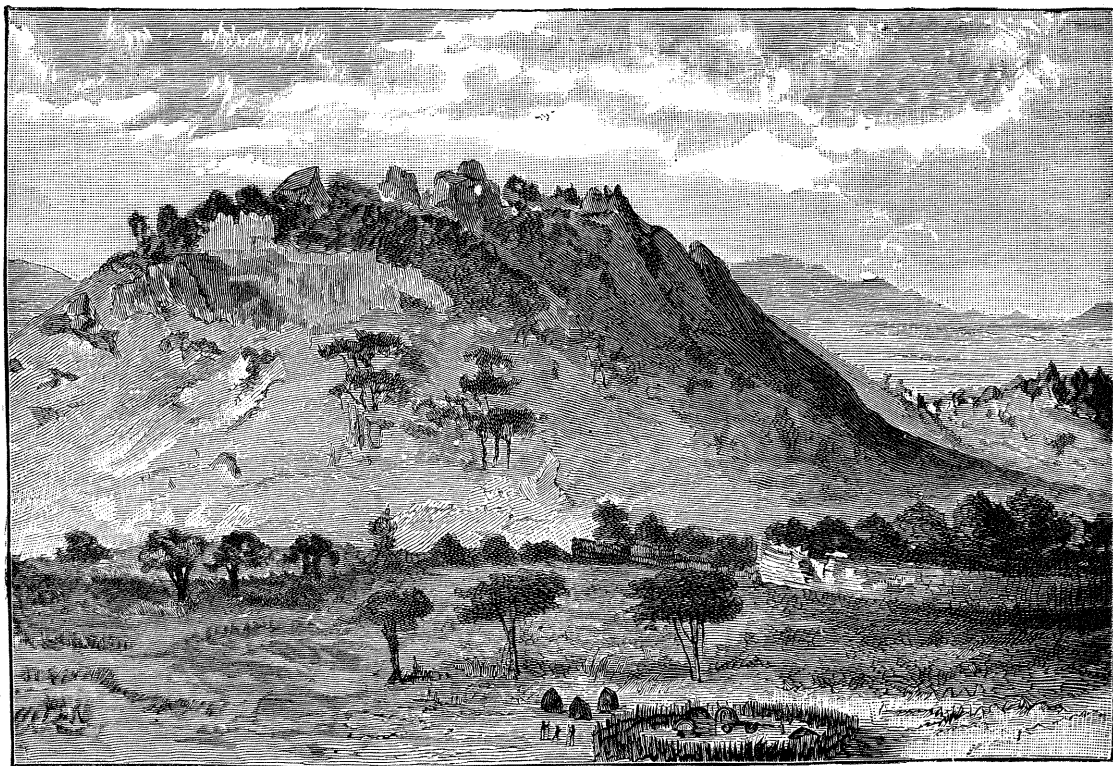


From personal experience I can speak of the ruins on the Lundi River; of those at and near Zimbabwe; of the chain of forts on the Sabi River, including Metemo, Matindela, Chilonga, and Chiburwe, and the fort in the Mazoe gold fields, all of which belong to the same period, and were built by the same race, and agree in character with those described by Messrs. Philips and Maund on the Tati, Impakwe, and elsewhere, and are quite distinct from the more modern structures in Mangwendi's and Makoni's countries, which we visited towards the end of our tour and which I shall describe in Chapter XI.

The circular ruin erected on a low granite eminence of about five hundred yards from the Lundi River is of exceeding insignificance when compared with those of Zimbabwe and Matindela: it is only fifty-four feet in diameter, and the original wall was only five feet thick; the courses are very regular and neatly put together without mortar, and the stones, of granite, are of a uniform size, broken into blocks about twice the size of an ordinary brick. It had two entrances, one to the north and another to the south-east, the latter being carefully walled up with an inserted structure in which the courses are carried out with a carefulness similar to the walls of the rest of the building. The interesting features of this ruin are the patterns in three tiers beginning at a few feet from the northern entrance, the two lower ones consisting of a herring-bone pattern, formed by the stones being placed obliquely in contrary directions



ACROPOLIS

OUR CAMP

CIRCULAR RUIN

GENERAL VIEW OF ZIMBABWE

in each tier, whilst the upper pattern is produced by regular gaps of two inches being left between the stones in two of the courses. Nearly facing the rising sun at the equinox is a curious bulge, about two feet deep, constructed in the wall. At this bulge the two lower rows of ornamentation terminate, but the upper one is carried on round it as far as the south-eastern entrance. There can be little doubt that these patterns, found on nearly all the Mashonaland ruins, were constructed for a purpose; they only go round a portion of the buildings; they have always the same aspect—namely, south-east—and one cannot dissociate these circular buildings and the patterns from some form of sun worship. ‘The circle is a sacred enclosure,’ says Major Conder in his ‘Heth and Moab,’ ‘without which the Arab still stands with his face to the rising sun.’ Into this question of solstitial orientation in connection with the ruins Mr. Swan will enter at length in the ensuing chapter.

The Lundi ruin had a cement floor, similar to those floors which we afterwards frequently came across in the Zimbabwe buildings; it would appear to have acted the double function of a fortress and a temple, guarding a population settled here on the river’s bank, who built their huts around it.

The ruins of the Great Zimbabwe (which name I have applied to them to distinguish them from the numerous minor Zimbabwes scattered over the country) are situated in south latitude $20^{\circ} 16' 30''$,

and east longitude $31^{\circ} 10' 10''$, on the high plateau of Mashonaland, 3,300 feet above the sea level, and form the capital of a long series of such ruins stretching up the whole length of the western side of the Sabi River. They are built on granite, and of granite, quartz reefs being found at a distance of a few miles.

The prominent features of the Great Zimbabwe ruins, which cover a large area of ground, are, firstly, the large circular ruin with its round tower on the edge of a gentle slope on the plain below; secondly, the mass of ruins in the valley immediately beneath this; and thirdly, the intricate fortress on the granite hill above, acting as the acropolis of the ancient city. These we will now discuss in their order.

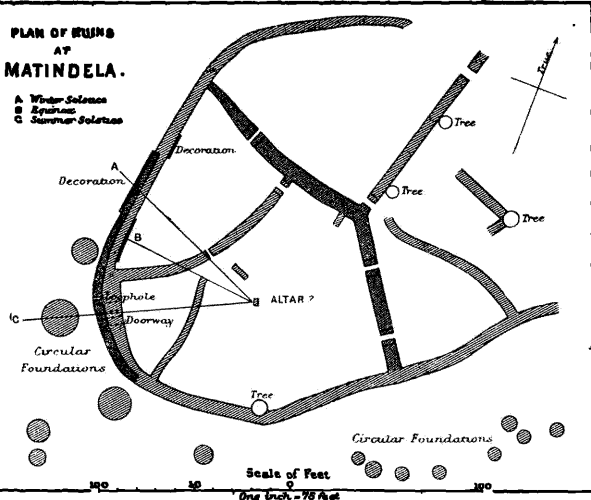
When we reached the Great Zimbabwe the circular ruin was on the inside a dense mass of tropical vegetation; creepers and monkey ropes hung in matted confusion to the tall trees, forming a jungle which it was almost impossible to penetrate, and added to the mazy labyrinth of walls a peculiar and almost awe-inspiring mystery.

It was the work of some days to clear this off with the aid of native workmen, whilst at the same time we proceeded with our excavations in the neighbourhood of the tower and other prominent portions of the building.

