

## MR. RATAN TATA'S EXCAVATIONS AT PĀṬALIPUTRA.

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THE great event of the year, in the Eastern Circle of the Archæological Department, was the announcement of the offer made by Mr. Ratan Tata of Bombay to assist the Government in its work of Archæological exploration. To this end Mr. Tata proposed to undertake, through the agency of a member of the department, the thorough exploration of one of the more extensive and important buried sites of India, and announced his willingness to devote a sum of Rs. 20,000 a year, for an unspecified number of years, to this purpose. The site selected by Mr. Tata, in consultation with the Government of India and the Director General of Archæology, was the ancient Mauryan capital, Pāṭaliputra, and to my intense satisfaction, the work was entrusted to me.

Pāṭaliputra, it need hardly be remarked, has long been looked upon as one of the most promising fields in this country for excavation, but the great extent of the site, and the depth at which the more important remains lie buried, had hitherto made the adequate exploration of the place seem beyond the means of the Department itself. But when it became known that Mr. Tata's princely liberality was to remove this difficulty, the problem was taken up in earnest, and the results of such tentative exploration as had proved possible in the past were studied afresh with a view to determining the starting point for the new operations. Sir John Marshall, to whom the site was thoroughly familiar, generously arranged to pay a visit to Patna early in December and go over the ground with me, in order to guide me on the spot as to where and how the work should be taken in hand. Happily it proved that we had both independently come to the same conclusions as regards choice of sites, so that the chief point for consideration was the conduct of the work, and the amount which it would be wise to spend the first season. Sir John Marshall was of opinion that both the Kumrahar site, previously dug in small part by Colonel Waddell, and the Bulandī Bāgh, a little north-west of the former, could be undertaken profitably, and the season's programme was accordingly drawn up on this basis.

Our reasons for selecting these two points were as follows. In 1895 Colonel Waddell, to whom is due the credit of having determined the exact site of Aśoka's classic capital, and of having demonstrated that it had not been washed away *in toto*

by the Ganges, made, or caused to be made, a number of trial diggings extending over a considerable area in modern Patna. In his subsequent report he brought together the more important of the literary references to the site, and essayed a contribution to the topography of the ancient city. Of his tangible finds, perhaps the most satisfactory individual piece was the fine stone capital, of seemingly Mauryan date, which now reposes in the garden of the Commissioner of Patna at Bankipore, and which was found, according to Colonel Waddell's Report, on the eastern edge of the Bulandī Bāgh. Colonel Waddell himself, for reasons which he has detailed, was inclined to the opinion that this site contained the famous monastery of the Buddha's Footprint. This identification is perhaps hardly calculated to meet with any very wide acceptance, but nevertheless, the beautiful capital recovered here was sufficient reason for believing that the site did indeed contain some massive and important building, whose recovery was likely to yield a wealth of decorative or other sculptures, and whose definite identification might be expected to shed real light on the vexed problem of the topography of the Mauryan capital. Thus the desirability of exploring the Bulandī Bāgh further was rendered obvious.

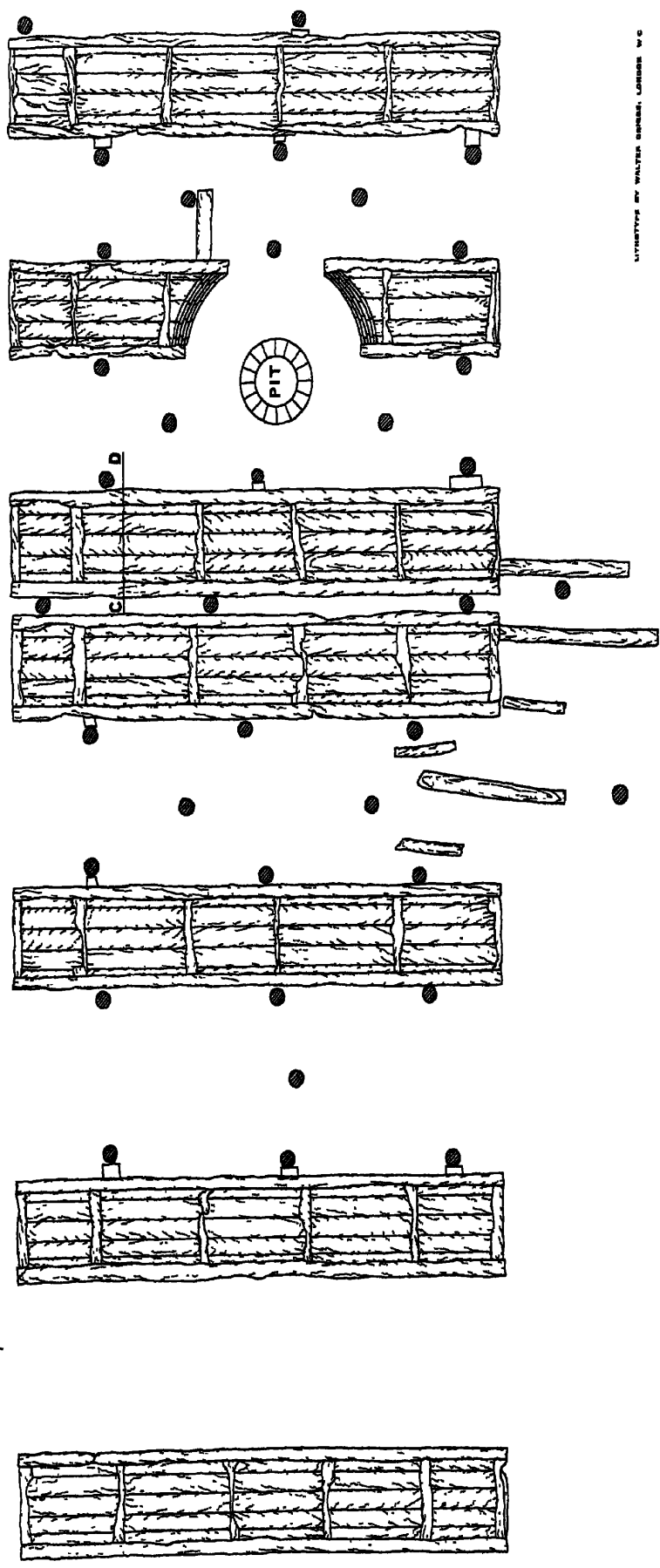
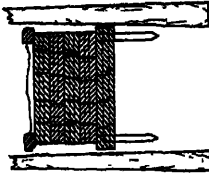
It will be as well, though, if I record, even at this point, that the season's operations at the site have led to no definite results. For reasons to be mentioned later, the work could not be begun here until late in the season, and this fact, coupled with that of the great extent of the area to be covered (our main trench was nearly 900 feet long) prevented our reaching any satisfactory depth. The Mauryan level was reached in only two places where trial pits were sunk, and in one of these ancient wood was found. Brick walls were met with higher in the soil over most of the area examined, and numerous minor remains were found, but none of these were of very special interest. The dearth of polished stone fragments was in the nature of a surprise, and the presence of large undressed stones, which Professor Jackson of the Patna College tells me must have come from Rājgīr, is an equally puzzling point. But the work which I was able to carry out here this year was too slight, and the results obtained were too inconclusive, to permit of any formal report at this stage. Colonel Waddell appears to have had very remarkable luck indeed in meeting with his beautiful stone capital so early in the trial stages of the work. It is to be hoped that similar good fortune will attend the prosecution of my own excavations next season.

As for the second of the two points selected, namely Kumrahar, the necessity for further exploratory work was beyond question from the beginning. Kumrahar itself is a modern village south of the present city of Patna, close to the main road which follows the railroad on the south; but the name is popularly given to a fairly wide stretch of country just to the south of this road, extending to a considerable distance to the west of the actual village. Much of this land is well raised above the general level, and all available evidences point to its having been in former times the site of extended and important occupation. Now at one point near the actual village of Kumrahar, and to the west of it, an old tank cuts into this high ground on the southern edge of the main road. This is called the Kālu tank. Some hundred yards to the south of this is another tank, the Chaman *tālāo*. Both

TATA EXCAVATIONS AT PATALĪPUTRA.



SECTION ON C. D.



LITHO TYPE BY WALTER BARNETT, LONDON W.C.

KUMRAHAR SITE : PLAN OF THE SEVEN WOODEN PLATFORMS.



of these tanks have ill-defined edges, and both are shallow, being consequently dry in the cold season. They suffice, however, to mark off the particular tract of high land which lies between them. This tract is a rough square, measuring something like 250 or 300 feet a side. A cluster of huts bounds this area on the south-east, and an orchard on the west, while at a fairly central point in the tract itself, there stands a modern Muhammadan tomb, built of brick, which is nameless and contains no visible grave; and which, furthermore, is in a dangerously ruined condition. The building has no architectural pretensions. This tomb, then, together with the jungle which has collected around it, forms an apparent but unreal division of the single tract into two plots of land, which may most conveniently be differentiated in this paper as the northern half of the site, extending from the tomb to the Kālu tank, and the southern half, extending from behind the tomb south to the Chaman *tālāo*. When Colonel Waddell was in Patna, his attention was drawn to this tract of land, and he had a certain number of pits dug here and there in the northern half of the site. As a result certain fragments of polished sandstone were recovered which he recognized to be of Aśokan manufacture, and which he proposed to identify as fragments of a particular Aśoka column for which there is literary evidence. The Chinese pilgrim, Hiuen Tshang, speaks of two definite edict pillars set up by Aśoka at Pāṭaliputra: one the Jambūdvīpa column, which lay to the south, and one the so-called Nīli column, which Aśoka is said to have erected in the midst of his palace enclosure and inscribed with a history of the palace city. As Colonel Waddell had thought to locate the position of the Jambūdvīpa column far to the south of this Kumrahar site, he not unnaturally concluded that the pillar fragments he met with at Kumrahar must be portions of this more northerly Nīli column. This assumption on the face of it was not unreasonable, and in deciding to re-open the exploration of the Kumrahar site, I, for my part, was not without hopes that Colonel Waddell's theory might prove to be correct, in which case we should find in the Nīli column not only an historical monument of enormous intrinsic value, but, more important still, a definite clue at last to the palace of Aśoka, which is obviously the main goal of the excavator at Pāṭaliputra. In any case it was already established that some Mauryan monument had certainly stood here, which could hardly fail to be of importance even if it did not turn out to be actually the Nīli column. Thus the further excavation of the Kumrahar site appeared desirable, even irrespective of the soundness of Colonel Waddell's deductions.

After arrangements with the owners of the land had been made for me through the courtesy of Mr. Weston, the Collector of Patna, the work was begun, with the permission of the Government of Bihar and Orissa, on the 6th January 1913. But, as at first the expense was to be met out of my own office budget, pending the completion of the negotiations between Mr. Ratan Tata and the Government of India, it was not practicable to begin straight away at both the sites proposed by Sir John Marshall, and we accordingly commenced operations at Kumrahar only. From this time until the arrangements with Mr. Tata were completed, a sum of Rs. 4,952-0-6 was expended by my office. Thereafter, until the close of the season's work in May, the expenditure at both sites amounted to Rs. 15,000-0-0, and this was wholly met by Mr. Tata. The total is somewhat exceptionally large for work of this kind in India.

but it is explained both by the area we covered and even more especially by the great depth to which the excavations had to be carried. The maximum number of labourers employed at any one time was something over thirteen hundred. It goes without saying that without Mr. Tata's generosity it would have been out of the question for the Department to have conducted the work on anything like this scale.

