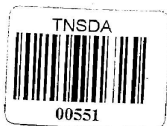


REPORT

OF

THE COMMITTEE APPOINTED BY THE GOVERNMENT OF
HYDERABAD STATE UNDER THEIR ORDER NO. 594, DATED 1-8-58 F.



PART I

Preservation and Maintenance of the
Cave-Temples of Ajanta

The Committee visited the Cave - Temples, 12th - 18th May, 1949,
including the days of travel.

ILLUSTRATION ON FRONT COVER
BY COURTESY OF NIZAM'S STATE RAILWAY.

REPORT

OF

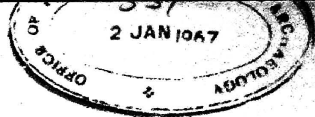
**THE COMMITTEE APPOINTED BY THE GOVERNMENT OF
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PART I

Preservation and Maintenance of the Cave-Temples of Ajanta

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To

The Secretary to Government,
Archaeological Department,
Hyderabad-Deccan.

Dear Sir,

With reference to your D. O. No. 594, dated 1-8-1358 F., I beg to submit herewith 12 copies of Part I of the Report on the preservation and maintenance of the Ajanta Caves. Part II of the Report dealing with the Ellora Caves will follow in due course.

Dr. A. N. Heron, as you know, left for England, so the work of examining the monuments and making the recommendations devolved on the other members of the Committee including your worthy self.

I may be permitted to observe that in compiling the Report we have not followed the order of the 'the terms of reference' in our recommendations, owing to obvious difficulties; for instance the first item 'long and short term measures' could appropriately be dealt with at the end of our recommendations, and we have done that accordingly. Similarly, the item 'the selection of sites for the building of aerodromes' has been dealt by us under the sub-heading 'Amenities to Visitors'. We have not, however, transgressed the 'terms of reference', and based our recommendations entirely on them. The 'terms of reference', and the main divisions of our recommendations are given in the beginning of the Report.

An important matter in which I as well as my colleague, Mr. M. Ahmad Mirza, ask for your kind help is that for the preparation of estimates based on our recommendations, and afterwards for carrying out the work chalked out in the Report the services of some officers of the P. W. D. will be required. We, therefore, in view of the urgency of the case, suggest that a Special Sub-Division be created to deal with the preparation of plans and estimates, and later on to execute the work. It is fortunate that, at the moment, we have Mr. A. Shiv Rajas Superintending Engineer of Aurangabad Circle, who some years back, as the Executive Engineer of Aurangabad, took special interest in the Archaeological work carried out at Ajanta. We recommend that when the proposed Sub-Division is created it may be placed directly under Mr. Shiv Raj and that he be given the option to nominate the Sub-Divisional Officer for it.

Perhaps, I shall be transgressing my limits when I suggest that no time should be lost in starting the work. The programme should be spread over a period of 5 years, as recommended in the Report, and that an initial grant of Rs. 4 lakhs, and an annual grant of Rs. 1 lakh may kindly be sanctioned by Government, and included in the state budgets.

In conclusion, I thank you heartily on behalf of myself and that of my colleague, Mr. M. Ahmad Mirza, for your willing help and ready co-operation. I would also ask you to convey our profound sense of gratitude to Government for entrusting this important work to us.

Ghulam Yazdani

Chairman,

The Committee for the
Preservation and Maintenance
of Ajanta and Ellora Caves.

Hyderabad-Deccan.

Dated, 2nd June 1949.

Personnel of the Committee

Dr. Ghulam Yazdani, Ex - Director, Archaeological Department	<i>President</i>
Mr. Mohd. Ahmad Mirza, Ex - Chief Engineer & Secretary, P. W. Department 	<i>Member</i>
Dr. A. N. Heron, Special Officer, Geological Survey Department (He left for England and could not work.)	<i>Member</i>
Mr. Sajjad Mirza, Secretary, Education Department ...	<i>Convener</i>

Terms of Reference

- 1 To suggest short-term and long-term measures for the protection and preservation of Ajanta and Ellora cave-temples against further deterioration.
- 2 To suggest further measures for the conservation of frescoes at Ajanta.
- 3 To suggest effective measures for the maintenance of cave - temples.
- 4 To consider the question of entrance-fee to the caves at Ajanta and Ellora as a source of income for purposes of maintenance.
- 5 To make proposals with regard to amenities to visitors to Ajanta and Ellora.
- 6 To report on the possibility of construction of landing grounds at Ajanta and Ellora to enable tourists to visit these places by air.

