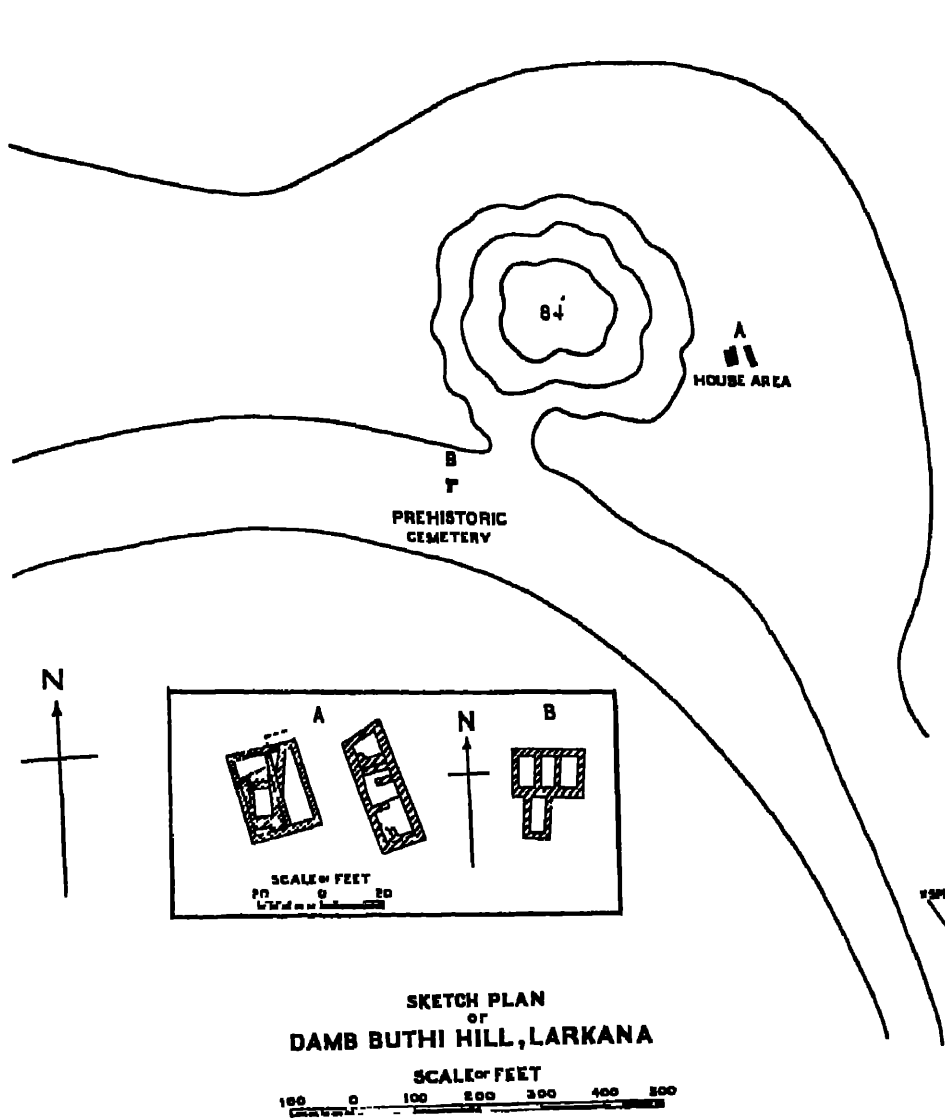
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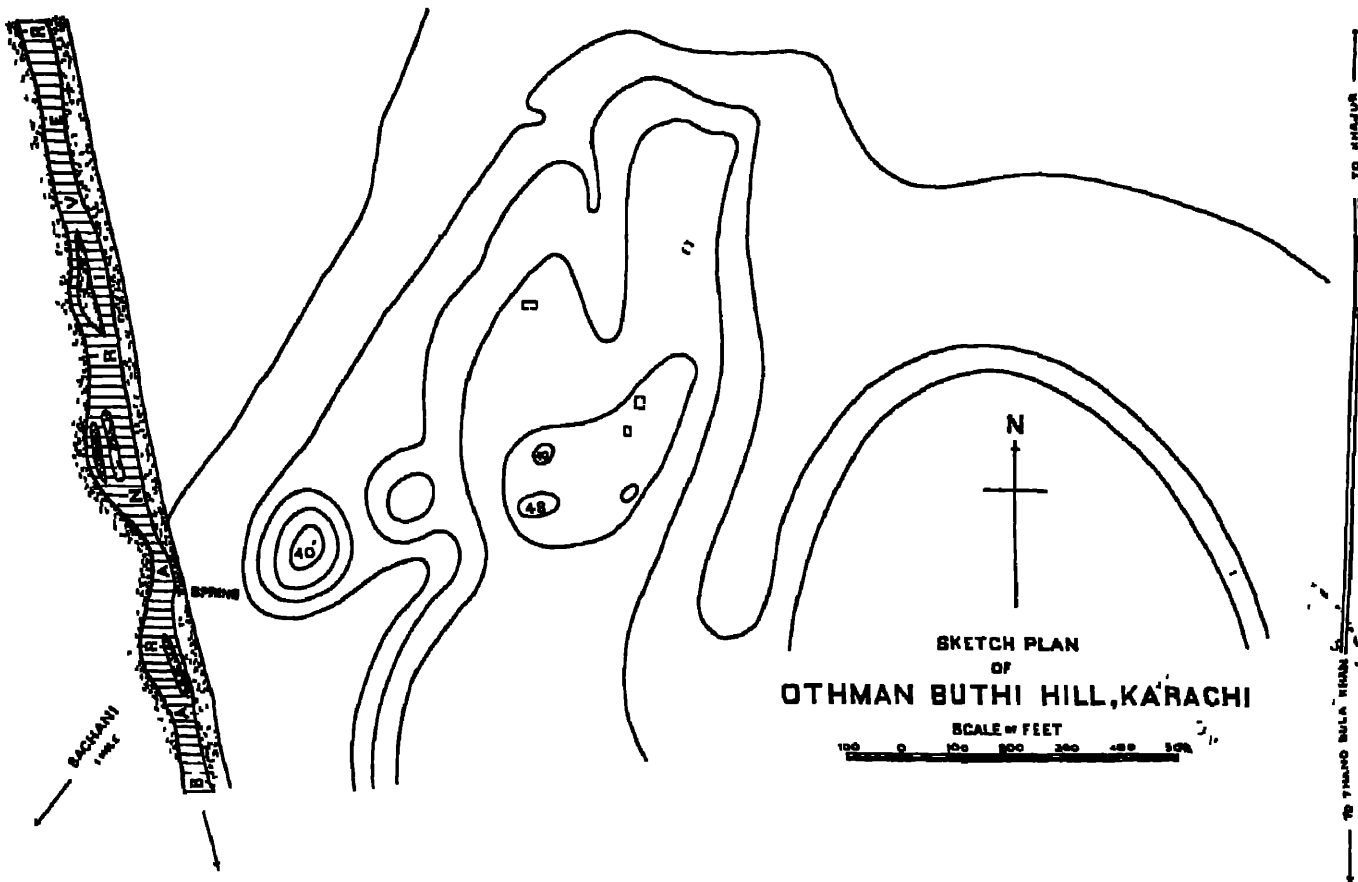