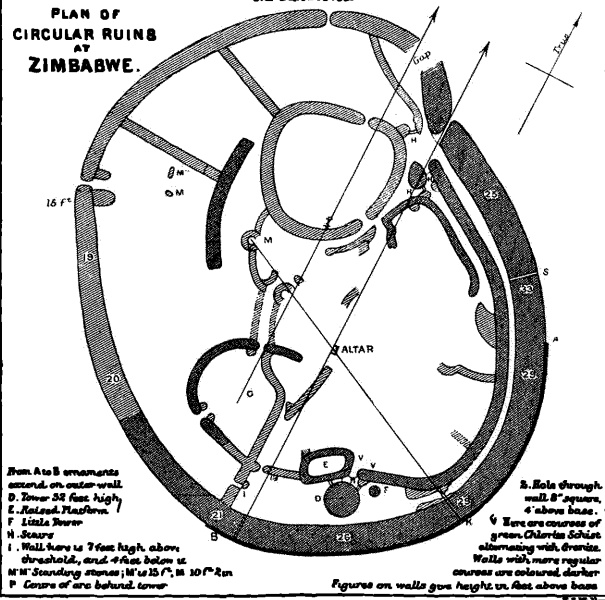
As for the walls themselves, they were nearly free from vegetation, for, owing to the absence of mortar, no lichen, moss, nor creeper could thrive on them,

**PLAN OF RUINS
AT
MATINDELA.**

- A Winter Solstice
- B Equinox
- C Summer Solstice



**PLAN OF
CIRCULAR RUINS
AT
ZIMBABWE.**



From A to B ornaments
around on outer wall
D. Tower 34 feet high
E. Round Platform
F. Little Tower
H. Scarce
I. Wall here is 7 feet high above
ground, and 4 feet below it
N.W. Standing stones; W is 15 ft, N 10 ft 2 in
P. Course of arc behind tower

3. Hole through
wall B square,
4 above base.
4. Here are courses of
green Chert Schist
alternating with granite.
Walls with more regular
courses are colored darker

Figures on walls give height in feet above base
FS Wall

and those few things which had penetrated into crevices were of a succulent character, which formed their branches to the shape of the interstices. To this fact is due the wonderful state of preservation in which these ruins are found.

What appeared at first sight to be a true circle eventually proved elliptical—a form of temple found at Marib, the ancient Saba and capital of the Sabæan kingdom in Arabia, and at the Castle of Nakab al Hajar, also in that country.¹ Its greatest length is 280 feet; the wall at its highest point is thirty-five feet above the ground, and fifteen feet at the lowest; its greatest base thickness is sixteen feet two inches, and its thinnest point is about five feet. In the structure of the wall one very noticeable feature is that the portion to the south-east is very much better built, and is both thicker and higher: here the courses are marvellously true, as if built with a levelling line, and the stones, of granite hammered into shape, are exactly the same size, whereas on the north-west side and in some of the interior walls, which are marked in a lighter colour on the plan, the courses begin to get slightly irregular, and the stones of unequal size, suggesting almost a different period of workmanship; but then there is no point where the good definitely ends or the bad begins, except at a short gap on the northern side, where the good wall would seem to have been continued more in a northerly direction, and the

¹ *Encyclop. Brit.*

inferior wall to have been brought round to meet it.

There are three entrances to this circular building. The principal one, only three feet wide, faces the hill fortress and the north. It has an odd curvature in it, constructed evidently true north, whereas all the



MAIN ENTRANCE

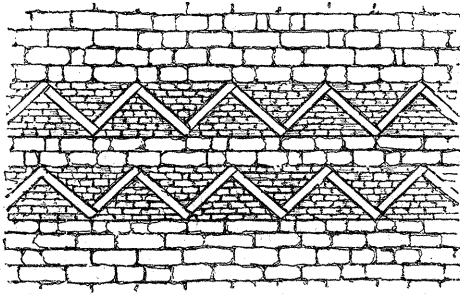
other entrances are straight. Below this entrance runs a very substantial substructure wall, and the little space immediately inside it was covered with a thick cement, made out of powdered granite, out of which steps had been formed leading down to the various passages which converge here from the centre of the building. The presence of this concrete in use for



LARGE CIRCULAR RUIN. ZIMBABWE

flooring and steps in buildings constructed without mortar is interesting, showing that dry building was used not from necessity but from choice.

The entrance to the north-west had been walled up, and we had to climb over a heap of stones to gain admittance until it was opened out. It is narrow and straight, and protected by two buttresses on the inside. The wall here is very inferior to what it is at the main entrance. There was also another entrance



PATTERN ON LARGE CIRCULAR RUIN AT ZIMBABWE

between these two, presumably merely a sally-port in the wall, the lintel of which had consisted of wooden beams, which had been burnt, and on their giving way the wall above had also fallen down.

Of the outer wall of the circular building the most interesting portion is decidedly that to the south-east. A few courses below the summit on the outside, from point A to point B on the plan, runs the pattern, formed by two courses having the stones placed chevron-wise, neatly fitted in with smaller

stones receding a little, so as to make the pattern at a distance appear as if it stood out in relief, whereas it is really flush with the wall. This pattern coincides with the sacred enclosure inside, terminating at point B exactly where the enclosure terminates, and at the other end at point A about half-way down the narrow passage, forming thus an arc of one and a half right angle. Its connection with the sanctity of the place is obvious, and into its relation to the orientation of the temple Mr. Swan will enter fully in the ensuing chapter. Along this portion of the wall, and on this only, large monoliths were inserted, most of which have fallen away; but those still standing show that they were equidistant. Here too the top of the wall has been neatly paved with slabs of granite, and must have formed a broad promenade, presumably approached by steps from a point near the main entrance. Here one can still walk with ease, whereas on the inferior portion of the wall it is now scarcely possible to scramble.

The labyrinthine character of the interior will be best grasped by a glance at the plan. Entering from the northern portal, we at once plunge into its intricacies. The great and astounding feature is the long narrow passage leading direct from the main entrance to the sacred enclosure, so narrow in parts that two people cannot walk abreast, whilst on either side of you rise the stupendous walls, thirty feet in height, and built with such evenness of courses and symmetry that as a specimen of the dry builder's

art it is without a parallel. The large blocks of cut stone used in Egyptian, Greek, and Roman masonry must have been comparatively easy to deal with as compared with these small stones of rough granite built in even courses in a circular wall of immense thickness and height. The idea at once suggests itself that the people who erected these walls had at one time been accustomed to build in bricks, and that in the absence of this material they had perfected a system of stone-building to represent as nearly as possible the appearance of brick; also another reason for the use of small stones may have been to enable them to construct the tower and curves with greater accuracy. The facings of the stones are all uniform, but most of them run back into the wall irregularly, acting in the same way as *throughs* in our dry-built walls at home in preserving the building from falling. In this narrow passage, at point S, is the remarkable hole, executed with perfect neatness through the thickest part of the wall, about the actual use of which I am able to give no definite theory. It could not have been used for drainage or defence; and in the fortress above there are two similar tunnels equally inexplicable.

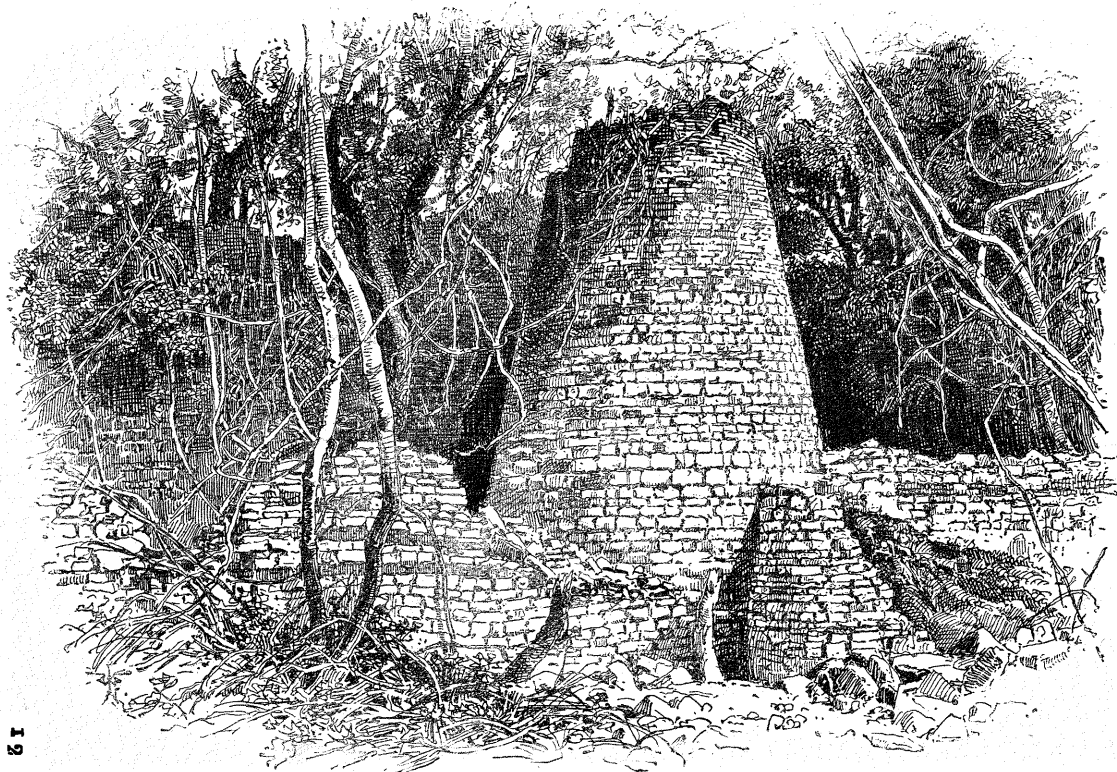
The actual approaches to the sacred enclosure are most carefully defended with buttresses on either side, into which a form of portcullis has been fixed, with two grooves, one running down each side, presumably originally intended to receive a wooden door; but at a later period all these entrances have been