The configuration of the site at Kumrahar left very little choice in the matter of aligning the trial trenches. But, as I was anxious to make as thorough an examination of the area north of the tomb as was possible, I laid out three parallel trenches running due east and west between this tomb and the Kālu tank. Three other trenches crossed these at right angles, and were extended up to and over the edge of the tank on the north, and also to the south of the tomb where it was possible to do this without needlessly sacrificing standing trees. In general, however, it seemed best to devote most of our attention the first season to the northern half of the site. The experience of previous excavators in this general neighbourhood had led me to expect my principal monuments, or rather their ground level, at something like 20 feet below the present surface, and I had been told that the soil round about was very soft, and not only apt of itself to cave in, but rendered still more dangerous by being banded here and there with sand. This made it imperative to give a liberal amount of shoring to the sides of my trenches, if accidents were to be prevented when the lower levels were approached. But at the same time I was intent upon reaching these lower levels at the earliest possible moment, for obvious reasons. All these considerations taken together, therefore, led me to outline my six trial trenches in the first instance with a width of 5 feet only. These were the paths which I proposed ultimately to open up on the level of 20 feet below. To ensure the necessary sloping to the banks a further strip 5 feet wide was then marked out on either side of each trench, and taken down 4 feet perpendicularly as soon as the central trenches had reached a reasonable depth. On reaching this depth of 4 feet, the side cuttings were then narrowed by one foot and the excavation deepened by another 4, when the process of narrowing was repeated. In this way I gave my main trenches a head start, as it were, and as they grew in depth, cut down their banks at a somewhat slower rate in such a manner as to give them a slope of 1 in 4. Thus my three main trial trenches running east and west were designed to have a width at the surface of 15 feet, with an intended width of 5 feet, 20 feet below. This it was noped would constitute a really thorough examination of this northern half of the site, for the width of this tract is not much more than 100 feet, and it seemed impossible that our trenches could conceivably miss anything of magnitude or structural importance at any rate.

Colonel Waddell, it will be remembered, had found a few fragments of polished Mauryan stone. These he states were met with at a depth of twelve feet, just underneath certain brick walls which he assigned to the mediæval period, and which were shown by their position to have been erected after the destruction of his pillar. These so-called mediæval brick walls very speedily began to present themselves in our trenches, as the tops of many of them lay but a few feet under the surface. Over the major portion of this northern tract, however, we encountered brick débris

instead of walls, and this débris was found to extend like the walls themselves down to a depth of some 7 feet or more. This evidently gave us what was the latest real level of occupation at this site, for neither the solitary Muhammadan tomb now standing, nor stray walls here and there which we met just under the surface, could be said to constitute any definite level worthy of consideration. Colonel Waddell's assignment of this main superior stratum to late mediæval times appeared, however, to be erroneous. The construction of the walls, wherein the bricks were laid without mortar; the very large size of the bricks themselves, which while being long and wide were generally of little thickness, and, more important still, the nature of the minor antiquities associated with these walls, all pointed to their being older than had been assumed, and compelled their assignment to the Gupta period at latest.

But although these brick structures were thus seen to be of very respectable antiquity themselves, and although it would have been more satisfactory in many ways to have cleared this upper level first, the greater importance of the expected remains lower down necessitated my disregarding these Gupta buildings at first and pressing on toward the lower levels. But in doing so the brick walls were everywhere either left intact, or minutely measured, drawn and photographed before removal, where removal proved unavoidable. Thus a permanent record of this stratum has been preserved, and is published with this paper (Pl. XLIII).

As soon as we passed the level of these walls, evidences accumulated which led me first to doubt and then within a short time to discard finally Colonel Waddell's theory regarding the Nili column. In all of our trenches, and, as the work progressed, in all portions of the site, substantial pillar fragments were encountered showing that polished surface which we ascribe to Aśoka. This of itself might not have sufficed to disprove the previous theory, but it was observable that these fragments were of widely varying colour, ranging from a definitely red tone to a neutral grey. This alone made it seem doubtful if they could all be pieces of one and the same column; and besides this, there seemed to be too many of them. The diameter, again, which was deducible from our fragments, was noticeably less than the diameter one would have expected for an isolated edict pillar, as it appeared to work out, so far as could at first be judged, at almost exactly half the diameter of the Aśoka monolith at Bakhra. This proportion was confirmed by the discovery of what was clearly enough a fragment from the top of a pillar, containing a part of the deep round orifice intended to take the metal bolt which held in place the capital or whatever else surmounted the column. From this fragment it became clear that the diameter of the pillar at top was only some 20 inches, whereas the Bakhra column at this point measures a fraction over 3 feet. The inference was thus inevitable that the ground we were excavating covered the remains, not of one huge monolithic edict column, but of an extensive building of some sort with a number of monolithic pillars.

As soon as this point was determined I gave orders that none of the stone fragments should be moved. Theretofore such pieces as had been met with had very naturally been taken up and brought together in one place to the number of fifty or more; but not of course, until the exact depth and position of each fragment

had been carefully recorded.<sup>1</sup> Thus this removal involved no loss and did no damage, but at the same time it seemed possible that it would be easier for me to judge of the form and position of the building if I could actually see the several fragments in their relation one to another. The pieces were so scattered that this had not appeared important so long as we were working on the theory of the Nili column.

The first result of this altered method was a false clue. On the northern side of our central east-west trench a large fragment was found, lying obliquely to the trench itself, with the one end north-east and the other south-west. In almost exact alignment with this another massive fragment appeared just across the trench and at the same level. This obviously suggested a broken column lying prone in this oblique position. I accordingly made a very narrow cutting along the line of these two seemingly connected fragments. Confirmation of the theory was then apparently found when in this cutting we came across a third piece further to the south-west; when this proved to be only one of a heap of fragments, hope kindled brightly. Surely this must be the main portion of the pillar whose upper pieces we first discovered, and surely also down below must be the base or pedestal, presumably still *in situ* if we could only find it. The encouraging pile of stone fragments was carefully laid bare without disturbing a single piece until further clearance became impossible. The pile was then photographed as a permanent record, and the pieces were carefully removed. Plain earth appeared; or rather earth with a very large admixture of ashes. It seemed possible, however, that the pedestal might still be lower down, supposing it to have been partially buried before the column was shattered. So we continued. At a depth of about a foot, another stone was struck. Hope kindled again. But as the clearance advanced it became evident that instead of the pedestal we had a second accumulation of fragments. This was certainly very mysterious, but the previous process had to be repeated. The pile was cleared, photographed and removed. Plain earth again! Never mind, we again dug downwards. Another stone, a fresh hope, another and third pile. What could it mean? This also was registered and taken up. But underneath was nothing, absolutely nothing, down to a depth of 30 feet.

This was the first utterly puzzling development at Kumrahar. It seemed inexplicable. How could the fragments of a shattered column fall in such fashion as to lie in three heaps, one above another, each separated from its neighbour by an intervening foot of earth? The problem was not solved for many days.

However, the discovery of a fresh accumulation of stone fragments at some distance north-west of the former place afforded opportunity for a fresh effort, and we set to work again to search for the pedestal in this case also.

Meanwhile we had found, close to the northern edge of our northern east-west trench, a smooth slab of stone bearing in low incision an admirable figure of the *triratna* symbol, the conventional trident representing the Buddhist trinity, with the Wheel of the Law underneath (Pl. XLVI *b*). The bottom of this slab was manifestly broken off, and as I judged this to be a likely place for an inscription, I gave

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<sup>1</sup> For the registration of antiquities at Kumrahar I am indebted to Mr. Dikshit, a Government scholarship holder in our Department, whose services were generously placed at my disposal by Sir John Marshall.



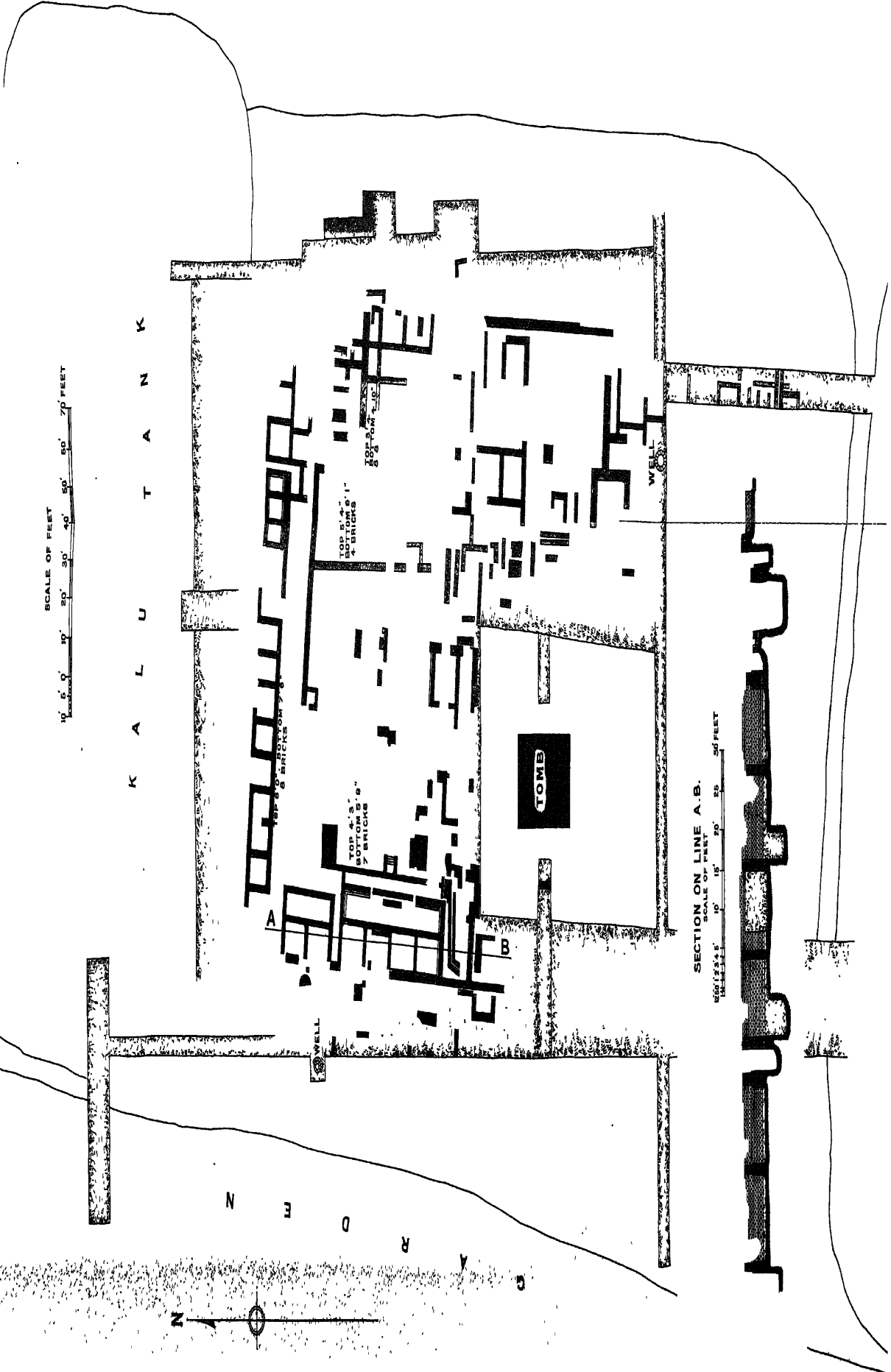


TATA EXCAVATIONS AT PATALIPUTRA.

SCALE OF FEET  
0' 10' 20' 30' 40' 50' 60' 70' FEET

K A L U T A N K

G A R D E N



SECTION ON LINE A.B.

SCALE OF FEET  
0' 10' 20' 25' 30' FEET







orders to have a narrow slice taken off the north bank of the north trench to see if we could not find the missing portion of the *triratna* slab. This was on the 5th of February. By the evening of the 6th the cutting had advanced to such a depth that what appeared to be three piles of stone pillar fragments began to emerge. This point was reached just at the close of the day's work. The night afforded opportunity for the due consideration of this new development.

The fact that they were really three piles of fragments was speedily ascertained on the morning of the 7th. I then had them cleared as rapidly as possible, took their middle points as accurately as these could be determined, and measured them. Let us call the piles A, B and C (Pl. XLVII *a*). They were all in one straight line east and west, and lo! the centre of A was 14 feet from the centre of B, and the centre of B was 14 feet from the centre of C. This was indeed a clue. Trial pits were speedily sunk in the same alignment 14 feet to the west of A and 14 feet to the east of C and, to our immense delight, piles of pillar fragments were found in both positions. The scales had fallen from my eyes. I looked about me, and saw that the heap of stones where we were searching for the second pedestal seemed to lie at a right angle to the obvious row of columns we had just discovered. Then I remembered that in that same line, farther to the south, one solitary fragment had been met which was still lying in position. The measurements were soon taken; the heap of stones was 28 feet from our northern row, and the solitary stone on the south was 28 feet from the pillar fragments. Pits at the intermediate points disclosed the expected accumulations, and other pits sunk in various places by measurement, on the basis of evidences which then for the first time acquired significance, yielded the desired result infallibly and the leading problem of the excavation was solved. Whereas when the work began that morning of the 7th February, all that could be affirmed was that we seemed to be somewhere near some Mauryan monument, by the evening of that day we had definitely proved the fact and actually located five parallel rows of monolithic columns, with evidence for at least six columns in each row. That the northern half of the Kumrahar site marked the position of a mighty pillared hall of Mauryan date, and thus the first structural building of the Mauryan period to be located in India, was no longer a hypothesis but an established fact.