MAIN DIVISIONS OF THE REPORT ON AJANTA

- I Artistic significance of the wall - paintings.
- II Maintenance of the cave-temples and copying of the paintings in the past: Retrospect.
- III Geology of the Ajanta hill: Causes of the decay of rock.
- IV Improvement of drainage and other protective measures.
- V Conservation of the cave - temples.
- VI Maintenance of the cave - temples.
- VII Conservation of the wall - paintings.
- VIII Amenities to visitors — Accommodation; Catering; Conveyance and Travel Facilities (landing grounds for air-services); Facilities to see the monuments under proper guidance; Supply of popular literature on the spot; Facilities to enjoy the scenic beauty of Ajanta.
- IX Long-term and short-term measures: Initial grant and the recurring grant; Creation of a Special Sub-Division to carry out the work.
- X Entrance-fee from visitors.

REPORT

PART 1

AJANTA

Indra and the Troupe of Musicians

Vihara XVII

Vth Century A. D.

Artistic Significance of the Wall - Paintings

THE wall-paintings of Ajanta, in regard to their age, cover a period of eight hundred years, the earliest paintings belonging to the second century B. C., and the latest to the 6th century A. D. They represent the work of artists of different calibres; the most accomplished and the mere beginners, who worked side by side in a spirit of religious service. The earliest specimens show a well-developed art both in technique and high intellectual qualities. Some of the later paintings, belonging to the 5th century A. D., bear resemblance in certain aspects to the work of some master artists of Italy of the 15th and 16th centuries. In this connection the wall-painting in cave I representing the Great Bodhisattva has been specially compared with certain paintings of Michel Angelo (1475-1564) in the ceiling of the *Sistine Chapel*, Rome. Similarly, the group of ladies painted on the left wall of the chapel in the back corridor of cave-temple II, to the right of the ante-chamber, has often been compared with the '*Primavera*' of Botticelli (1447-1510). The art of Ajanta, although deeply religious, does not betray a narrow outlook upon the pleasures of life. Side by side with *bhikshus*, clad in plain robes, we notice young girls in chic garments, their coiffures and jewellery exhibiting a highly refined taste. The human and the spiritual aspects of life are so skilfully blended in the art of Ajanta that none prevails upon the other, and the layman is as much impressed by the beauty of the paintings, and the significance of the stories represented therein, as the most religious-minded person. The art of Ajanta, further, is neither sensuous like that of Pompeii, nor pathetic like that of Italy. The artists of Ajanta appreciated the beauty of nature, and the grandeur of the stately trees, the subtle charm of ferns and creepers, and the lovely forms and colours of flowers are profusely represented in their work. They were also not unmindful of the pretty forms of birds, and the striking figures of animals, and these have been painted sometimes in a realistic manner, and sometimes in a conventional style to suit their decorative schemes. Their colour sense also was highly developed, which is shown with effect in the happy contrasts to be noticed in their colour schemes. Their drawing may not be superior to that of the later European artists of the Renaissance period, but for religious calm and inner expression they excel the specimens of the best art of any other country. The paintings constitute a unique record of Indian religious thought, social life, and artistic skill, and as such are worthy of being preserved at all costs by Government, as well as by the people of India.