carefully walled up, for what purpose it is difficult to say. It naturally occurred to us that this had been done at a time of danger for protection, but the neatness with which the blocking-up walls are executed is against this theory.

At point V on the plan there is a remarkable instance of the two periods of building. Here, in front of the sacred enclosure, the wall was decorated with courses of black slate in the older and better wall, whereas they are omitted in the inferior continuation.

At point E there is a raised platform immediately in front of the large round tower, covered with a flooring of thick cement, supported by large stones loosely packed together, into which a monolith had been stuck. This platform was connected with the sacred enclosure by a flight of cement steps, and was presumably used for religious purposes.

In dealing with the two remarkable round towers which stood in the sacred enclosure, one cannot lay too much stress on the symmetry of the courses and the accuracy with which they have been built. They stand in the centre of the sacred enclosure, which was floored with cement. By digging to their foundations we were able to get very accurate measurements of them, and found that the circumference of the smaller one corresponds exactly to the diameter of the big one, and the diameter of the big one is apparently equal to half its original height, and its circumference again is equal to the diameter of the round building on the Lundi River. The battering of



19

LARGE ROUND TOWER IN CIRCULAR RUIN. ZIMBABWE

the big tower is carried out with mathematical accuracy, the slope of the curve being perfectly regular, and is produced by placing the superincumbent stones in a slightly receding position, so that with the aid of a monkey rope we were able to climb to the top. A few courses below the summit, which would seem to be very much in its original condition except on the south side, where Herr Mauch confesses to have pulled down the stones of several courses, runs a dentelle pattern, marked D on the plan, formed by placing the stones of one course edgeways. This pattern is the same as the lower one given in the illustration of Matindela ruins, p. 137; but unfortunately, owing to the demolition of the upper courses, it is impossible to define its extent. The tower would seem to have been thirty-five feet in height, and the summit to have been a level of about four feet in diameter. By digging below this tower, and pulling out stones from the sides, which we carefully replaced, we demonstrated to our satisfaction that it was solid. It was built on nothing but the soil of the place, and was erected over nothing; the foundations go down for one foot below the floor of cement which covered the enclosure, and it has been preserved to us simply by its solidity, its long through stones, and the way in which the stones have supported one another. We investigated the smaller tower very thoroughly, and found it also solid.

The religious purport of these towers would seem to be conclusively proved by the numerous finds we

made in other parts of the ruins of a phallic nature (*vide* Chap. VI.), and I think a quotation from Montfaucon's 'L'Antiquité Expliquée' will give us the keynote of the worship. 'The ancients assure us that all the Arabians worshipped a tower, which they called El Acara or Alquetila, which was built by their patriarch, Ishmael.' 'Maximus of Tyre says they honoured as a great god a great cut stone; this is apparently the same stone resembling Venus, according to Euthymius Zygabenus. When the Saracens were converted to Christianity they were obliged to anathematise this stone, which formerly they worshipped.' This tower doubtless corresponded to the sacred tower of the Midianites, called Penuel, or the 'Face of God,' which Gideon destroyed (Judges viii. 7). Allusions to these towers are constant in the Bible, and the Arabian historian El Masoudi further tells us that this stone or tower was eight cubits high, and was placed in an angle of the temple, which had no roof. Turning to Phœnician temple construction, we have a good parallel to the ruins of the Great Zimbabwe at Byblos; as depicted on the coins, the tower or sacred cone is set up within the temple precincts and shut off in an enclosure (*vide* illustration, p. 150). Similar work is also found in the round temples of the Cabiri, at Hadjar Kem in Malta, and the construction of these buildings bears a remarkable resemblance to that of those at Zimbabwe, and the round towers, or *nuraghs*, found in Sardinia may possibly be of similar significance. MM. Perrot

and Chipiez, in their History of Art in Sardinia, speak of these *nuraghs* as forts or temples, around which the primitive inhabitants of the island once lived. They are 'truncated cones, built with stone blocks of different sizes, narrowing to the top. The stones are unhewn as a rule and laid on without mortar.' Here too we have a parallel for our monoliths, menhirs of unhewn stone, and also for the phalli, specimens of which are found carved on stone (p. 57, figs. 49 and 50), and here too the intricate plan of the fortresses suggests at once a parallel to those at Zimbabwe; hence it would appear that the same influence was at work in Sardinia as in South Africa. In Lucian's 'De Syriâ Deâ,' which we shall have occasion again to quote when discussing our finds in Chapter VI., we find a description of a temple at Hierapolis, in Mesopotamia, in the propylæa of which, he tells us (§ 16), 'there stood two very large phalli, about thirty cubits high.' Our tower at Zimbabwe stood apparently twenty cubits high and ten in diameter. He further says (§ 29), 'These phalli are solid, for when a priest had to ascend he had to put a rope round himself and the phallus and walk up.'

Herr Mauch, in his account of Zimbabwe, alludes to a sacrifice which took place here amongst the natives in his day (1871). This ceremony seems to correspond very closely to the sacrifice celebrated elsewhere in this country to the spirits of their ancestors. It is pretty evident that another tribe of Kaffirs dwelt near Zimbabwe at that time, who

looked upon the circular building as sacred; whereas the present people do not seem to look upon it with any religious superstition, which will account for the growth of vegetable matter inside only during late years. This was further evidenced by our excavations in this building; we found but little depth of soil, very little *débris*, and indications of a Kaffir occupation of the place up to a very recent date, and no remains like those we afterwards discovered in the fortress.

The rest of the circular building, as the plan shows, is divided off into various smaller enclosures, and in one spot we imagine, by comparison with the temples on the hill, an altar stood; it is now only a heap of rubbish. There are also three remarkable monoliths erected in it, two near the north-western entrance and one behind the altar. They are about 11 feet in height—rough, unhewn blocks of granite, firmly buried in the ground. On the hill fortress, and also, as I have said, on the wall of the circular building, the quantity of monoliths is very marked, and stone-worship seems to have formed an integral feature in the ancient cult of this place. MM. Perrot and Chipiez write (vol. i. p. 58), ‘We find the worship of *betylæ* (*βαιτύλια*, bethels, *i.e.* sacred stones) in every country reached by Phœnician influence’ (*vide* Chap. VI.) Probably we shall be more correct in considering it an even more remote Semitic influence, which continued in vogue amongst the Phœnicians until more recent times. Palgrave in his

Arabian travels also speaks of the many monoliths he saw in Lower Nejed : ' Huge stones, like enormous boulders, placed endways perpendicularly on the soil. They were arranged in a curve, once forming part, it would appear, of a large circle. . . . That the object of these strange constructions was in some measure religious seems to me hardly doubtful . . . in fact, there is little difference between the stone wonder of Kaseem and that of Wiltshire' (Stonehenge).