After determining the existence and main characteristic of the building, the first desideratum appeared to be to learn its extent. I accordingly selected, as involving the least digging, that row of columns which ran east and west under the north bank of our northern trench, and the row at right angles to this in our central cross trench running north and south, and proceeded to dig four series of pits to the cardinal points. At the same time innumerable other pits were started throughout the area within the known aisles to establish the existence of columns at the points theoretically indicated. This it was hoped would give us both the extent and the ground plan of the building. We were, however, able to improve upon these methods later on.

For it soon became apparent that the puzzles and problems of Kumrahar were not all solved by our finding the clue to the plan. From the very beginning of the excavations the presence had been noted of a thick layer of ashes just below the

Gupta walls. This was of course a feature of interest, but no special importance appeared to attach to it. It lay too high in the soil for any connection to seem probable between it and the Mauryan building. I took it therefore as an indication that some missing structure had been burnt in the period just before the Guptas built, but there seemed to be nothing left from which one could deduce anything as to its nature. I assumed it was a wooden building, possibly assignable to the early Christian centuries, since certain seals and coins of an early date were found among the ashes or just close above them. As the work advanced, however, my attention was drawn increasingly to these ashes, and the more I considered them the more doubt was cast on the tenableness of my over-simple assumption. In the first place, it became evident that our stone fragments were in the main among these ashes, and not below them. Both ashes and pillar fragments were found to lie in a single stratum of varying thickness, some 8 feet below the surface, and just underneath the Gupta walls. Was this, then, perhaps the original level of the Mauryan building after all, only 8 to 9 feet under the surface? It looked surprisingly as though this were the case. But this was of course entirely opposed to all previously acquired data on the stratification of Pāṭaliputra, and there were insurmountable objections to the theory on the spot itself. For example, if this was really the Mauryan level, how came it that we found so many stone fragments at still lower depths? For fragments did occur, down to a depth of 17 feet or over. And how came it that at this lower level we also found a limited stretch of what looked strangely like a bit of wooden flooring in position? These facts were not readily harmonized with the conclusion above-mentioned. But a more puzzling feature still remained to be considered. The ashes, it was found, did not, as at first appeared, extend in one unbroken level across the site. They showed curious depressions here and there. Did these perhaps indicate merely the irregularity of the surface on which the ashes fell? One would think so ordinarily. But it became evident that this was not the case, when, on examination, it was found that the depressions went down to a great depth, and with perpendicular sides below a certain point. It was furthermore ascertained that they occurred at regular intervals so that the vertical sides of our trenches, deepened, presented the singular spectacle of upright walls of clay enclosing a curious formation of ash which resembled nothing in the world so much as an extended rose-bower, or a pergola drawn in section. Another curious feature was the fact that our accumulations of stone fragments lay, as a rule, just above these vertical bands of ash, although in a number of cases fragments did occur at much lower levels among the ashes. Always among the ashes, however, and only among the ashes. Except where these vertical lines of ash came down, the soil was utterly devoid of human evidences everywhere between the main ash stratum and the wooden floor far below. Where the ashes descended perpendicularly, however, stone fragments, brick débris, nails, and even bits of wood occurred to considerable depths, almost, and in some cases quite to the level of the wooden floor itself. Elsewhere we found only yellow clay.

It was a long time before any explanation of these extraordinary phenomena occurred to me. Nor is it any wonder, really, since collectively they formed as baffling a series of unprecedented and unparalleled *Erscheinungen* as one could well

imagine. But then at last a very simple explanation dawned on me, and one which, fortunately, has squared with every fact we have been able to observe this season. The columns of the pillared hall had sunk!

I chanced to be on the train for Calcutta when this explanation flashed on me and at the earliest opportunity made a point of consulting with one of the leading building-contractors in that city as to the possibility of heavy columns sinking in the soft alluvium of the Ganges valley. It was of course impossible to burden this gentleman with the long tale of my evidences, and it is doubtful if he would have heard me any way. For he flatly refused to believe in any case that it was a physical possibility for however heavy a column to sink bodily into the earth and there be swallowed up for ever, which was the rather startling question put to him. Presumably the idea struck him as ridiculous, but courtesy and kindness led him to disguise the fact, if so, and he patiently explained the principle on which the modern builder sinks his piles, until the friction of the earth along their sides at last becomes so great that no weight added on above will sink them any further.

Somewhat reassured by this emphatic statement on the part of one whose experience gave his words authority, I returned to Bankipore, with renewed hope that the columns might be recoverable after all. We could find no traces of them, however, anywhere, and the evidence for the sinkage theory seemed so overwhelmingly convincing that necessity demanded the fullest possible examination of it. Further experiments established the fact that each and every one of these vertical lines of ash, when seen in section, flared at the top in horn-like fashion, the wide end being of course the point of union with the main ash stratum. Moreover, when the line was cut across horizontally anywhere below the horn-like portion, or even through this, the form shown was invariably a circle. The third point was that such stone fragments as occurred within these circular tubes of ash were not in any position in which they could conceivably have fallen in the first instance. Witness the three curious piles of stones we had removed in hunting for the first pedestal, where earth intervened between the several accumulations. The only possible explanation seemed to be that, having originally fallen on the level of the main ash stratum, they had subsequently slipped or fallen down, at varying times, into their present position. Indeed, up nearer to the main stratum, where the lip of the horn began, we could observe stone fragments visibly toppling over toward the upright tube as though even now in the process of being drawn into it. Incidentally this explained the horn itself. Moreover, some of the Gupta brick walls, even, showed a marked subsidence here and there, but only where they happened to approach a tube of ash. This latter fact was specially important, as it explained our finding brick débris among the ashes and the stone fragments at low levels, and also how it happened that so many of the Gupta walls had been overthrown. The chain of evidence was thus complete, and despite the pronouncement in Calcutta, and despite also the disappointment to my hopes, I was compelled to accept the sinkage theory as the only possible working hypothesis for the excavation. Its importance demands that it be now set forth as a consistent whole.

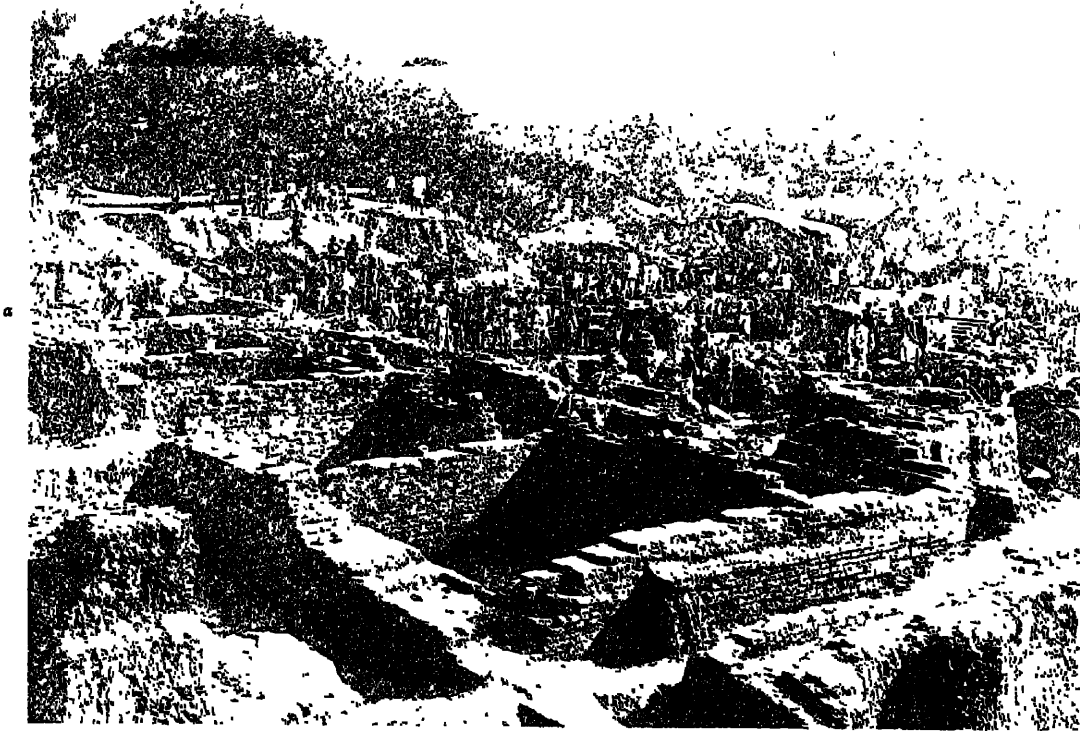
In the first place, the primary fact that between the main ash stratum and the Mauryan floor the earth is free of human evidences, can only be explained,

apparently, by assuming that this clay is the deposit of a flood. The occurrence of a belt of virgin soil 8 or 9 feet thick between two levels of occupation is wholly inexplicable on any other hypothesis I can think of, and we know that floods of this nature have occurred at no great distance from Patna, and that a similar depth of riverine deposit occurs around the base of the still standing Aśokan column at Bakhra. The flood at Kumrahar evidently took place while the building was still standing, and the silt deposited by it not only covered the floor some nine feet deep, but incidentally buried the standing columns to the same depth, or for nearly one-half their entire height, and those that were so buried were of course thereby held upright from that time onwards. During the course of this flood, therefore, the building must have presented an appearance similar to that of some of the temples in Kashmir, where to this day the tops project above a flood which conceals all the plinth and much of the height of the building.

How long this flood endured we have no means of knowing. Neither can we say with certainty at what period it occurred. It is possible, though, to make a reasonable conjecture as regards the latter point at least. We have seen above that frequently among the ashes, or closely on the same level with them, the excavation has produced coins and a few other remains of the early Christian centuries. These antiquities are certainly older than the Gupta brick walls. Had the flood not taken place before these early centuries, the presence of these early coins here would be curious indeed. In that case they should have lain on the level of the Mauryan floor, or close above it, if the building continued in occupation in its original condition during the period the coins were current, and if the flood intervened between their age and the coming of the Guptas. The inference is easy, therefore, and such evidences as we have make the idea seem probable, that the flood took place somewhere about the time of Christ, or in the centuries immediately following, and that the coins, etc., of this period which we find below the Gupta walls indicate a restricted use of the Mauryan building even in its imperfect condition after the flood subsided. The top of the silt must then have done duty as a floor; and although the building must have suffered sadly as regards loftiness and dignity, there is no reason to suppose that it was uninhabitable. If the columns were 20 feet high (they were presumably more) the flood would still have left some 11 feet or more between the silt and the ceiling, and this is no mean measurement for an Indian room to-day. It is thus both possible, and from the evidences probable, that for some time, perhaps even for centuries, the pillared hall was utilized as such after the subsidence of the flood.

However that may be, the hall was certainly burned down after the 9 feet of silt had been deposited over the floor; and as the Gupta buildings rest almost directly on the ash, we may conclude that this fire took place somewhere about the 4th or 5th century of our era. The Gupta walls can hardly be later than the 6th century in my opinion and may be earlier (Pl. XLIV). Fa Hien, it is true, declared at the beginning of the 5th century that Aśoka's palace was still standing; but, as regards the suggested 4th century date for the fire, we have no guarantee that Fa Hien ever set eyes on this particular one of the palace buildings, and as regards the 5th century date, it is not inconsistent with Fa Hien's statement. The





a. & b. KUMRAHAR: GUPTA REMAINS.



later date seems to accord with the majority of the evidences. Witness further the coins of Chandragupta II Vikramāditya, who reigned from 375 to 413 A.D.