II

Maintenance of the Cave-Temples and the Copying of the Wall - Paintings in Retrospect

IT will be appropriate to state here how during the period of one hundred and twenty-five years, since the rock-hewn shrines of Ajanta and the frescoes therein came to the knowledge of the literary world, the local chiefs and the rulers of the Deccan, irrespective of any consideration of caste and creed, have recognised their debt of reverence to the master sculptors and painters of these monasteries (*viharas*) and temples (*chaityas*), and shown a deep interest in their preservation and maintenance. In the middle of the last century (A. D. 1840-60), when Major Gill of the Madras Army was deputed by the East India Company to copy the frescoes of Ajanta, Nawab Salar Jung's estate, in whose jurisdiction the caves were situated, made handsome grants for the cleaning of the caves, and appointed a special staff for the safety of Major Gill's life, because the country at that time was infested with bandits and robbers of the Bhil tribes. The estate also arranged for the creature comforts of Major Gill, and placed an elephant at his disposal to ride about in the country.

The Salar Jung estate offered similar facilities to John Griffiths, Principal, School of Art, Bombay, when during the eighties of the last century, he with a party of his students made several visits to Ajanta to copy the frescoes for the second time, because the majority of the copies made by Gill were destroyed in the fire at the Crystal Palace, where they were exhibited, in 1866. Griffiths' mission was financed jointly by the Bombay Government, the Government of India and the Nizam's Government; but the enthusiasm and the interest shown by the students of the School of Art in assisting the mission was not negligible, and it may be interesting to quote Griffiths on the subject; "who (students) wrought with untiring zeal under very trying conditions. This little company comprising Protestants and Romanists, Zoroastrians, Brahman, and Jain met together on the common ground of Art to work in these ancient Buddhist shrines".

SOMEWHAT strange though the catastrophe may appear, yet eighty-seven copies of Griffiths, out of a total of one hundred and twenty-five, were completely destroyed, or damaged by fire on 12th June, 1885. From the residue Griffiths prepared his monumental work, *The Paintings in the Buddhist Caves at Ajanta*, which was published under the authority of the Secretary of State for India in A. D. 1896.

LADY Herringham, an ardent lover of Indian Art, and herself an artist of great talent, came out to India first in the cold season of 1906-7, and she was so much fascinated by the frescoes of Ajanta, that she paid a second visit in the winter of 1909-10, and a third in 1910-11. The result of her successive visits is the excellent volume, entitled *The Ajanta Frescoes*, published by the India Society in 1915. In her work at Ajanta, Lady Herringham associated with her both Indian and European artists, some of whom have since acquired fame, notably Nand Lal Bose, Syed Ahmad and Asit Kumar Haldar.

LADY Herringham was not satisfied with the attention paid by the Government of India to the preservation of the caves, and in several of her letters, addressed to the Nizam's Government, she pointed out the appalling conditions obtaining at that time. The columns had decayed, the shrines and corridors were choked with silt, bats and other birds had made their nests along the walls, and the smell in the interior of the caves was absolutely nauseating. The condition of the frescoes was all the more deplorable; the painted layer owing to the havoc wrought by insects and moisture was getting detached from the rock-hewn walls, and had become so brittle that it perished by the gentlest touch. Lady Herringham further warned that if immediate steps were not taken to preserve these monuments, which are India's most authentic specimens of art and culture, they would be lost to posterity. The letters of Lady Herringham made a deep impression upon the Nizam's Government who were already anxious to save from further deterioration these great treasures of the country's artistic skill and intellectual achievement. In 1914, an Archaeological Department was constituted in the State, which in the course of time took adequate steps to preserve the frescoes on the one hand, and to make access to the rock-hewn shrines of Ajanta on the other. Two experts were brought out from Italy to treat the frescoes, and simultaneously to teach Indian mechanics the scientific methods of saving the wall-paintings from deterioration. Roads and bridges were constructed and omnibus services started, so that an ordinary student may also be able to visit Ajanta. A Guest House was built at Fardapur, a village 4 miles from Ajanta, and a Travellers' Bungalow also was constructed at the same place for the comfort of those who have limited means. The Department also published an authoritative account of the paintings, both from the religious and artistic points of view, for the information of scholars and art-connoisseurs, and issued a guide-book in three languages, English, Urdu and Marathi, and a series of picture postcards, both colour and monochrome, for the general public.