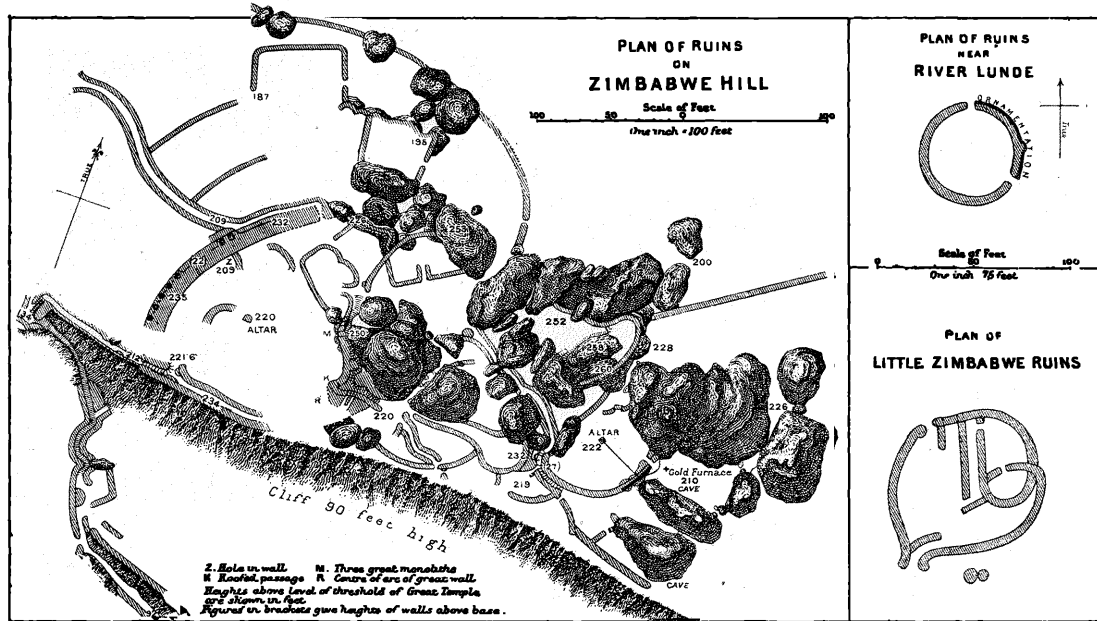
The valley between the lower circular ruin and the fortress on the hill is a mass of ruins. About a hundred yards from it, and connected by a wall, is a curious angular enclosure, divided into several chambers at different levels ; it has three entrances, all of which are straight, like those at the Lundi and Matindela, and not rounded off like those in the circular ruin. The main entrance leads into two narrow passages : the one going to the left is protected by an ambuscade ; the other, going to the right, ascends a slope, at the top of which evidently once stood two round towers, the bases of which we excavated, and near them we found several long pillars, presumably fallen monoliths. But here again the Kaffirs had been living until a recent date, and consequently we made no discoveries here. Outside this ruin we opened three kitchen middens, and came across one or two small articles of interest.

Sloping down from this ruin into the valley below a narrow passage conducts one through a perfect

labyrinth of ruins. Some of these, notably the large circular erection just outside the big temple, are of very inferior workmanship, and would appear to have been constructed at a much later period; whereas the wall surrounding a large space at the bottom of the valley is as good as the best part of the large circular building. We did not attempt any excavation amongst these, and if we had I expect the results would have been unsatisfactory. All the surface of them has been dug over and over again by generations of Kaffirs for their mealy fields. There is a great growth of brushwood, and probably a considerable depth of soil, which our limited appliances and inexperienced workmen would have found it hard to deal with.

Again and again these circular ruins repeat themselves, always, if possible, occupying a slightly raised ground for about a mile along a low ridge, acting, doubtless, the double purpose of temples and fortresses for separate communities, the inhabitants dwelling in beehive huts of mud around. This, to my mind, is the probable restoration of this ancient African settlement.

Down the valley to the north-west runs a long wall of irregular stones, roughly put together, for a mile or more—such a wall as Kaffirs would erect to-day to protect themselves from the advance of an enemy. This I do not connect with the more ancient and regularly built edifices, but it probably owes its erection to a period when Zulu hordes



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swept down on the more peaceful and effeminate descendants of the Monomatapa.

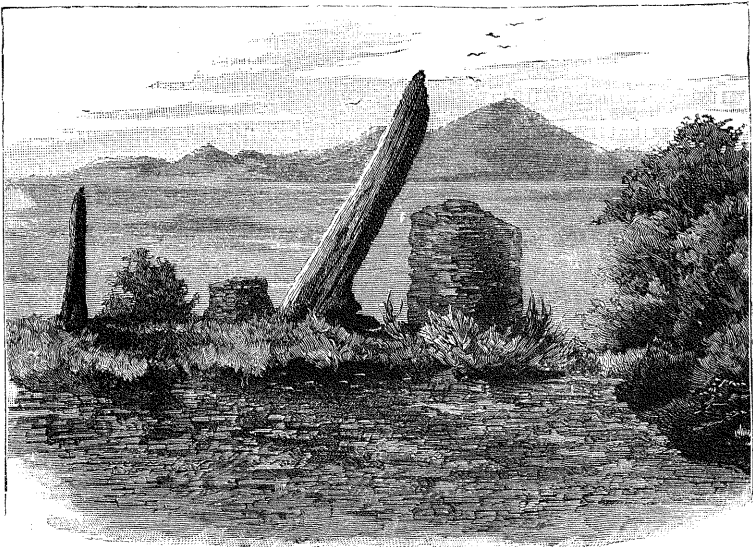
Many were the miles we walked in every direction, around and on the hill fortress, to the east, west, north, and south, intent on one object—namely, that of finding indications of a cemetery, which the ancient inhabitants of these ruins might have used—but our searches were always in vain. Kaffir remains we found in abundance, and a small cemetery of some twenty graves of rough stone piled over the bodies, about ten miles from Zimbabwe, also Kaffir, but nothing else. Consequently we came to the conclusion that the ancient inhabitants, who formed but a garrison in this country, were in the habit of removing their dead to some safer place. This plan seems to have a parallel in Arabia in antiquity, a notable instance of which is to be found on the Bahrein Islands, in the Persian Gulf, where acres and acres of mounds contain thousands of tombs, and no vestige of a town is to be found anywhere near them. The custom still prevails amongst the Mohammedans of Persia, who transport their dead to such places as Kerbela, Meshed, and Kum, to rest in the vicinity of some sacred shrine; and the absence of any burial place near Zimbabwe would seem to point to the same custom having prevailed here.

Having failed to bring to light any definite records of the past during the first fortnight of our work, we naturally cast our eyes around for the most likely spot to carry on our work, and our

choice fell on the south-western portion of the hill fortress. Here were certain indications which struck us as favourable, and furthermore it occurred to us that a spot situated on the shady side of the hill behind the great rock might possibly be free from Kaffir desecration; and the results of our excavations on this spot proved this to be the case, for here, and here only, did we come across relics of the past in our digging. In fact, the ancient builders seemed to have originally chosen the most shady spots for their buildings. Undoubtedly the oldest portions of the Zimbabwe ruins are those running along the sunless side of the hill fortress; on the other side, where now the Kaffir village is, we found hardly any trace of ancient structures. Our difficulty was to get the shivering Kaffirs to work there, for whenever our backs were turned they would hurry off to bask in the rays of their beloved sun.