Judging from the timbers that have been preserved to us, it is clear that the woodwork of the superstructure and the roof must have been extremely solid and massive, and that the heat of the final conflagration must have been enormous. It is evident that it sufficed to crack off innumerable fragments from that portion of the columns which rose above the silt, and also to expand the metal bolts which fitted into the socket holes observable in the top fragments of pillars which we have recovered. It is to this expansion of the copper bolts that I attribute the universal vertical cleavage which our large fragments show, and I am assured by Dr. Caldwell, Professor of Chemistry at Patna College (to whose learning and sympathetic enthusiasm I have been indebted for much help throughout the excavations), that the form of breakage shown by all these socket holes is precisely such as to confirm this theory. Colonel Waddell, having to deal with only a few fragments of one supposititiously single column, predicated lightning to explain the vertical cleavage he observed; but the impossibility of applying this theory to many scores of columns is too obvious to need emphasis. The main cause of the breaking up of the columns I therefore trace to the fire itself. But it is clear that much of the minor chipping of the stone was done deliberately by the Gupta builders, who used the pieces so derived in laying a rough pavement over a portion of the site. This shows clearly enough that these people knew of the existence of stone fragments at this place, and it is possible that some if not all of the horizontal breakages are to be attributed to them also. Many of the shattered stumps of the columns must have projected above the silt and ashes after the conflagration, and the Guptas may well have found it necessary to knock these off in the process of levelling the ground for their brick erections. But by far the major part of the breakage is undoubtedly due to the fire itself. This explains how it happened that the fallen fragments lay so close to their original positions as to permit of our recovering the ground plan from a mere measurement of these fragments as they lay. That this was possible is a very remarkable circumstance.

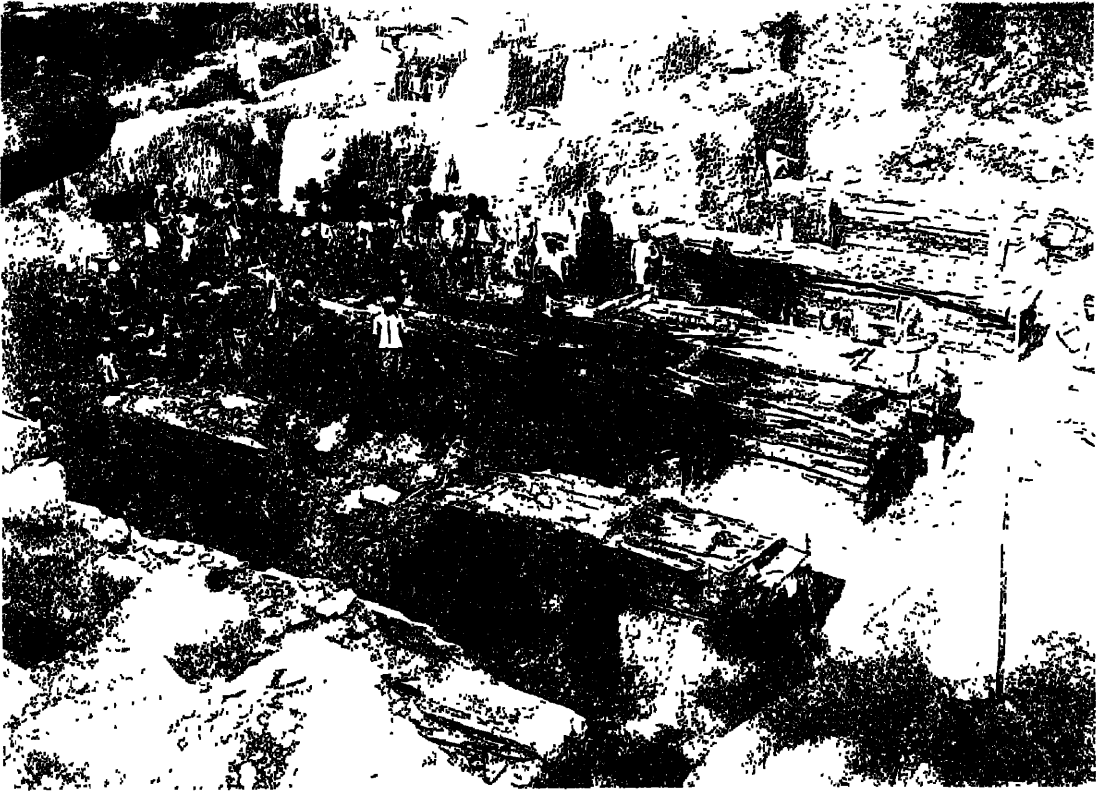
After the fire the then surface of the ground, some 9 feet above the original surface of the Mauryan floor, was very thickly strewn with ashes and with the broken fragments of those upper halves of the columns which had been exposed to the fury of the flames. These latter lay prevailingly in heaps at intervals of 15 feet, corresponding with the original positions of the columns. And underneath these heaps still stood upright those lower halves of the columns which the silt had buried, and which, through the mere fact of being buried, escaped the destruction and disintegration to which the upper halves were exposed. The site was in this condition still when the builders of our brick walls came on the scene. They merely smoothed the surface and erected, just above the ash, those brick buildings which we now find prevailingly in a ruined condition. And we can see well enough why they were ruined.

At some time subsequent to both the fire and the erection of these Gupta buildings, when the level of the subsoil water had risen to soften the earth underneath, and when the wooden supports decayed on which the still standing but buried

shafts of the columns rested, these shafts inevitably began to sink, naturally in a vertical position. As the columns sank, they left vertical circular cavities in the silt which had enveloped them; and as these cavities lay just beneath the heaps of ash and fallen débris both these ashes and the stone fragments were drawn down into the vacua (Pl. XLVI *a*.) At the same time all those brick walls which happened to cross points where this subsidence was taking place, themselves collapsed, and their débris was drawn down into the hollow tubes along with the ashes and the stones. This falling mass, however, could not sink indefinitely, but only through that portion of the cavity which was not filled by an inrush of earth from the sides. Throughout the 8 or 9 feet of dry clay which lies between the main ash-stratum and the floor, the earth was hard and firm enough to hold, and presented no lateral thrust to fill the hole. But below the level of the subsoil water the conditions were radically different. Here the saturated earth is extremely soft, and as the heavy shaft passed downwards through this belt, the mud inevitably closed in above it and itself filled up the vacuum. Thus at this point the débris following after the column from above was naturally brought to a halt. Doubtless the heaviest pieces of the stone débris were able to penetrate this saturated soil, and we can picture these as following the descending columns even now (Pl. XLVIII). But the main volume of ash and stone was of course arrested where the lateral filling set in, that is to say at the level of the subsoil water, which very nearly coincides with the level of the ancient floor.

The question now arises how fast and how far these columns can have sunk. We may imagine that at first they sank but slowly. So long as the major portion of their lengths was embedded in the hard clay above the subsoil, this clay must have exerted considerable pressure, and its friction retarded the sinking very greatly. It is to be noticed, however, that the weight of these columns per square foot of basal surface was great enough to overcome these originally restraining forces. Therein lies the fallacy of the Calcutta pronouncement, for it is precisely at this most vital point that the analogy between our columns and the illustrative pile breaks down. In the case of the pile, it is the continually growing length that involves the increase of lateral friction upon which its final halt depends. In the case of our columns, however, the length was a fixed quantity from the beginning. Instead therefore of the restraining friction increasing as the columns sank, it very rapidly decreased. For, granting a weight sufficient to move the columns downwards from their original position, it is clear that, as they sank lower and lower, the friction exerted by the dry earth became increasingly less, as more and more of the column passed into the soft subsoil. This latter medium can have exercised only a comparatively negligible amount of resistance, so that finally, when the top of the descending column got right below the floor, and the entire length was free from the restraint of the dry soil, the rate of sinkage must have reached its maximum. From that point onward the columns must have sunk with fair rapidity, and so far as I can perceive, must still be sinking now.

There are, however, two contingencies, either one of which may have sufficed to bring them to a halt. The first, obviously enough, is a solid stratum somewhere in the soil. If any such belt exists, our columns are presumably lying on it, and whether they are recoverable or not will depend upon the depth at which that belt



a. KUMRAHAR: WOODEN PLATFORMS IN MAURYAN PALACE, FRONT VIEW.



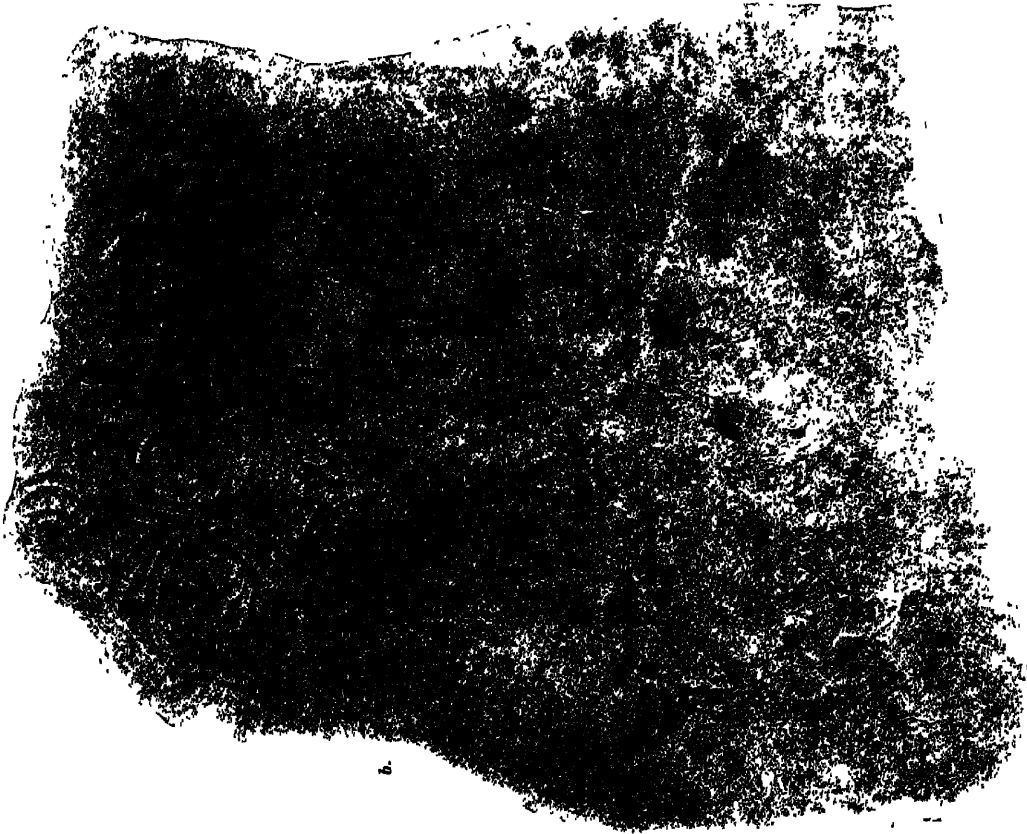
b. KUMRAHAR: WOODEN PLATFORMS IN MAURYAN PALACE, SIDE VIEW.



TATA EXCAVATIONS AT PATALIPUTRA.



a. KUMRAHAR: ASH PITS OF MAURYAN COLUMNS.



b. KUMRAHAR: TRIRATNA SLAB OF THE SUNGA PERIOD.





occurs. To my regret, however, I must report that so far as I have been able to test the point, no such stratum appears to exist within a hundred feet of the surface. Mr. Sherrard, of the Agricultural Department in Bihar, very kindly gave me the use of his boring apparatus and his trained men to drive down a tube for the examination of the lower strata. But the stratification thereby disclosed is not encouraging. Between the Mauryan floor and a depth of 30 feet occurs only the soft clay of the subsoil. Below this point the clay is sparingly mixed with small and isolated kankar nodules, which get larger, but not noticeably more numerous, as the depth increases. Below this level comes fine sand. It may perhaps be significant that, at depths reported to me as 84, 90 and 91 feet, the tube came down upon hard obstructions in three different portions of the site. A good deal of difficulty was experienced in penetrating further at all three points, and it is barely possible that the first of the three measurements named above was inaccurate, and that something like a solid stratum does exist some 90 feet below the surface. It does not seem probable however, for there was no apparent thickness to the obstructions met with. Once the tube had fractured them, it passed down readily enough. The material, I may add, appears to be calcareous sandstone. The *mistris* managed with some pains to bring up portions of the broken obstructions in all cases, and two of these I sent for examination to Mr. Coggin Brown of the Geological Survey. This officer very generously devoted considerable time to their examination, and reported that one piece was calcareous sandstone, and the other a hardened kankar. Both these specimens came from one and the same boring. The other two yielded the calcareous sandstone only, so far as I can judge. But the evidence appears to be against the occurrence of any real stratum of this sort. The final depths reached, I should add, showed only a coarser sand, which filled the boring tube and clogged it to such an extent that deeper probing was impracticable, and we had to cease our tests a little more than 100 feet below the surface.