THE Department had also planned out a programme to make Ajanta more intimately known to the world; and with this object sites were selected for the building of aerodromes, view-points were surveyed whence the visitor may enjoy the scenic beauty of Ajanta, footpaths laid out along the brow of the hill, and a bridge constructed to enable the sight-seer to watch the water-fall, and if he was fond of bathing to make use of the natural pool below the water-fall.

THE last World War brought in its train retrenchment even in the programme of nation-building departments, and this evil was augmented in the case of the Archaeological Department by the apathy of the last three ministries of the State. The attention of the Military Government of Hyderabad towards the preservation of the rock-hewn shrines of Ajanta and the wall-paintings therein is highly commendable, particularly in view of the multifarious nature of the duties which they have to discharge, and the financial and other difficulties with which they are beset. The enthusiasm of the Secretary, Education Department, and the prompt action of the Government are most opportune, because in dealing with the problems involved in this case, one should never forget the fact that the destructive forces of nature are continuously at work, and any delay on the part of man in combating them may result in disaster. The chief enemy is the monsoon which in spite of being periodical, has caused pockets in the heart of the rock whence water flows in different directions, and percolates through cracks and chinks in the rock-ceilings of temples, some of which are painted. Monsoon water also flows on the rock-roofs of the shrines and in its downward course falls on the facades of several temples. The columns, architraves, and friezes of the latter have decayed badly through the action of water. This Committee has, therefore, paid the utmost attention to the problem of 'drainage', and made a thorough survey of the natural watershed of the hill by climbing up the spurs which rise above the rock-roof of the caves.

III

The Geology of the Ajanta Hill: the Principal Causes of the Decay of Rock

THE Ajanta caves have been excavated along and in the middle of a scarp bordering the river Waghori. This scarp is crescent-shaped with a relatively gentle fall along its face from cave I to cave VII and with an abrupt one developing into a precipice onwards. Practically, half the caves face the west and the other half the east. The ridge line over caves I-VII is knife-edged, then it broadens until the caves are passed and the water-fall is reached. The water-fall, having a total height of 178 ft., is in seven stages, the last one, the *Sat Kund*, revives the river, once again, to activity.

THE rock formations are classified into two main divisions, that is, the Igneous and Sedimentary, and a subsidiary one, the Metamorphic. One of the sub-divisions of the Igneous rock is the Trap, which is composed of Felspar and Hornblende, and its harder quality, the Basalt, consists of Felspar, Augite and Iron. All the mineral constituents of these two rocks are acted upon by water. Another characteristic of Trap is that it is found in bands and each eruption is distinctly defined by the plane of cleavage, sometimes fine and imperceptible, and at others, by intervening thick layers of decomposed matter. This phenomenon gives the effect of terraces to the hills, which is such a common sight in the plains of Black Cotton Soil tracts to which Ajanta hills are not an exception. If the bare surface of the rock is exposed for long in geological years, and acted upon intensively by atmospheric influences, it becomes

porous and forms the means for a subterranean reservoir for rain-water. The Nahr-i-Ambari, which supplies water to the town of Aurangabad, utilises such a stratum and with much success. In short, all these phases in the life cycle of a Trap formation show that this rock is a child of circumstances, and circumstances vary a great deal; hence the hardness of stone from the mere mud to the hardest quality. The Ajanta cave-temples lie in such a formation.

THE destructive forces are the wind, sun and rain. There is not much effect of the wind as the spur containing the caves is fully sheltered. The beating of the sun and the temperature changes caused by it affect the rock superficially, resulting in expansion and contraction cracks. It is possible that these cracks extend internally and keep enlarging by virtue of the stresses set up. Suffice it to say that the cleavages, faults and cracks in the body of the rock give rise to a system of channels for the rainwater to seep through, and water being an excellent solvent, gradually and systematically washes off the mineral contents, Felspar and Hornblende in the case of Trap rock, until the texture becomes too cellular to stand by itself. Inside the caves, the oversaturation is enough to detach the decomposed lumps of rock, and outside where the sun in addition has its play, the expansion and contraction completes the destruction.