I will now proceed to describe the hill fortress, approaching it from the valley below. The labyrinthine nature of this fortress will best be realised by a glance at the accompanying plan. The *kopje* itself is of great natural strength, being protected on one side by gigantic granite boulders, and on the south by a precipice from seventy to ninety feet in height, and on the only accessible side the ancient inhabitants constructed a wall of massive thickness, like those of the ruins below. This wall is thirteen feet thick on the summit, with a batter of one foot in six; it is thirty feet high in parts, and the flat

causeway on the top was decorated on the outside edge by a succession of small round towers alternating with tall monoliths; seven round towers in all we made out, about three feet in diameter, and several others had been destroyed by the fall of a portion of the wall. This system of round towers and monoliths



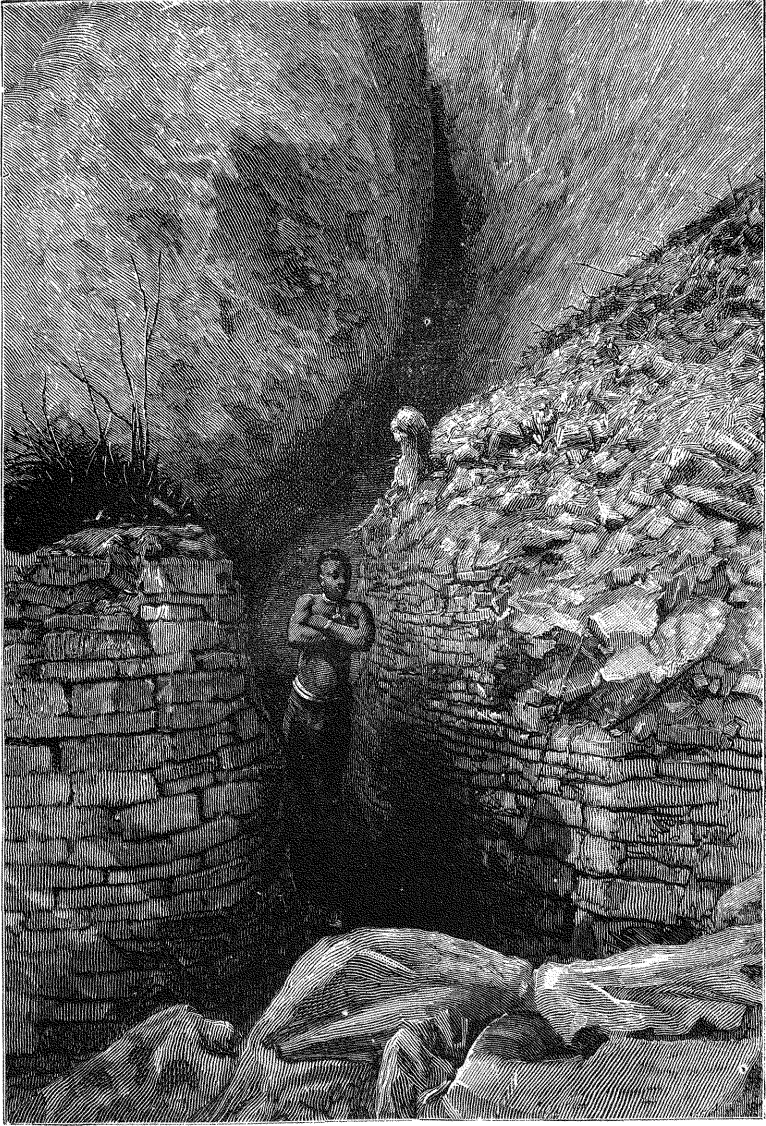
ROUND TOWER AND MONOLITH DECORATION ON THE FORTRESS

produces one of the most peculiar and unique forms of decoration I have ever seen.

To open out the approach to this fortress town was a work of considerable time and labour; it will easily be seen by the plan how intricate it is, protected at every turn with traverses and ambuscades;

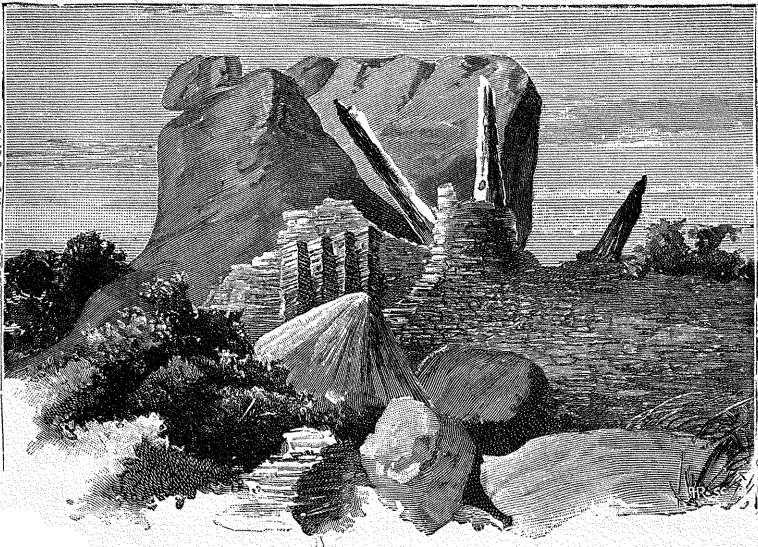
and there commences at the bottom of the precipice a flight of steps leading up the steep ascent. The architects availed themselves of a narrow slit in the granite boulder, up which the steps led, the passage being exceedingly narrow; then the path divided into two, one path turning abruptly to the right, and at the turning a pretty little bit of wall with the stones placed pointways for about a yard relieved the monotony and formed a sort of dentelle pattern; then it led along a narrow ledge over the precipice, and in spite of the impossibility of attack at such a point it was nevertheless protected by traverses even here. In fact, the redundancy of fortification all over this mountain, the useless repetition of walls over a precipice itself inaccessible, the care with which every hole in the boulders through which an arrow could pass is closed, prove that the occupants were in constant dread of attack, and lived like a garrison in the heart of an enemy's country.

At the summit of the mountain are huge boulders about fifty feet high. Immediately below the highest is a curious little plateau which had been decorated by the ancient occupiers; it is approached by narrow passages and steps on either side, and a curious passage through the wall below, covered with huge beams of granite to support the superincumbent weight. The steps on one side were made of the same strong cement, and the wall to the left was decorated with the same design of stones, placed edgeways for six rows, that we had



APPROACH TO THE ACROPOLIS

found at the angle of the approach. The little plateau itself was adorned with huge monoliths and decorated pillars of soapstone, the patterns on which were chiefly of a geometric character, and one of which was eleven and a half feet in height. Here too we unearthed many stones of natural but curious



THE PLATFORM WITH MONOLITHS, ETC., ON THE FORTRESS

forms, to which I shall have again occasion to refer in Chapter VI.

The large semicircular space below this platform was a dense jungle when we started to work upon it, consisting of nettles of extraordinary pricking powers and other obnoxious plants, which our

natives cleared away with marvellous dexterity. In the centre of this building stood an altar covered with a thick coating of cement, and several large blocks of cement were lying about. In a wall in this enclosure was another of those curious holes pierced through its thickness, and there was plenty of evidence to show that this had once been a most prominent point in the ancient structure, forming, as it does, by far the largest available level space on the fortress, and must probably have been used as an agora, where from the platform an assembled crowd could have been addressed, and for religious celebrations on a large scale. The view from it is extensive and magnificent over the Livouri and Bessa ranges, and situated, as it is, far above the level of the marshy ground below, it would be healthy and habitable during all seasons of the year.

The labyrinthine nature of the buildings now before us baffles description. In one place is a narrow sloping gully, four feet across, ascending between two boulders, and protected, for no conceivable reason, by six alternate buttresses and a wall at the upper end, forming a zigzag passage narrowed in one place to ten inches. Walls of huge size shut off separate chambers. In all directions everything is tortuous; every inch of ground is protected with buttresses and traverses. Here too, as in the large circular building below, all the entrances are rounded off, and I imagine that here we have quite the oldest portion of the ruins, built at a time when defence was the main

object. When they were able to do so with safety, they next constructed the circular temple below, and as time went on they erected the more carelessly put together buildings around, which I have described.

The south-western end of this line of ruins was obviously a temple ; it has been lately used as a cattle pen by the chief, but the soil has not been disturbed. On removing the soil we came across a level cement floor, supported on an elaborate system of under-walls filled up with large stones on which the cement floor rested, as was the case in the raised platform in the circular temple below. In the centre stood the altar, an angular structure of small granite blocks, which fell to pieces a short time after exposure to the air ; when we removed the soil which had buried this altar, around it we found the phalli, the birds or soapstone pillars, and fragments of soapstone bowls, which I shall subsequently describe more in detail.

On a portion of the wall outside, as in the circular building below, ran a pattern—a dentelle pattern, formed by placing the stones edgewise, with exactly the same aspect as the pattern below. To the north of the temple a steep ascent, constructed on supporting walls, led through the granite boulders to a hollow space walled in on one side, and protected by the rocks on the other three ; a rounded buttress guarded the entrance, and in the centre stood two tall monoliths of slate firmly fixed into the cement floor and the stones beneath ; from this spot a slope led up to

the top of the rock, on which a terrace had been constructed overlooking the temple and facing the rising sun. Another gully between two boulders, only wide enough for one man to pass at a time, led out of the temple to the side where the modern Kaffir village is. This had also been anciently strongly protected.