As far as any overtaking of our columns is concerned, therefore, the boring operations were not successful, and it appears only too probable that they have sunk beyond recovery. But the results obtained confirm the sinkage theory perfectly. When Mr. Sherrard's men first came to me I was informed that in other parts of the district, where these *mistris* have had great experience in sinking tube-wells, the usual rate at which the tube could be driven was 8 feet a day. At Kumrahar, however, the tube went down 42 feet the very first day, or, with the 14 feet of preliminary excavation we gave it, a total of 56 feet from the surface. That this was unprecedented in the experience of the workers was only too evident from the almost comic dismay of the man in charge, who appeared to be distressed lest his superior officers should hold him to a similar rate of progress in future. He apologized for the fact as such by saying he had never seen the soil so soft anywhere else in either Patna or Gayā Districts, and there is no reason to doubt the truth of his assertion. Granted, though, that the soil at Kumrahar is so exceptionally soft, the sinking of the columns becomes a physical necessity.

I would point out furthermore that the fact of our not having overtaken the columns within 100 feet is no argument whatever against their having sunk. For reasons mentioned above, it appears probable that they began this sinking process

some thirteen or fourteen centuries ago, so that if they had sunk only 1 foot in ten years they would still be below the lowest point we were able to reach, and this is an incredibly slow rate of sinkage when the softness of the soil is borne in mind.

The other of the two contingencies likely to bring the columns to a halt remains to be mentioned. As the boring has established, the soil below a depth of 30 feet contains isolated kankar nodules. These are not thickly enough placed to constitute a solid stratum (witness the depth to which the tube descended the first day) but it is certain that as each column passed through this belt it must have struck against these nodules one after another, and, gradually accumulating them, must have pushed them downwards with itself. Some of these nodules must have been thus caught by the edge of the descending shaft, so that part of them projected as the column bore them down. The accumulation of such laterally projecting nodules, through a course of many centuries, will necessarily have extended the square area of the surface at the bottom of each column; and as the rate of sinkage is dependent upon the ratio of the weight to the square foot of basal surface, this rate must have been decreasing as the area grew. This process, if continued long enough, must inevitably bring the columns to a halt at last. But it is of course quite impossible to conjecture at what depth this will occur.

Such, then, is the interpretation and synthesis of the evidences at Kumrahar, so far as I am able to read them. The conclusions, startling as they may appear, are after all quite simple and reasonable, and are imperatively demanded by the facts. No other theory has so much as been suggested which faces these facts squarely, or which could possibly be invoked for an explanation of them. Nor do I believe that any other is either possible or necessary.

Only one detail requires to be mentioned as militating at first sight against my argument. Here and there, in the case of a few of the ash circles, we have found, at depths varying by 4 feet or more, but all 14 feet or over, fragments of wood in a horizontal position, which one is tempted to explain as portions of the original supports on which the columns rested. If this could be absolutely established, it would seem to involve the abandonment of the sinkage theory altogether, however much it might square with the other facts we can observe; for it is obviously impossible that the stone columns could have gone through their wooden supports and left no trace of their passage. In one single instance the wood in question really does look as though it lay in position, as though it were actually built into a sort of platform as it now stands; but even here further excavation is needed before the point can be finally determined. In none of the other cases are the appearances so favourable to this conclusion. The varying levels at which the fragments occur, are very direct evidence against their being remnants either of a floor or of isolated piles on which the pillars rested, for we certainly dare not assume that the several columns rose from a bewildering variety of levels. One further point to be mentioned is equally direct evidence against the wood being now in any original position, namely the fact that many of the fragments are isolated ones, and show unmistakable marks of having been charred by fire. Had they been fragments of either the original floor, or of foundations laid for the columns individually, they must have been protected from the flames by 9 feet of solid earth,

and their being charred is thus rendered a physical impossibility. They must, therefore, be pieces of the original roof, which have fallen into the cavities left by the sinking columns precisely as the ashes and stones and bricks fell in. This again explains the varying levels at which these wooden fragments occur. Thus even these do not demand any modification of our theory. There is no proof whatever that they lie as they were laid, and substantial reasons exist for believing the contrary.

Only one real alternative to the sinkage theory has been propounded, and that is the obvious one that the site has been devastated by human agency, and the unbroken bases of the columns, and all other usable fragments, including the capitals, been deliberately removed for use elsewhere. In other words, that the site has been used as a quarry for the value of its stone in these alluvial plains. This theory is superficially attractive, and is recommended by its simplicity, and by its abstract plausibility, and I myself should have been among the first to adopt it, had the visible facts of the case not prevented. These facts are one and all absolutely opposed to the possibility of such a thing. The remarkable regularity with which the fragments occur in heaps fifteen feet apart on the level of the ash stratum is the first obvious argument against it. Do vandals ever pile their wreckage with such mathematical nicety? The unbroken stratum of the ashes themselves is further proof; for could this stratum have remained undisturbed through quarrying? Indeed, this alone is completely subversive of the whole idea, for the belt of ashes has served as an automatic register of every act of vandalism or semi-vandalism that has taken place since the building was burned; and such sporadic diggings as the Guptas made, and such excavations as Colonel Waddell effected, are all infallibly registered and recorded by these tell-tale ashes in a manner which is as inevitable as it is unmistakable. Barring a few isolated spots, then, we can affirm positively that the soil has not been disturbed below the level of the main ash stratum. Again, if the columns were removed for use elsewhere, they must have been so removed before the Gupta brick walls were built above them, as many of these walls are still standing. But if this was so, how came their cavities to be filled with débris of these walls, which clearly cannot have existed at that time? This same argument is also valid against what is really the only possible theory as to how the columns could have been removed any way. We have to assume that, if they were so removed, they were first excavated, to set them free of their enveloping silt. Such other objections as I have raised above to this removal theory would have to go by the board, if it could be shown that excavations around each column had been made of a nature pointing to removal. Our vertical ash shafts would then be seen to be merely the cavities from which the columns had been dugged, and which the vandals then filled up with ashes and such stone fragments as they did not require. This would also explain the general depth to which the ashes go down, and such wood as occurs at a low level could then be assumed readily enough to be in its original position if necessary, the charred bits being understood to have formed part of the rubbish with which the vandals filled the holes left by the columns as they took them out. This theory would be overwhelmingly convincing if it were shown to be possible, but to my mind it simply defies credence for the

following very simple reason. The diameter of the one column whose base we have recovered, and whose description we must postpone for the moment, measures 3' 6". Putting aside the question whether this diameter was or was not further extended by certain adjuncts to be mentioned later, and taking 3' 6" as the full diameter, let us compare this with the diameter of the ash circles. Up above, where the ash-tubes first descend from the main stratum, they flare in horn-like fashion, as has already been noted. This is due to the gradual breaking down of the edge of the circular hollow as the heavy stone fragments poured into it. Here of course the diameter is wide, varying from 6 to 7 feet, or even a trifle over. But even so, it leaves so little space between the shaft and the side of the tube that it would seem almost incredible as an excavation by human agency for the removal of the pillars. But when one tests the case lower down, from a point a few feet below the ash stratum down to the end of the ash tube, the impossibility becomes apparent; because, where the sides of the tube are vertical, the diameter in one test case was found to be only 4' 9". As this leaves a margin of only 71 inches round about the column, assuming the smallest diameter conceivable for the column, it is absolutely certain that no human hands can have dug these circular holes while the columns were in position, as no standing room whatever is left for the digger, who had some 6 or 7 feet of depth to penetrate. Even if we could grant the possibility of human agents having accomplished such a miraculously narrow excavation around the standing shaft, the problem would even then not be solved; for how are we to assume that the heavy upright shafts were then removed? No machinery known to me would suffice to draw such massive monoliths straight up out of the earth, even at the present day, and it would certainly be rash to assume that any existed in the dark age just before the Guptas. It took the Public Works Department something like three years, and involved an expenditure of some Rs. 10,000 to lift and remove a single fallen column of Aśoka's date from the soft pit into which it was sinking at Rāmpūr wā, without any miraculous narrowness of excavation; and I for one refuse to believe that in the 5th century A.D. the primitive Beharees were so much further advanced than we are now, that they could draw Aśokan monoliths from the jaws of Mother Earth after the manner of a dentist. No; since the columns must have disappeared either in an upward direction or downward, I prefer to abide by my original theory of sinkage.

It was through the determination of these ash circles as the equivalents of the original columns that we were able to fix our measurements with accuracy. As I noted above, when we got our first clue to the plan of the pillared hall, we judged the distance from centre to centre of the piles of fallen fragments to be 14 feet. On clearing adjoining ash circles, however, it was found to be definitely 15 feet instead, probably 10 Mauryan cubits. In recovering our ground plan, therefore, we removed the main ash stratum, and carefully cleared the circles under the heaps of stones, and in this way obtained an automatic drawing of the hall, executed in the ashes of its own decay. For in every case, save one, the expected circle of ash appeared underneath the pile of fallen fragments disclosed by our measured pits.

Turn now to the one exception to the rule, which is one of the most gratifying points to be mentioned this year. On clearing the ground where we expected to find

he third column from the west in the sixth row from the north, to our surprise, no ash circle appeared. In its stead, we came upon what at first seemed a large fallen fragment, but which, to our joy, turned out to be a fallen pillar. This then is an exception to the otherwise apparently universal rule of sinkage, but it is merely the exception that proves this rule; it does not disprove it. The explanation is easy. For some reason or other the foundations of this particular column were weaker than the others. They were therefore affected by the flood more seriously than were the others, with the result that this particular column was overthrown while all the rest remained upright. For it is clear enough that it fell while the flood was in progress. It lies in a recumbent position, but not actually level with the ground. The upper end is 3 feet at least above the lower. The lower end therefore indicates with some closeness the original level of the floor (it had pulled up a bit owing to the shock of the fall), while the three feet of earth between this level and the upper end of the column can only indicate the amount of silt dropped by the flood up to the moment when this pillar fell. Had it remained standing until the total 9 feet of silt was all deposited, it would of course have been held upright just as the others were. On the other hand, if it had fallen before the flood began, it must have fallen to the actual floor, and in this case we should have found it in a truly horizontal position. Its having fallen midway in the course of the flood seems, therefore, an inevitable conclusion; and this being the case, the fact that this one column has not sunk has no bearing on the sinkage theory as regards the others beyond incidentally confirming it. For it shows that, if the others had not been held upright (which involved their ultimate sinking), they would all alike have been lying prone for us to find. As regards the theory of spoliation, on the other hand, this existing column is very strong evidence against it. This theory, with the existing ash-circles, implies a very accurate knowledge of the ground plan of the building on the part of the hypothecated vandals. Why then did they take all the rest and leave this one? For although the column was not upright, it was exactly in its proper position for all that, and any vandals exploiting the site for its stone must inevitably have come upon this column in its turn.