IV

Improvement of Drainage and other Protective Measures

(A) IMPROVEMENT OF DRAINAGE

(a) The ridge line over caves I-VII is practically knife-edged, but the spur has a relatively gentle slope. The drain should be aligned as high up as possible from cave VII towards cave I, and detoured either around the nose of the spur as to clear the footpaths of the outfall, or dropped across the footpath into the river as shown on Plan No. 1. This has been shown as Drain No. 1.

(b) Drain No. 2 will commence from cave XII, cover up the water-shed up to cave VII, and then cut across the ridge as shown on Plan No. 1. The governing factor of the alignment here is the possible depth of cut across the ridge, and the deeper it is the lower shall be the course of the alignment.

(c) Between caves XX and XXI, there is a bare piece of rock over which the stream debouches. This has been utilised for the outlets of drains No. 3 and No. 4. Drain No. 3 will start from cave XII and Drain No. 4 from cave XXIV and drop into the stream.

(d) Drain No. 5 will start from cave XXIV, clear cave XXVIII and fall into the river.

All these drains shall be constructed in masonry or cement-concrete, designed to cope with a run-off of 4 inches per hour with a slope to develop a velocity of 4 to 6 ft. per second.

(B) WATERPROOFING

(a) The Surface Drainage is likely to cut out a lot of flow over the caves, yet seepage may result from the undrained surface of the caves, and as a remote possibility even from the opposite side of the water-shed, provided the subterranean channels exist. Taking the normal conditions into account and realising the importance of caves I, II, XVI and XVII in which frescoes exist, we feel that the exposed parts of these caves should be provided with a protective carpet to eliminate the possibility of direct seepage. Therefore, our recommendations are as follows:—

(b) All the debris and over-burden over caves I and II, up to the newly-aligned drain, and over caves XVI and XVII, as high as possible, should be removed to the rock level and the cleaned surface after regularising be given a carpet of Gunite. The thickness of the carpet shall not be less than $2\frac{1}{2}$ inches, and shall be jointless throughout with the requisite provision of temperature reinforcement.

(c) Isolated leakages are noticeable in the northern side of the outer veranda of cave VI, in the front veranda of cave VII and at several places in cave XIII. Patch repairs by Gunite be carried out at places of mischief.

Guniting equipment existed once at Dindi Project. If it can be made available, it may be utilised. If not, services of The Hindustan Construction Co. of Bombay, the licencees of Guniting Process, be obtained.

(C) STONE PRESERVATIVES.

What type of 'preservative' would be effective in this particular case is a matter for experiment because the climate of India differs much from that of England, or any other European country? Therefore, we recommend that various 'stone preservatives' be tried and that which satisfies most be taken for a standard, and used on such sculptures and ornamental detail as are desired to be saved from further deterioration. Here is a chance for an Indian Chemist to show his talent.

V

Conservation of the Cave-Temples

(i) CAVE I. Water percolates in three places in this monastery, the back corridor, the veranda, and the interior of the chapel to the right of the court. To prevent percolation of water in this cave-temple two drains were constructed previously, and the rock-roof was covered with a layer of cement-concrete. But these measures have proved inadequate and the percolation of water still continues. As at the top of the hill, the roofs of cave-temple I-VII come under one water-shed, the building of drains for the protection of any particular cave is not likely to give satisfactory results. The Committee has dealt with this problem under the heading Drainage and made suitable recommendations. In the ceiling of this cave-temple instead of grouting the crack with cement (or with cement-concrete where the aperture in the rock is wide enough) the Committee recommends the insertion of a broad based Zinc drain after the decayed portion of the rock has been completely scraped off. This drain should be fixed into the rock by bolts and its lower side which will be flat should remain even with the surface of the ceiling, and be given a neutral tint to match the rock colour. The drain may be taken to the nearest wall and along it to the floor and connected with a channel cut in the floor, the latter being extended to the outer court of the cave. The drains which are to be cut in the floor will be covered with masonry slabs (or cement slabs) at their top. The work although small requires scientific knowledge and neat workmanship, and should be done under the supervision of a competent officer. A few years ago a similar zinc drain was inserted in the ceiling of the back-corridor of this temple (near the wall-painting, Great Bodhisattva). The work has evidently been done carelessly for the drain leaks in three places. The drain should be opened and reset after the cause of leakage has been found and the defect removed. The percolation of water in the interior of the chapel, referred to above (to the right of the court), is along the side of the right wall, at the end of the ceiling. It requires no treatment from below. After the diversion of the rainwater from the top of the hill above these caves, if the percolation still continued, the only other remedy will be to extend

the layer of cement carpet on the roof of this cave to the top and sides of the rock adjoining the latter.