The temple was approached from the lower ridge above the precipice by a narrow passage between two high walls gently ascending to a flight of steps. This passage ended in a most curious architectural feature—namely, steps were formed leading to the temple on the one side, and apparently only for ornamentation on the other, by continuing the rounded courses of the outer wall so that they produced the effect of two miniature theatres facing one another, and proving almost more than any other point amongst the ruins the high pitch to which the ancient builders had brought their knowledge of keeping even courses in dry building. This point in the architecture proves the especial attention paid by the constructors to curves, and these curves would seem to have been constructed on the same principle as the curves in the large circular building which Mr. Swan will discuss in Chapter V.

Adjoining the temple to the north is another semi-circular building, the inner wall of which has six vertical rows, six feet high, let into the construction, as if for beams, with a ledge on the top, as if for a roof. We were unable to form any opinion as to the

use of this chamber, and though we emptied it of soil we found nothing in it.

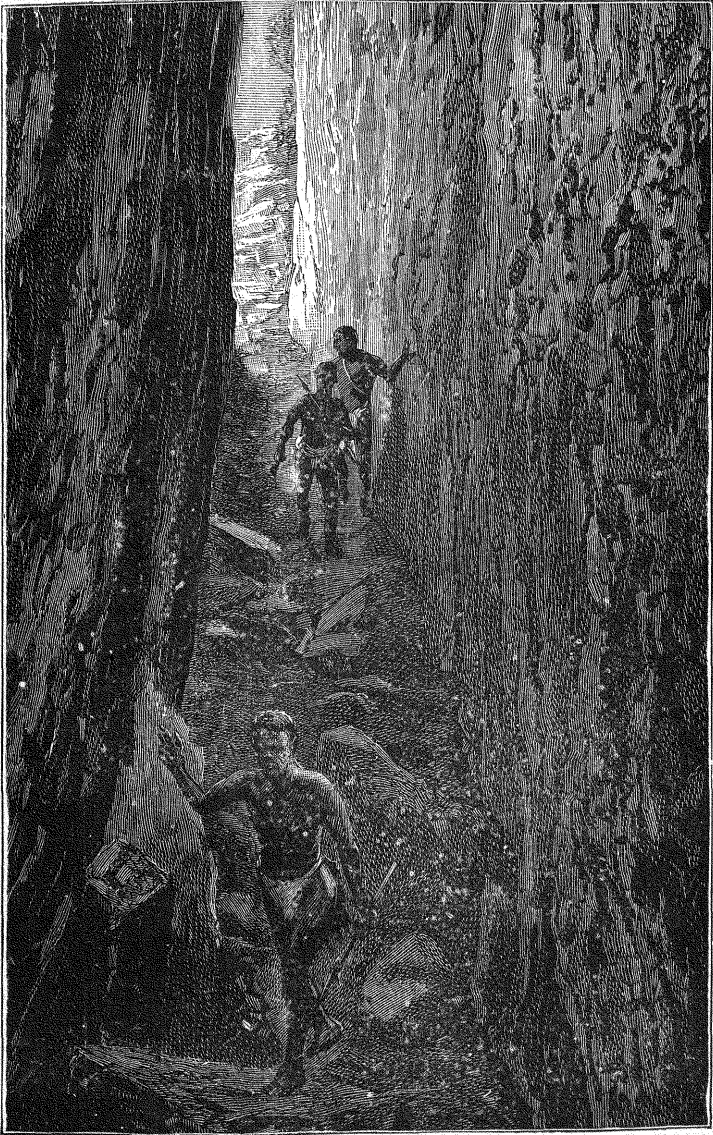
Between two boulders to the north-west of the temple led a narrow passage, tortuously winding, with walls on either side wedged up against the boulders, and every conceivable hole in the rocks was walled up. This passage led to another open space protected on two sides by rocks and on two by walls. This space was also full of wall foundations; but, being open to the sun, it had been occupied and ransacked by the Kaffirs.

To the south of the temple a flight of steps led down to the gold-smelting furnaces and the caves, of which I shall speak more at length in connection with the finds. This corner of the building was the only one in which our excavations were successful, and I entirely attribute this fact to its chilly and shady position—a spot studiously avoided by the succeeding generations of Kaffir tribes for this reason. Below the temple at the bottom of the precipice we commenced work, with great hope of finding the other portions of the bowls, &c., which we had found above. Here there is an enormous mass of fallen stones from the buildings above, but amongst them we found surprisingly little of interest. Perhaps a thorough excavation of this slope would yield further results, as so many of our finds in the temple above are fragmentary, and the presumption is that the other portions were thrown over the precipice; but

this will be a gigantic work, entailing an enormous amount of labour and expenditure.

Such is the great fortress of Zimbabwe, the most mysterious and complex structure that it has ever been my fate to look upon. Vainly one tries to realise what it must have been like in the days before ruin fell upon it, with its tortuous and well-guarded approaches, its walls bristling with monoliths and round towers, its temple decorated with tall, weird-looking birds, its huge decorated bowls, and in the innermost recesses its busy gold-producing furnace. What was this life like? Why did the inhabitants so carefully guard themselves against attack? A thousand questions occur to one which one longs in vain to answer. The only parallel sensation that I have had was when viewing the long avenues of menhirs near Carnac, in Brittany, a sensation at once fascinating and vexatious, for one feels the utter hopelessness of knowing all one would wish on the subject. When taken alone this fortress is sufficiently a marvel; but when taken together with the large circular building below, the numerous ruins scattered around, the other ruins of a like nature at a distance, one cannot fail to recognise the vastness and power of this ancient race, their great constructive ingenuity and strategic skill.

About eight miles from Zimbabwe, standing alone in a fertile valley, there is another ruin which we visited, presumably of a later and inferior date, for the courses and stones are irregular and correspond to the later constructions at Zimbabwe. It too stands



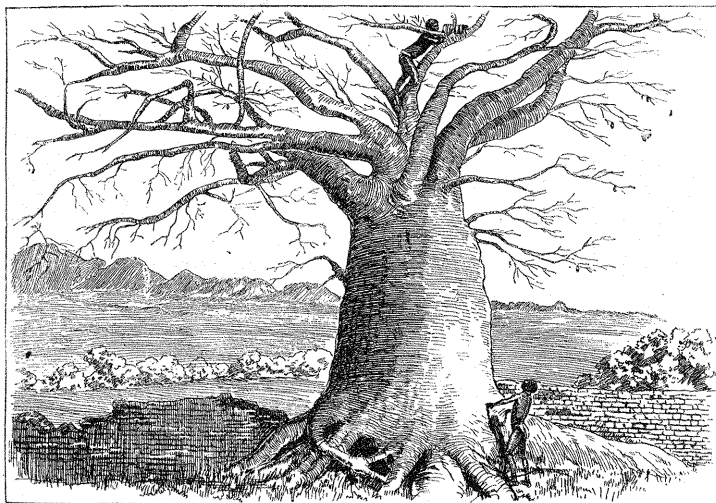
APPROACH TO THE FORTRESS BY THE CLEFT. ZIMBABWE

on a flat granite rock, and its structure is equally intricate, as will be seen from the plan. The natives know it by the name of the Little Zimbabwe, but for purposes of investigation into the origin of the constructing race it affords us no special point of value, which is the case also with most of the other ruins which we visited, and nothing need be said about them except to point out their existence. These remarks refer to the ruins which we found at Metemo, Chilondillo, Chiburwe, and in the Mazoe valley, all of which were obviously erected as forts to protect a surrounding population. Some of them are of the best period of workmanship, notably those at Chiburwe and in the Mazoe valley; others are of inferior workmanship, with uneven courses and irregularly shaped blocks of granite, proving that, as we find the two periods side by side at the Great Zimbabwe, also we have them scattered over the country.

The great ruin at Matindela is second only in importance to the Great Zimbabwe itself, and merits a close description.