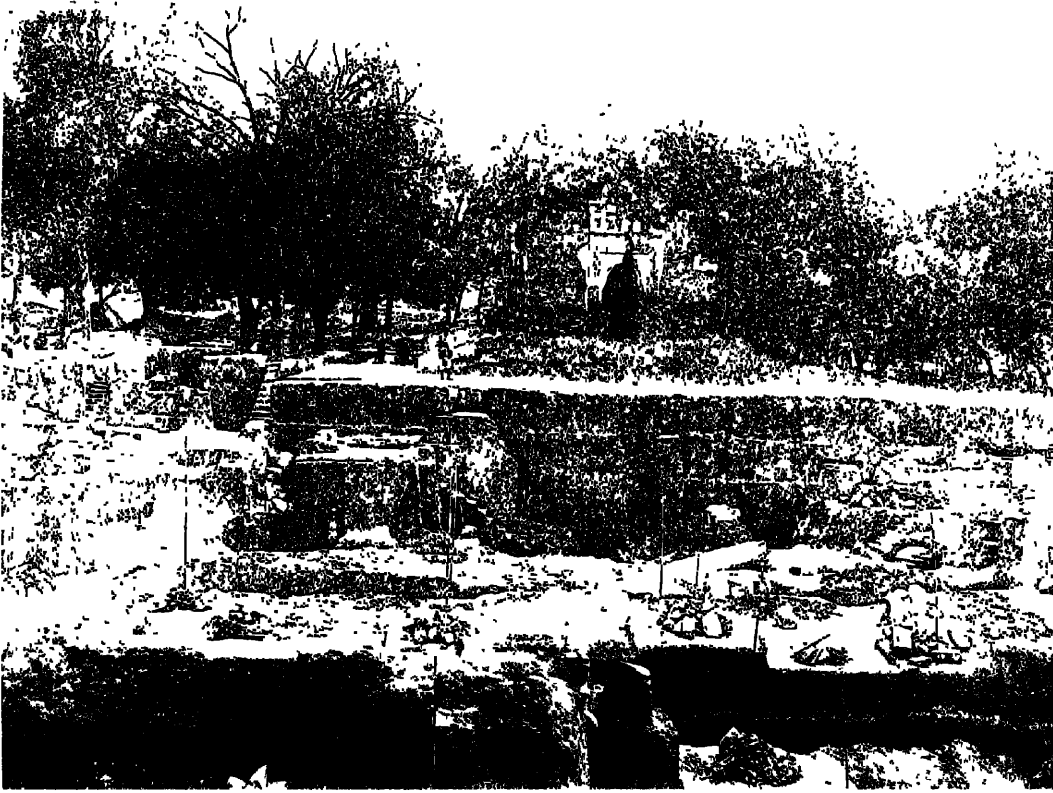
But to return to the description of the column itself. It is not complete, as the top portion is missing, but we have the entire lower part of the pillar for a length of 14' 3" in almost perfect condition. I need not point out how useful and how gratifying this is. Nowhere else have we a single fragment of a base of any kind, and this single example thus enables us to answer a number of questions which must otherwise have remained matters of doubt at best. We see in the first place that none of the columns had any pedestals. The shaft is smooth and polished right down to the base, as, I believe, is the case also with all the other Aśoka columns known in India.<sup>1</sup> This shows further that it must have merely rested on the floor directly without anything in the nature of a socket hole. For why should the builders have polished the entire length, if part of it was to be concealed? The base itself is carefully smoothed, but of course not polished, and bears a number of interesting symbols and masons' marks (cf. Pl. XLVII *b*). Among them a set of

<sup>1</sup> All the Aśoka columns which I have examined are polished as far as the original floor level, but rough-dressed below. [Ed.]

three rows of three circles each is conspicuous, and also the symbol  $\text{⊕}$ . I am not able to offer any explanation of this symbol, which I believe has long been familiar in India. One point of interest in regard to it may, however, have escaped notice, and that is that very similar marks occur on certain of the Achæmenian monuments of early date. In figures 12 and 13 of part I of Dieulafoy's great work on "L'Art Antique de la Perse" (pp. 11 and 12) almost identical symbols are shown from the "*Takhté-Maléré-Soleiman*" and from certain stones at Behistun, the only divergence being in the length of the upright line and in the greater roundness of the base, which in the Achæmenian examples is a true circle. Dieulafoy, from the similarity of the mason's marks in these two places, claims (p. 11) that their occurrence on the "*takht*" tends to prove that Persians or Medes were employed on its construction, and a similar argument would seem possible at Kumrahar. It is of course well known that the style of capital employed by Aśoka shews very strong Persepolitan influence, and Sir John Marshall holds with reason that Aśoka must have employed, even if he was not the first to introduce, Greco-Persian artists or artisans. Would it be going too far to claim that this peculiar mason's mark at Kumrahar, slight as it is as evidence, is nevertheless in the line of confirmation of Sir John Marshall's contention? The predication of an Achæmenian source for it originally would certainly not be out of harmony with such evidences as do exist in Aśokan art and architecture.

But one feature of this column remains to be mentioned, which is no less interesting than this symbol, and that is the presence, some 5 feet above the actual bottom of the shaft, of four roughly square bosses projecting slightly from the surface of the pillar, one on each of the four sides. Three of these are nearly flush with the column, and show a roughened surface which may either be the result of breakage or indicate an attempt to smooth the surface after it had become broken. The fourth projects further and bears more unmistakable signs of being merely a fracture, for here a definite neck is observable whose surface is polished like the rest of the column. I have failed so far to find any exact parallel to these curious bosses on this column either in India or elsewhere in the ancient world, and it is therefore not possible for me to do more than guess as to their original form or purpose. It appears certain, however, that they projected originally some distance from the surface of the pillar, and as they are an integral part of the monolith, it is clear that they were merely left in the stone, or that the pillar was fashioned from a block large enough to include these projections. This much is obvious enough. But whether they supported ornamental medallions or served some other purpose is less certain. Dieulafoy pictures a certain ancient pilaster from the front of which three sculptured heads advance much in the fashion of our Kumrahar bosses, so that the idea that the latter supported some form of ornamentation merely is not impossible even by analogy. But it is not probable to my mind. For reasons to be detailed later I am inclined to think that they must have involved some complete and permanent extension of the diameter of the column on all sides, and this would seem to imply that they supported some band of stone which encircled the column as a girdle. This of course calls for an almost incredible amount of labour, since this girdle must have been cut out of the single block from which the pillar was formed.

TATA EXCAVATIONS AT PATALIPUTRA.



4. KUMRAHAR: GENERAL VIEW OF EXCAVATIONS  
SHOWING ROWS OF POLISHED SANDSTONE FRAGMENTS.



5. KUMRAHAR: POLISHED SANDSTONE COLUMN.





But it is quite certain that the projecting bosses were so cut, as has just been mentioned, so that the assumption of a further inch or two becomes less unreasonable than might at first appear. And besides this, the square monolithic rail at Sārnāth has already acquainted us with Aśoka's utter lavishness of human labour. I believe, therefore, that these four bosses held an encircling girdle, which was so essentially part of the column itself that it was able to sink with the main shaft without being separated from it, which explains the fact that the diameters of our ash circles are greater than the diameter of the actual shaft itself. It is also possible in the absence of all evidence for a socket hole or other basal support, that on all four sides of the column, vertical bands of stone, or stone uprights, some 6 inches wide, descended from this girdle to the ground, serving as supports to the pillar to prevent its falling over; in other words, that these bosses supported not only an ornamental girdle but also a sort of substitute for a pedestal which was of direct utility. It must have been rather a delicate undertaking to balance these columns without some such extension of the diameter at the base, but of course there is not a shred of evidence concretely for any such uprights at all, and the suggestion is to be understood as guesswork pure and simple. The one thing that appears absolutely certain is that the bosses did not extend far enough to constitute railings, as it were, connecting up adjoining columns, as has been suggested. For if this had been the case, since the bosses are only some 5 feet from the ground and occur on all four sides of the pillar, the hall would merely have been divided into a series of closed pens, definitely shutting the building to access of any kind!

With the exception, then, of the one place where, because of the actual presence of the column, no ash circle appeared, ash circles were met with at regular intervals throughout the northern half of the site, giving us up to date eight rows of columns, with ten columns in six of the rows, and seven and five each in the seventh and eighth row respectively (Pl. XLI). But whether this is the full extent of the building or not is not even yet certain, because on attempting to clear what seemed to be the western side of the hall we came upon another ash circle precisely like the rest and in exact line with the sixth row from the north at a distance of 30 feet from the most westerly column of that row. This appears to be indicative of at least two further rows running north and south on the west of the hall, but it was not possible to ascertain within the limits of the present season's work whether these rows really exist or not. Again, on the extreme east certain circles appeared to the east of what otherwise would seem to be the eastern limit of the building, which by their smaller diameter appear to mark the presence in this position of columns smaller than those in the main body of the hall. One similarly small circle has also been discovered on the extreme north, but I cannot yet determine whether these indicate porches, or whether there was rather an outer row of small columns on these two sides. Possibly the main difference between the two classes of pillars consisted only in the absence of the encircling girdle on those which edged the hall. These three sides of the building thus demand further exploration before anything definite can be affirmed as to the extent of the hall in these directions. But at all events, eight rows of columns have been definitely proved, and these suffice to show how mighty and imposing the structure must have been.

South of the area occupied by these eight rows of columns, a surprise awaited us. We had sunk trial pits at distances of 15 feet in the search for further columns in that part of the site which lies east of the Muhammadan tomb, and had met with stone fragments at the usual depth at points 15 and 30 feet south of the eighth or southern row of the pillared hall. We accordingly felt sure that underneath these stones we should find the anticipated ash circles, as there seemed no reason to suppose that the building stopped with the seven rows theretofore discovered. But strange to say, no ash circles appeared. On the contrary, at a depth of some 15 feet beneath the surface, and at a point 43 feet to the south of the second column from the east in the eighth row, we came upon what appeared to be beyond question a stretch of well laid wooden flooring. This was a point of fresh interest, and as it so chanced that this discovery was made simultaneously with an announcement that the Royal Commission on the Public Services were to visit the site a few days hence, special efforts were made to clear as much as possible of this floor before their coming. The great depth of earth above the wood made the clearance an arduous task, but thanks to my assistant, Babu Hari Das, everything was managed very well and I was enabled to lead the Royal Commissioners over some 20 feet or more of what I explained tentatively as part of Aśoka's ancient floor. To the inevitable question as to why it was that this portion had chanced to be so well preserved when all the rest had gone, I was of course unable to make any satisfactory reply. It seemed, indeed, a mystery. But the Commission had hardly left Bankipore before this mystery was solved, only to give way, however, before a greater one whose solution is still outstanding as I write. For the further clearance of this floor on all four sides disclosed the fact that it was no floor at all. The wood extended for some 30 feet north and south, and over a width of 13 feet east and west. But on the east side (and later on the west also) a very sharply defined edge appeared, which led us downwards until it became evident that we were dealing with some wooden structure, whose side we had at last recovered. This side was found to be vertical, and to be in almost incredible preservation, the logs which formed it being as smooth and perfect as the day they were laid, more than two thousand years ago. As we dug, the depth continued, until at last we reached the base and found the actual depth of wood to be 4' 6". The four sides were then rapidly cleared, and there stood forth a great wooden platform, 4½ feet high above its base, 30 feet long and 13 wide, bound by upright wooden posts at intervals along its sides, and at intervals also down the centre, so far as we could judge. This was indeed a new development, and gave rise to innumerable speculations and to really great public interest. The latter, indeed, threatened to become so pressing and insistent that I was rendered doubtful of the safety of the structure and appealed to Mr. Le Mesurier and Mr. Weston for the deputation of a police guard to prevent the examination of the platform being unduly expedited by unauthorized, if interested, parties. For the rumour flew through Patna that we had a royal treasure chest of unknown possibilities. The unknown nature of the possibilities I was myself quite ready to concede, although the treasure chest theory was almost the only one that did not seem based on reasonable grounds. But it would serve no useful purpose to re-state here the ideas and explanations which occurred, whether to myself or to the



a b d : KUMRAHAR: ASH PITS INDICATING THE DOWNWARD PROGRESS OF THE MAUREYAN COLUMNS.



many who visited the spot and contributed their speculations to the common store. It was soon evident that we were all wrong, anyway, for just as I was beginning seriously to believe that it might be the platform of the Royal Durbar hall, the pillars along the sides having supported a canopy, the discovery of a second platform on the east, and parallel to the first, upset all existing calculations. Shortly after this, yet a third platform appeared, west of the first, and then the only course left us was to suspend judgment and trench both east and west.

The result of this trenching, up to the close of the season's work, has been to discover a series of seven wooden platforms lying on the south of the pillared hall, and, owing to the fact that the tomb has closed a portion of the site to examination, so far as is known only to the east of the tomb itself. It is more than probable that other platforms similarly occur underneath the tomb, but such trenching as we could carry out at the end of the season, on the west, failed to show any in this portion of the site. Five of the seven platforms have been entirely cleared, the sixth only partially, and the seventh merely determined by a cross trench; for the subsidence of one of the banks near the tomb warned us to desist from further cutting at that point. But as all the platforms show precisely the same features, we may safely assume that the two which have been so far only partially examined correspond to those which we have more adequately explored (Pl. XLV).