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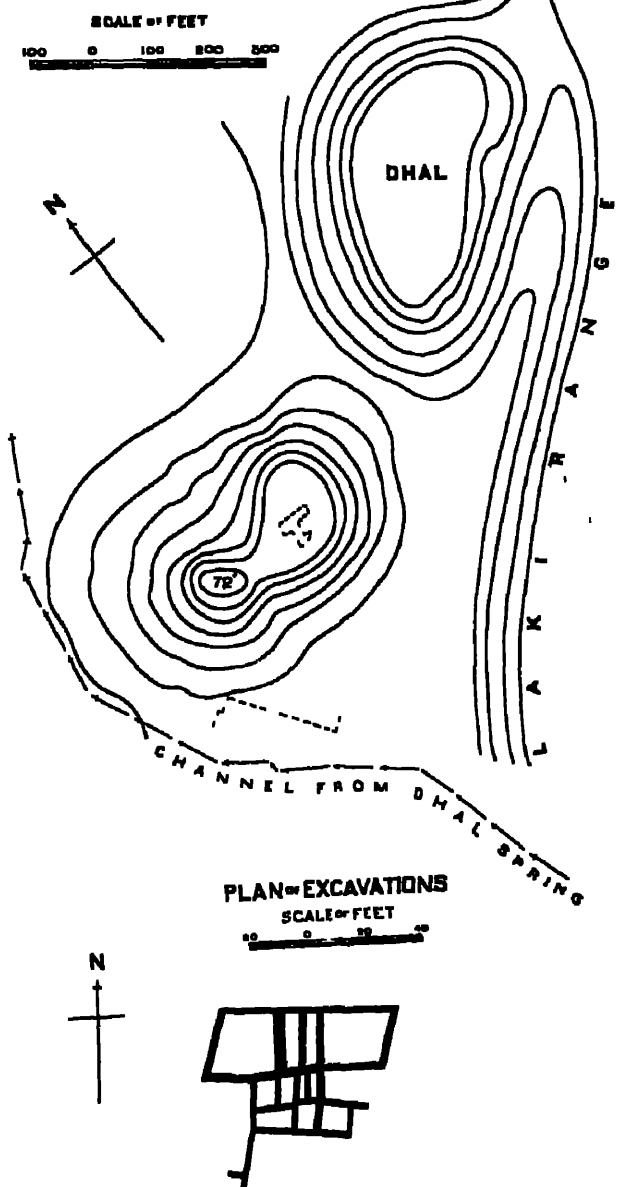








SKETCH PLAN OF THE RUINS
ON
DHAL HILLS, LARKANA



SKETCH PLAN
OF
KOTRAS BUTHI HILL, KARACHI