The circular building at Matindela encloses an area not far short of that enclosed by the large circular building at the Great Zimbabwe; it crowns a low sloping granite *kopje* about 150 feet in height. The place is full of huge baobab trees, two of which in their growth have pushed down and grown up in the walls themselves. There are those that tell us about the fabulous age of the baobab, attributing an age of 5,000 years to the larger ones. The Director of

Kew Gardens, Mr. Thiselton Dyer, tells me that this is grossly exaggerated, and that a few centuries is probably all that can be attributed to the very largest. Be this as it may, the baobabs have grown up and arrived at maturity long after the building of the Matindela ruins and their subsequent abandonment.

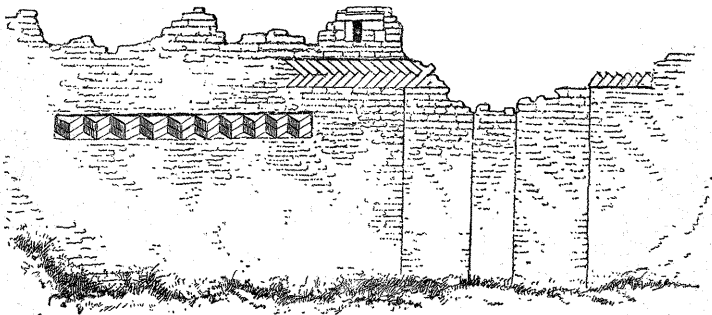


BAOBAB TREE IN MATINDELA RUINS

The best built portion of the wall has the same aspect as that at the Great Zimbabwe; but the other side, corresponding to the worst built part of the Zimbabwe wall, has never been completed at Matindela; the fact that the south-eastern side has been so strongly built and so much trouble has been spent on its decoration, and that the north side is compara-

tively open and neglected, and that the hill is equally assailable from both sides, leads one naturally to infer that the idea of a temple is here more prominent than that of a fortress.

The walls at Matindela are nowhere more than fifteen feet in height, nor are the courses nearly as regular as those at the Great Zimbabwe; but the great feature of interest is here the arrangement of the patterns, which establish beyond a doubt that they



WALLED-UP ENTRANCE AND PATTERN ON MATINDELA RUINS

were inserted in the walls for a more complex purpose than mere ornamentation. The arrangement of these patterns is as follows: First to the south-east comes the herring-bone pattern, running over the chief entrance as a lintel for six yards. Here it ends, and two feet below begins the dentelle pattern for the same distance; then the pattern stops altogether on the outside, but there are indications that it was continued on the inside instead. Then it is again inserted for forty feet on the outside, and finally is again

put on the inside for the remainder of its extent—namely, thirteen feet. Above the pattern and nearly over the principal entrance a curious loophole is still left standing, and the best portion of the wall has been battlemented, the outside portion being raised in front two or three feet higher than the back. The wall is eleven feet six inches at its thickest, and on the top of it we saw holes in which monoliths evidently once stood, as they did on the wall of the circular building at the Great Zimbabwe.

Another very marked feature at Matindela is that the doorways are all square, like those at the Lundi ruin, and not rounded off, as those at Zimbabwe, and then again all these doorways have been walled up in an uniform fashion, the courses corresponding exactly to those of the rest of the wall. In the original construction of the building certain spaces of seven feet had been left in the wall; two feet on either side had then been built up, thus leaving an entrance of three feet, which entrance in its turn had also been walled up. Here, as at the Great Zimbabwe, the theory at once occurred to me that these places had been walled up at a time of siege; but when one takes into consideration the care with which these apertures have been walled up, and the triple nature of the added wall, this theory seems untenable. The walling up of the pylons in certain Egyptian temples at Karnak, which Prof. Norman Lockyer brought before my notice, seems an apt parallel, though the reasons for so doing do not seem to my mind at present sufficiently

proved. It must also be borne in mind that the walling up of the principal entrance at Matindela must have taken place prior to the construction of the pattern which rests upon it.

The interior of this building, as will be seen from the plan, was divided up into chambers, as the other ruins at Zimbabwe, but the walls here are much straighter, and the circular system of construction seems to have been more or less abandoned. I take it that this ruin at Matindela was constructed by the same race at a period of decadence, when the old methods of building had fallen into desuetude.

Outside the walls of the temple or fortress we found many circular foundations, very regularly built of granite blocks, and varying in diameter from six to fifteen feet. They were built in groups at considerable intervals apart, and we counted over forty of them. Some of these circular foundations have a double circle, as if for a step; the probability is that they formed the foundations of stone huts like those found in the Marico district of the Transvaal, and were the homes of the ancient inhabitants under the protecting wing of the temple-fortress. There are no traces of these circular foundations within the walls of the enclosure, but all were found outside within a radius of two hundred yards. There are traces, too, of other buildings about half-way down the slope of the granite hills, two walls parallel to one another, about thirty feet long, with doorways and six circular foundations outside them. There are also two depres-

sions on the eastern side of the hill, now filled up with timber, which were probably the quarries from which the builders obtained the stone for their work.

About twelve miles to the north of Matindela, near a mountain called Chiburwe, on another low granite hill, we found another fort with similar circular foundations on the plain around it. This fort is about forty feet in diameter, and the walls are of the best period, with courses far more even than those of Matindela, and the stones of more uniform size and fitting more closely, corresponding to the best of the buildings at the Great Zimbabwe. Here, too, was another gigantic baobab tree, which had grown up in the wall and knocked it down; and here, too, the south-eastern portion of the wall is much better and thicker than the rest, which has in places either never existed or fallen down; but the destruction here was so complete that it was impossible to tell if there ever had been a pattern on it or not.

CHAPTER V

*ON THE ORIENTATION AND MEASUREMENTS OF
ZIMBABWE RUINS. BY R. M. W. SWAN.*

THE form of nature worship which was practised at Zimbabwe found one of its expressions in the worship of the sun, and we have evidence of this cult in some architectural features and decorations of the temples themselves, and in the many images of the solar disc which were found in the temples along with the other symbols of the worship of reproductive power. It was very natural that these two cults should be associated together or merged in one, and it was common to many early peoples to think of the sun in conjunction with moisture as the great creator of all vegetable fertility, for even the most casual observation would show them that in the dark days of winter the vegetable world seemed to sleep, and that it only awoke to activity when the sun's rays had become more powerful and while the soil was still moistened by rain.

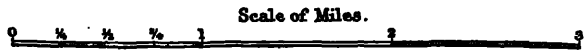
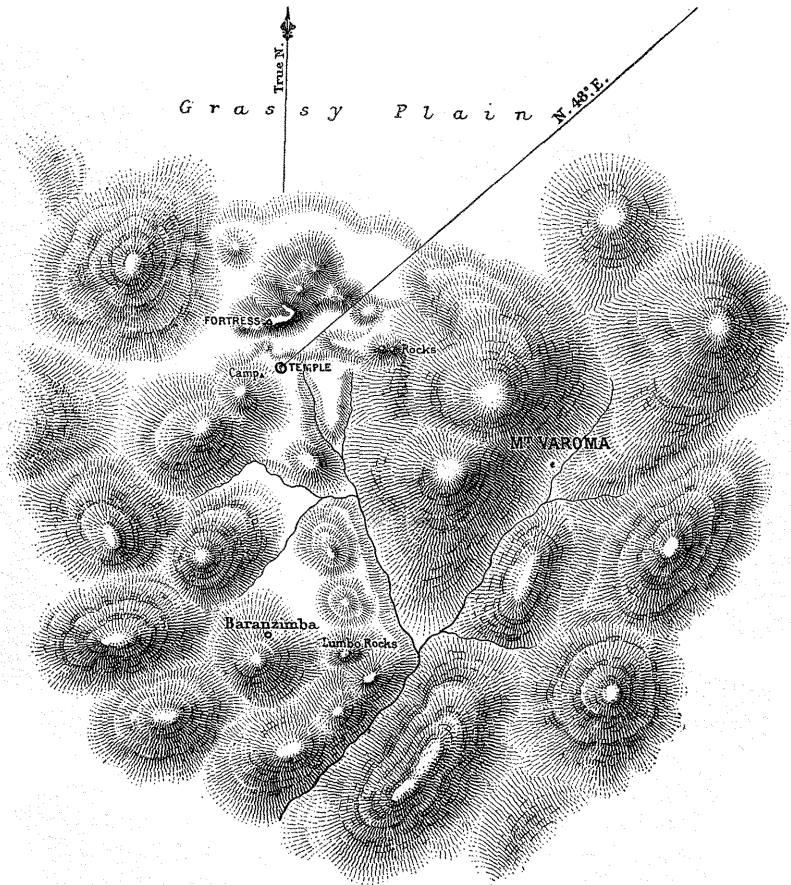
All religions have their times and seasons for special ceremonies of worship, and the appropriate time for the greatest of these festivals of solar worship

would be at mid-summer, when the sun seemed most brilliant and his rays most energetic. Accordingly we find that at Zimbabwe means had been provided for ascertaining the time of the summer solstice, and that the side of the temple which faced the rising sun at this period of the year was adorned with a decoration symbolical of fertility.