The first fact to be noted is that what we have hitherto called the "first" platform proved to be really a pair of platforms side by side, the narrow opening between the two having been so filled in with earth and sand that the dual nature of the structure did not at first appear. Thus all the platforms have the same general dimensions, 30 feet in length, 5' 4" in width and  $4\frac{1}{2}$  feet in height from the base, and all have the same main characteristics. Thus all show the stumps of upright wooden posts at intervals on either side, while other upright posts stand here and there between the platforms and not visibly connected with them. The most noticeable feature of these posts is that they overtop the actual platforms, and that, whereas throughout that portion which rises above the bases of the latter they have all suffered severe decay, underneath the level of the ground on which the platforms stand, they not only descend for another 5' 7", but are in absolutely pristine condition where they are so embedded. These facts would seem to indicate that when these platforms were originally built they were not covered up to the level of their tops, but stood free of the soil on the level on which their bases rest; had they been buried from the beginning there could have been no reason for sinking these posts to any such great additional depth, nor would the decay of the upright posts have been specially marked from the bottom of the platforms upwards. There is even a structural reason, so far as I can interpret the evidences, for coming to the same conclusion, namely, the presence at either end of each of the outer logs forming the long sides of the platforms, of a rectangular cutting which penetrates only to one-half the depth of the log. These cuttings taken collectively form vertical lines of square holes at either end of each side of each platform, and can only have served for the support of something inserted into them. I have no suggestions to offer for the solution of the special problem these curious holes raise, but so much at least seems evident, that they must have stood clear and free of enveloping soil or else they

would hardly have been usable at all. It appears to me therefore to be reasonably certain that the platforms originally stood free, and the point is one of special importance for several reasons. In the first place it would seem to prevent acceptance at the outset of what is in many ways the most plausible and probable explanation of these platforms which has yet presented itself, namely, the theory that they constituted merely the foundations of specially large and heavy pillars in this portion of the hall. Even so, this theory demands consideration.

In the first place, then, let us revert to the fact already mentioned, that when we sank our initial trial pits over these points we did meet with the expected stone fragments, although of course no ash circles lay under them. This, and the corollary of five of the platforms being in line with the known rows of columns on the north would certainly seem to point in favour of the foundation theory. And the fact that their tops are at just about the level we have been obliged to assume for the floor in the main hall, is again in perfect harmony with the same assumption. The question at once arises, why were such extraordinary foundations laid for the pillars here, when all the evidences show that no such massive structures were deemed necessary throughout the remainder of the site? But this is not necessarily destructive criticism, for several answers could reasonably be given. The soil might, for example, have been either actually or supposedly softer at this point than anywhere else, or the columns here might have been of special size and weight and therefore have demanded special treatment. Moreover, there would seem to be at least one concrete bit of evidence tending to support this latter view. For, curiously enough, it was just above one of these platforms that we found a large fragment from the top of some pillar, which by its measurements shows beyond all question that this particular pillar was really of greater diameter than the rest. There are, therefore, very real and even excellent reasons for interpreting the platforms as mere foundations, each supporting seemingly two specially thick and heavy columns, one at either end. The length, again, would just permit of this, and the width would also seem appropriate. But if the arguments in favour of the theory are strong, those against it are hardly less convincing. In the first place, what was the purpose of these projecting upright posts? Had they been flush with the tops of the platforms, we could have recognized them as merely strengthening supports to the whole to prevent the piles of logs from spreading beneath the pressure of the pillars. But why did they project? And what then becomes of the posts, which do not touch the platforms, and which in consequence cannot conceivably have served to strengthen them? Why, furthermore, were all these posts so deeply sunk, and what of the square holes in vertical lines along the sides of the platforms themselves? In short, everything which is an indication that the platforms stood free is an argument against their application as foundations, for as such they must have been concealed. The strongest argument of all, though, lies in their position and mutual relationship, and in a further detail to be noted later. If five of them are in line with established rows of columns, two of them at least are as certainly not in such alignment, nor does the position of these two irregular examples seem capable of explanation as a mere studied and intentional variation in the plan, as one of the two lies close beside another of the seven. The other, moreover, presents a very special

difficulty in that it is not one solid mass like the others, but, although originally built, so far as one can see, of thirty feet logs like all the rest, its western face has been cut through vertically in a wide semicircle, which divides the one platform into two most curious ends, outwardly rectangular, but towards the centre being so curved as to form two complementary segments or quarters of a single circle. A reference to the plan (Pl. XLII) will probably be necessary before my meaning becomes clear. Nor is this all. Between the western edge of this divided platform and the eastern edge of the platform nearest to it on the west (which happens to be one of the pair of twin platforms first discovered) there occurs, at the level of the ground from which the platforms rise, a shallow, circular brick-lined pit, whose bricks are supported on a circular collar of wood some 3 feet below its own edge. The eastern edge of this round pit just touches a line drawn down the western edge of the severed platform, or would have touched the platform itself had the semicircle not been cut out in it. What is still more curious, the centre of the pit appears to be the centre of the semicircle formed by the inner faces of the two ends of the divided platform; while at the same time the pit is placed equidistant from two free standing posts which rise north and south of itself and midway between this platform and its neighbour on the west. Now, when this pit was first discovered, it seemed easy to assume that it was the base of a small well sunk in Gupta times or later, and that perhaps the well-diggers, having struck the western edge of this now divided platform, had cut it out by way of a little archæological exploration of their own. The smallness of the bricks lining the pit (they measure  $11'' \times 10'' \times 2''$ ) would seem in harmony with this view, as I personally know of no such small bricks anywhere in Mauryan use. But at the outset it seemed curious, if this had been a well, that we had not passed the débris of its upper portion as we descended through the upper strata at this point. In certain other cases of mediæval and modern wells such débris was invariably met, but here there had been no bricks at all until the slightly damaged edge of the shallow pit was reached. This made the later date for the pit seem open to question, and when Babu Hari Das pointed out that the narrow projecting ledge—it is not more than an inch wide—which is traceable a few inches above the ground on all sides of the various platforms, was also continued at the same level across the curving faces of both ends of the divided platform, it became necessary to abandon the idea of a later date for the pit, and of an accidental origin for the semicircular cutting in the platform. Indeed the whole arrangement of this circular opening with the pit so mathematically disposed at its centre and the two upright posts at equal distances to north and south would seem to preclude the possibility of accident any way. There must be definite design behind it all, and the whole must have had some definite purpose, quite distinct from the idea of mere foundations.

What this purpose may have been I have no means of knowing. The platforms may have been conceivably altars, and the pit a receptacle for the blood of the offerings. But I can find no ancient parallels in support of this idea, and the idea itself is of course incompatible with the supposedly Buddhist character of the site. It is not impossible, however, that the platforms, which seem to rise from a level some feet lower than the floor of the building, are themselves older than

the pillared hall, but I cannot bring myself to believe that this is probable. For the present therefore I prefer to suspend judgment altogether, and to refrain from advancing any reasoned theory regarding these wonderful structures until further excavation reveals more clearly the actual extent of the hall and the relation of these wooden platforms to it. All that can be affirmed now without fear of error is that they constitute one of the most impressive and remarkable discoveries yet made by the Archæological Department in India. There is a real solemnity about them, and as one stands on the high edge of our excavation and looks down upon their mute mysterious forms those twenty feet and more below, one gathers a clearer impression of the great antiquity of the site, and of the magnitude of the monument we are tracing than at any other point of the excavations.

In order to set at rest the dangerous rumour which credited these platforms as being treasure chests, and incidentally to make sure that they really did not conceal anything of value, intrinsic or otherwise, I felt compelled to open one and explore its interior thoroughly. First of all a tunnel was passed under the one selected for examination, lest perchance some central subterranean chamber lay concealed. This proved not to be the case. Then the several logs were carefully numbered, marked on a plan, and one by one removed, until three-quarters of the whole had been taken up, and an excavation of the ground underneath made possible. No cavity of any kind appeared anywhere. The platform was found to be merely a solid accumulation of logs. But the neatness and accuracy with which it had been put together, as well as the marvellous preservation of the ancient wood, whose edges were so perfect that the very lines of jointure were indistinguishable, evoked the admiration of all who witnessed the experiment. The whole was built up with a precision and a reasoned care that could not possibly be excelled to-day, and which I fancy is only rarely, if ever, equalled in India. The vertical piles of logs were most neatly stepped, each underlying log being advanced an inch or two beyond the one above it, and each horizontal layer was bound together by accurately dressed planks of wood on which the several logs of the layer were threaded. To insure greater strength still, the outer log of the layer which rested on the ground was pegged down into the earth by upright pegs fully three feet in length; and the whole pile was again still further bound together by the upright posts along the sides, between which and the actual sides of the platform a certain amount of wooden packing appears to have been introduced for greater firmness. In short, the construction was the absolute perfection of such work, and those of us who had the privilege of observing it were taught a salutary lesson in regard to the often boasted superiority of our own times. The builders who erected those platforms would find little indeed to learn in the field of their own art, could they return to earth to-day. Though, why such pains were taken to ensure the maximum of strength and solidity in the platforms, unless they were really designed to support some enormous weight, is not at all apparent.

I may add, although I trust it is unnecessary, that the logs we were obliged to move were all replaced in position with scrupulous care, and the platform restored to its original condition so far as this was possible. We were, however,



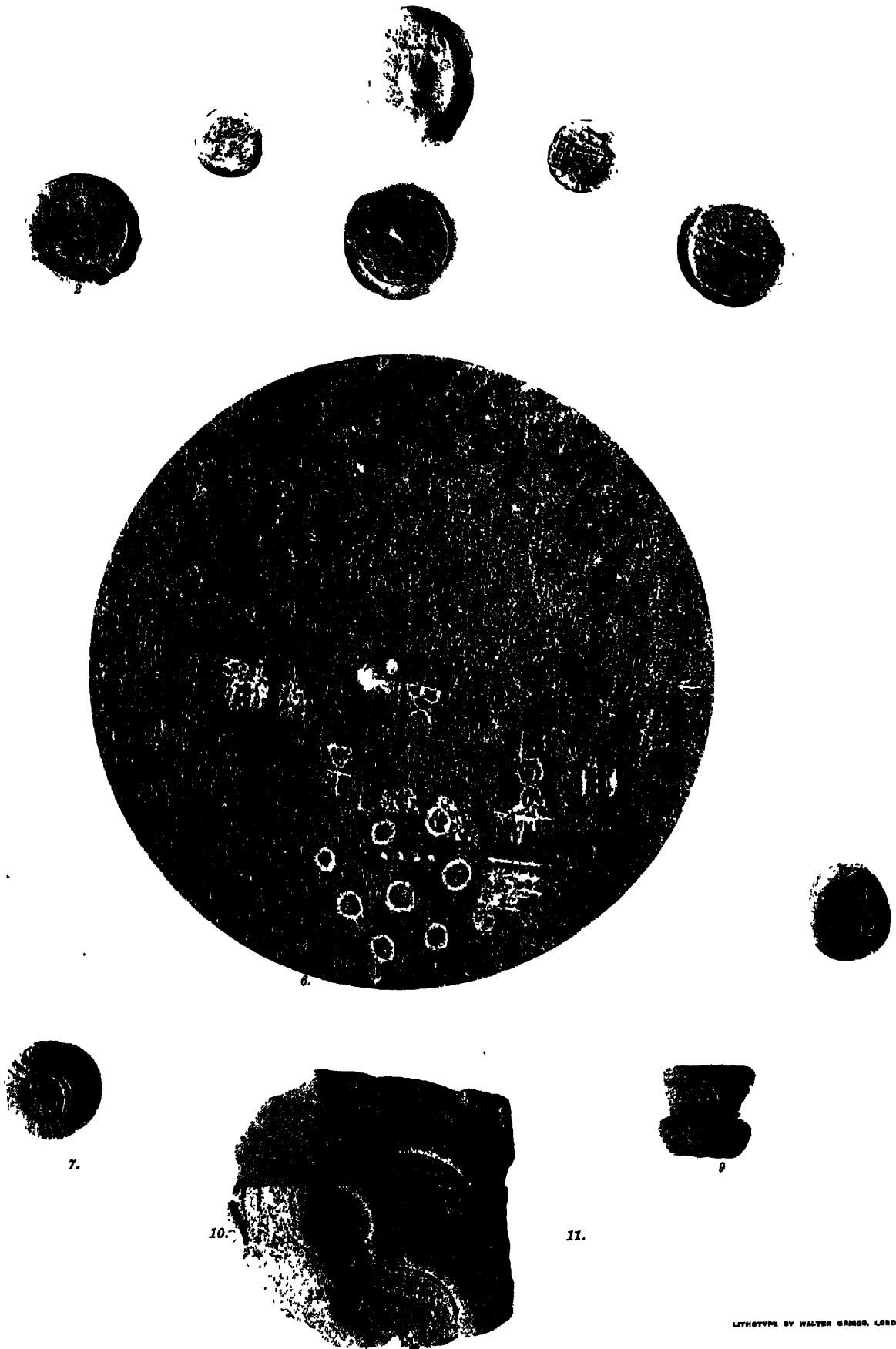
unable to prevent the serious weathering of the surface of the individual logs when exposed to the fury of the May sun, and to my regret I must record, as I believe Flinders Petrie has had to do in Egypt, that in the two days the timbers lay exposed they suffered more disintegration and decay than the previous two thousand years had wrought. We left them encased in earth as the greatest measure of protection we could afford them, but unless they can be completely reburied, their disappearance within a few brief years is lamentably certain.