But the temples at Zimbabwe seem also to have served a more directly practical purpose than that of mere worship of the powers of nature, and while regulating the festivals held in honour of natural powers, to have provided the means of observing the passage of the seasons and of fixing the limits of a tropical year, and thus providing the elements of a calendar.

The duration of a day is clearly marked by an apparent revolution of the sun, and from the most remote antiquity a month has been equivalent to the length of a lunation; but there is no equally obvious astronomical phenomenon to enable the length of the year to be fixed; and although the difference between summer and winter is very apparent in most climates, there is nothing which very obviously defines the limits of these seasons, and the periods of spring and autumn are even less marked. But the dates of all festivals in solar worship would have some relation to the seasons; and, besides, the times for agricultural and many other operations would require to be fixed, and it would thus be doubly necessary to find means of marking the progress of the year. By most ancient peoples twelve lunations were considered to be equal

MAP OF
ZIMBABWE DISTRICT.



F.S. Waller

to a tropical year, but it was soon discovered that this was not so, for the several months did not long coincide with their appropriate seasons, and so the history of most ancient calendars tells of devices to make the twelve lunar months of $29\frac{1}{2}$ days each correspond with the tropical year of $365\frac{1}{4}$ days. At Zimbabwe things seem to have been better arranged, unless there, too, as in ancient Egypt, they had their troublesome civil year measured by twelve revolutions of the moon, in addition to their sacred year measured in the temples by an apparent revolution of the sun among the stars.

The simplest way of ascertaining the period of a tropical year is by observing the position of the sun relatively to the equator, or its declination, and this can conveniently be done either when the sun is on the horizon or on the meridian, but most easily with accuracy in the former way, as the angle to be subdivided will generally be greater, and greater accuracy will be attained, because long shadows can more conveniently be used in this way than in the other. Or the right ascension of the sun might also be observed; that is, its place among the stars, or its position in the zodiac. This can be found most readily by observing the heliacal rising of stars, or the meridian passage of stars when the sun is near the horizon. At Zimbabwe all of these methods seem to have been used, and to do so does not necessarily imply more astronomical knowledge than is possessed by the peasantry in any of the more secluded districts of

Europe, where watches are not much used, and where almanacks are not read, but where the people have the habit of telling the time of the day and of the year by the motions of the sun and of the stars; for to an agricultural people the change in position of the sun in summer and winter is as obvious as the seasons themselves, and the variation of the times of rising of the stars with the seasons can as little escape observation. Herodotus tells us that the Greeks used the gnomon to measure the length of shadows, and thus ascertain the position of the sun at midday, or its declination. The Chinese also used it at a very early period, and we have similar arrangements in some of our modern churches. Instances of the observation of the position of the sun on the horizon, except at Zimbabwe, are few and doubtful, although gnomons seem sometimes to have been used for this purpose; but ancient literature contains very many references to the observation of the heliacal risings of stars, and ancient architectural remains illustrate these literary allusions. Hesiod often speaks of the times of different agricultural operations having been fixed by the rising of stars, and Egyptian records tell us that the rising of Sirius was observed at the overflowing of the Nile; also it has recently been found that both Egyptian and Greek temples were generally built so that the rising of some star could be observed from their sanctuaries, and a coincidence has been traced between the date of the great festival proper to each

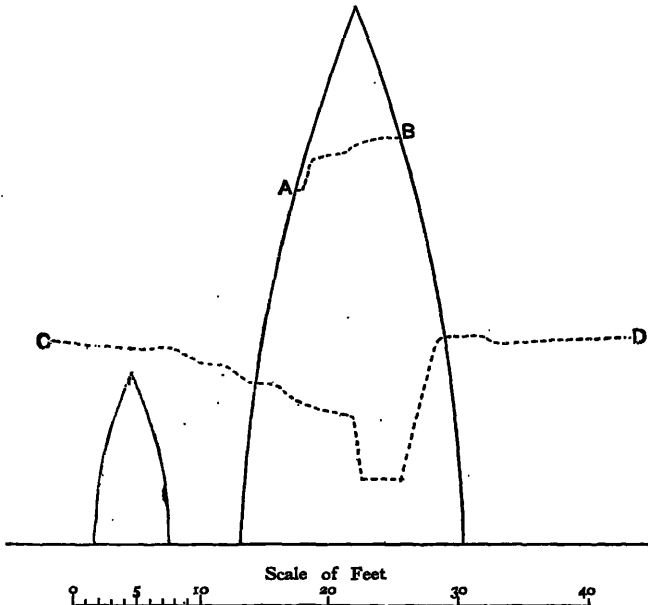
temple and the time of the heliacal rising of the star towards which the axis of the temple was originally directed. The Malays, at the beginning of this present century, had a tradition that their seed-time had in old days been very well fixed by the rising of the Pleiades, but that since they had become Mohammedans the festivals of their religion and its calendar did not so well regulate their seed-time as was done in old times. It has been found that means were provided by the ancient Egyptians for observing the meridian transits of stars; and did we possess detailed and carefully oriented plans of the temples of Chaldæa and Assyria, there is little doubt that we should find that the meridian had been observed there also.

Thus it is evident that the several means which were adopted at Zimbabwe for observing the motions of the heavenly bodies were used in other countries also, and in all cases they seem to have been used for regulating the time of celebration of religious festivals as well as the ordinary affairs of life. Forms of nature worship analogous to that practised at Zimbabwe seem often to have been accompanied in other countries by an observation of the heavenly bodies. It is also worthy of note that the stars which were observed at Zimbabwe seem all to have been northern ones, and the builders of these temples probably acquired the habit of observing these stars in the northern hemisphere. To this we shall refer again.

What El Masoudi says of the temples of the Sabæans of Mesopotamia does not, of course, directly apply to the temples at Zimbabwe; but in the plans of those temples one is reminded of the multiform temples which he describes, and of the mysteries involved in some of their architectural features which he could not fathom, for in these temples of Mashonaland there are some curious evidences of design in plan. A glance at the plan of the great temple suggests that the architects had carelessly drawn a great ellipse on the ground and built round it, getting occasionally out of line and leaving occasional doorways; but when one realises the wonderfully careful nature of the masonry, and the great accuracy with which the comparatively rough stones have been laid in regular courses, and been forced to combine to produce regular forms, and when a careful plan of the whole building has been made, then it is seen that what were regarded as careless irregularities in construction are, in reality, carefully constructed architectural features, which doubtless had some religious significance to the worshippers, but whose meaning remains a mystery to us.

The walls which are lightly shaded in the accompanying plans are much inferior in construction to the more darkly shaded walls, for while the latter are built in most regular courses, and the stones are most carefully packed in the whole thickness of the walls, the former, though sometimes having the exterior courses laid with some regularity, are most

carelessly built in their interior, and the stones seem to have been laid in anyhow, and consequently there is a great difference in the durability of these walls; and while it would almost be possible to drive a cart



A B shows present top of tower. C D shows outline of walls as seen in illustration, Chap. VI.

THE TWO TOWERS

along the top of the better-built part of the outer wall, one can only creep along the top of the worse-built portion while risking a fall. Besides, the better-built and the worse-built portions of the outer wall do not unite near the great doorway, and the foundation