The minor finds of the season which call for individual mention and discussion here are few in number (Pl. XLIX). They are, however, not unsatisfactory as indications of the variety and quality of the sculptural and epigraphic material which they show must have existed here, and of which it is reasonable to hope that we shall yet recover more generous specimens, as the work goes on. They are of unmistakably Buddhist character, and prove that from the time of Aśoka down through the centuries of Gupta rule the site was the centre of continuous occupation. The dignity and importance of the place in Mauryan times are sufficiently evident from the extent and magnitude of the building, and although we have next to no minor finds assignable with certainty to this early age, one little fragment of sandstone polished on both sides and with one face decorated with very narrow flutings all exquisitely polished, is alone enough to indicate the quality of the subsidiary decorative work which existed here in Piyadasi's time. The beautiful *triratna* slab is also evidence of a similarly high stage of artistic culture here during probably the Śuṅga period, while the continuation of the same nobility of sentiment into the early Christian centuries is indicated by the very promising fragment we have of a large Bodhisattva image, which can only have been produced by the famous school of sculpture which flourished at Mathurā—a find which is particularly interesting so far east as Pāṭaliputra. Certain fragments of small polished and unpolished railing stones may perhaps be remnants of the external decoration of the superstructure, for in some of the early cave temples we see small rails utilized in this position, and the fragments have come from the edges of the two tanks north and south which may well have been originally the courtyards on either side of the main structure. But it is not certain that all our railing fragments are of equal age. One or two of our terracotta figurines are of early date, but whether Mauryan or Śuṅga cannot be readily determined, and one or two of our clay sealings are equally old. But the majority of such minor finds as the season has produced are assignable with certainty to Gupta times. There is, however, nothing which can be referred with confidence to any period between the Guptas and the Muhammadans, and from this the conclusion seems easy that, although the fame of the site was preserved into the Gupta period and occupation was accordingly continued, something then happened to deprive the spot of favour, with the result that it was abandoned until the incoming of the Moslems at a period so remote that the mediæval dislike of the site had been in part forgotten. I say "in part" because even the Muhammadans do not appear to have made any extensive occupation of the site even then, and the evidences for them at all are limited to a few stray walls of no importance and to a certain number of fairly modern coins. It seems as though the place had fallen

into definite ill repute after the departure of the Gupta people and had been deliberately shunned throughout the subsequent centuries. May we not find the explanation of this fact, if fact it is, in the peculiar ruin which overtook the Gupta buildings? It is clear enough that many of their walls were drawn downwards on the subsidence of the upright columns underneath, and this, to the Guptas mysterious dropping away of the very foundations of things may very well have been not only a mystery but a shock to them. Various localities in the world's history have acquired an evil fame for less real cause than this, and it would be by no means strange if superstitious fears had intervened to render the site taboo for future ages. But whatever the cause, the effect is clear enough. The site was not occupied in later mediæval times, and the excavator is therefore saved the passage of the usual surface accumulations which are so frequently a source of mere annoyance and delay at other places.

In the field of Epigraphy, apart from the inscribed seals we have recovered, the only find of interest is a small fragment which I judge formed part of the expected inscription underneath the wheel of the Law on the *triratna* slab. The fragment measures only  $4\frac{1}{2}'' \times 3'' \times 2''$ , and shows only three full *aksharas* with traces of the bottoms of other *aksharas* in the otherwise missing line above. The three existing letters of course do not admit of any definite interpretation, but by an accident they happen to be of quite exceptional epigraphical interest. The very peculiar script current in the far north-west of India and known to students of palæography as Kharōshthī is so altogether un-Indian in origin and appearance as well as in the reversed manner of its reading, that a possibility of confusing it with any purely Indian form of writing can hardly have occurred to any epigraphist. But the three *aksharas* of the present fragment, owing to the damaged surface of the stone, do make this confusion or doubt not only possible but inevitable. My own familiarity with the remains of the Afghān Frontier led me to exclaim when the stone was first laid before me, "Why, the inscription is in Kharōshthī!" and I read it without hesitation from the right-hand side as the Kharōshthī letters *gra-sa-da*. It seemed so impossible, however, that Kharōshthī could occur in Pāṭaliputra, that I looked again, and with less confidence read the three as Brāhmī *va-da 6*, the last being a numeral. Geographical considerations aside, it seems really open to question whether the letters are Brāhmī or Kharōshthī, but an examination of the fragmentary upper line may help to determine the point. The base of one may be of a Brāhmī *akshara*, as perhaps no letter in Kharōshthī could have left the form we trace with certainty. The inscription is probably Brāhmī, as was to be expected. But scholars will acknowledge that the possibility of doubt on such a point renders the fragment of quite peculiar value. It is probably unique in this regard among Indian epigraphs. Its date, I may add, is not certain. If the base of the missing *akshara* above is the base of a *ba*, the epigraph may be of Mauryan date; if it represents a *pa*, the date cannot be earlier than Śuṅga times, say the second century before our era. It is of course very earnestly to be hoped that the remainder of this inscription will ultimately be discovered. It would probably shed a flood of light on the nature, if not on the actual identity, of the pillared hall.

TATA EXCAVATIONS AT PATALIPUTRA.



1-12. KUMRAHAR: MINOR ANTIQUITIES.



The register of seals recovered at Kumrahar shows 20 entries, including 9 matrices, which is a most unusual percentage. A complete list of them is given in Appendix A to this paper. They range in date over a period of eight or nine centuries, and testify to the long occupation of the site. Among the matrices No. 18 is of special interest because of its extreme primitiveness. It comes from a depth of 18 feet, and shows no written characters, only a trio of very archaic symbols. Its lack of a legend lessens its historical importance, but nevertheless it is an interesting document for the as yet unwritten history of Indian gems and signets. It may confidently be assigned to at latest the 3rd century B.C. I may also call attention to seal No. 2, with the legend *Gōpālasa*, "(seal of) Gōpāla." Both the use of the Prākṛit form and the formation of the individual *akṣharas* lead to its reference with confidence to the time of the Śūṅga kings or their immediate successors. The point of special interest in regard to it, however, is its resemblance in size and shape to the type of seal which became so popular at a later age and which bears such a curious resemblance to the modern departmental seals of the Government of India. It is perhaps the earliest example known of this particular type of seal. The majority of the season's yield, though, are of Gupta date and call for no individual mention here. Full particulars of them all will be found in Appendix A. It remains for me, therefore, merely to express my indebtedness to Mr. R. D. Banerjee for the substantial help he has rendered me in fixing the readings of the legends. My own hands were too full to permit of my devoting the necessary amount of time to a consideration of those of the number which are obscure.

A complete list of the coins found at Kumrahar, is given in Appendix B. It will be seen that they number 69 in all, and range from the time of the early punch-marked and primitive cast coins to that of Shāh 'Ālam bādshāh, but with a wide gap between the Guptas and the Moslems. Among the earlier coins I may mention specially No. 21. This is a large thin round copper coin in very poor condition which is believed to be a unique form of the coinage of Kosām in the 2nd century B.C. Certain coins of the Mitra dynasty also occur (cf. Nos. 10, 19, 29), the best specimen being one of Indramitra, No. 19. Even Kanishka is represented by two copper coins of the Vāyu type (Nos. 1 and 28, from the surprising depths of 2' 5" and 3' respectively). Anonymous tribal coins of the "Elephant and chaitya" type are fairly common. But curiously enough only one Gupta king is represented, namely, Chandragupta II Vikramāditya (375-413 A.D.). Of his rare copper coinage we have two duplicate specimens, Nos. 23 and 57, from depths of 2' and 10' 6" respectively. As a rule the copper coins of this monarch are both few and poor, which renders our specimens of special value, as both are extraordinarily well preserved, particularly as regards the legend.

The comparative paucity of these minor finds is not readily explained. We certainly had expected more, both in the field of sculpture and in that of epigraphy. But such as we have, they are very definitely encouraging. It is abundantly clear that the site was occupied for centuries, and was richly adorned with sculpture and other decorative material, some of which was inscribed. It is impossible that all of this can have been removed, and certain that it did not sink or suffer decay. It

therefore must be there, and the only reason why we have not yet found it must be because we have not yet reached the proper part of the site. This is indeed highly probable on other grounds as well, for by far the major portion of our excavation is still everywhere within the building. If, as seems an inevitable conclusion, the pillars had no stone capitals (for we must certainly have found some trace of them had there ever been any, the more so, since they must have been broken by the same force which broke the columns and thus rendered impossible of use elsewhere), then the main decoration of the building must have centred on its exterior. When at length we can determine its extent and orientation, and can make adequate excavations along the line of its façade, there is every reason to anticipate that the yield of Museum material will be ample. For the present we can only wait in patience for this time to come, relying with reasonable confidence upon the rich and certain promise for the future which the first fruits of the season contain within themselves.

It is of course too early yet to hazard any judgement as to the identity of the pillared hall itself, or even as regards the general nature of the building. It may have been the Hall of Conference of an exceptionally vast and important monastery; it may have been a Hall of Audience, or even the Throne-room, of the Mauryan palace. One can only guess at this stage of the excavation, and guesses are unprofitable. But it is worthy of consideration, even now, that the ground plan of the building, so far as this has been ascertained, is singularly unlike that of any other ancient structure known in India. Sir John Marshall, I understand, discovered at Sāñchi some time in January 1913 an apsidal chaitya hall of Mauryan date. With this exception the hall at Kumrahar is believed to be the first structural edifice of so early a period yet found (apart, of course, from *stūpas*, which have no bearing on the point in question). It would be unwise, therefore, where the documents are so few, to dogmatize unduly, or to over-emphasize the exceptional nature of the Kumrahar hall. Such pillared halls may perhaps have been common after all. If this was the case, though, it is strange that more evidences for them are not available, at least for the following centuries. In these circumstances it may be significant that for the nearest parallel in ancient times one has to turn again to Persepolis. The well known "halls of a thousand columns" in the Dravidian temples of South India are so much later as hardly to come into consideration, and nowhere in ancient India is anything of this nature known. But at Persepolis, in the Hall of a Hundred Columns, we do find something not altogether unlike the Kumrahar hall so far as we can as yet trace the latter, and when Aśokan capitals, and the very masons' marks on Aśokan columns seem so clearly to go back to Persepolis, it is by no means impossible that a close connection existed in the matter of the ground plan also. This would indicate a greater debt on India's part to Persepolitan civilization than has hitherto been evidenced, and, if it can be established in the future course of the excavations, it will mean a considerable increase in our knowledge and perhaps involve a certain modification of existing theories. But it would be premature to claim that the point has been actually proved.

In any case, the importance of the monument is sufficiently apparent, and whether it is of purely Persepolitan origin or not, we may legitimately refer to the famous Hall of a Hundred Columns at Persepolis for purposes of comparison.

Dieulafoy calls the latter (*Op. cit.* Part II, p. 20, footnote) "le plus vaste et le plus beau de ceux qu'élevèrent les princes achéménides sur le soubassement de Persepolis," and we may be sure that equal admiration would have been aroused in the beholder of our stately hall, had it only not suffered such utter and deplorable decay. The limitless dignity of such a structure is not unworthily shown by Dieulafoy's Plate IX of Part III, where he attempts to picture the interior of the Persepolitan palace restored. It was evidently not without reason that the early Greek ambassadors compared the royal monuments of Pāṭaliputra to those of Ecbatana and Susa. A reference to the plate in Dieulafoy enables one to realize more adequately what an architectural and artistic tragedy relentless Time has compassed at Kumrahar.

D. B. SPOQNER.