Note— The wooden doors with panels of expanded metal ($1/8$ " mesh) which have been inserted to keep out bats and other nest-building birds, show a poor design. Their appearance can be improved by insertion of bands with *chaitya*-windows carved on them.

In the court of cave I, towards the left, the frieze representing 'the old age scene' in the early life of the Buddha, is being damaged by rainwater. The flow of water should be diverted to the middle part of the pier (modern), to the left of the frieze.

Further, another defect of the conservation work, carried out in recent times, should be removed. The steel beam inserted for the support of the loose boulder, immediately above the entrance of the court of cave I has been laid at a wrong angle and is an eye-sore. It should be set right.

(ii) CAVE II. The main rock-beam (architrave) immediately above the columns has a bad crack. For the support of the rock piers have been built, and the crack grouted with cement in recent times. Water percolates in the chapel and the cell to the left of the veranda of this cave. No measure to stop percolation from below should be undertaken until the result of the diversion of the rainwater from the rock-roof of this cave has been seen.

(iii) CAVE V. The columns of the veranda, in front of the entrance of this cave-temple need repair. They should be attended to.

(iv) CAVE VI. The rock-ceilings of this cave, both in the ground floor and the first floor have suffered badly through the percolation of rainwater. After the measures recommended by the Committee regarding the construction of drains and the diversion of rainwater at the top of the hill have been carried out, the cracks should be filled up with cement under pressure (with a grouting machine). In places where cracks are wide enough for insertion of cement-concrete they should be treated accordingly. Portions of rock which have decayed be scraped off and iron beams inserted, and masonry props set up for support. The work should be done in such a manner that it may not offend the eye.

This cave (VI) is still infested with bats. They should be driven out, and all such openings and apertures through which they get in closed by screens of expanded metal ($1/8$ th inch mesh).

(v) CAVE VII. The veranda of this cave leaks, and the boulders above its facade have become loose through the deterioration of rock by climatic conditions. Such measures as underpinning (building of masonry piers), the use of iron clamps for binding together stones, and cement grouting are recommended. The pipe-railing in front of this cave should be replaced by one of R. C. C.

(vi) CAVE IX. This temple is one of the oldest at Ajanta, and as the court in front of it is very narrow, it should be extended towards the valley by at least 9 ft. The extension will require the building up of some masonry piers.

(vii) CAVE X. The original floor of the fore-court of this cave should be exposed by excavation. The fore-court at present is very narrow; it should be extended at least 9 ft. towards the valley. This extension will enable the visitor to get a good view of the facade of the cave which is of considerable height.

Above this cave (X), just below the brow of the hill, the rock has disintegrated badly, and some boulders have become absolutely loose and may fall down any time. Portions of decayed rock and loose boulders should be thrown down in such a manner that the facade of the temple and the parapet wall should not get damaged.

(viii) CAVE XII. This cave has a bad crack in its ceiling. Some piers have been built in recent times for the support of the rock; but two more are needed in the hall: one, where the crack has made an obtuse angle, to the left of the middle column; and another in front of the cell at the extreme end of the left side.

(ix) CAVE XIII. This is perhaps the oldest *vihara* at Ajanta. The cells have benches very neatly cut in the rock. The ceiling of the cave leaks badly during the monsoon. After the measures recommended by the Committee regarding the diversion of rainwater at various points have been carried out, further measures such as covering the rock-roof of the cave with cement-concrete, or grouting the ceiling with cement under pressure with a machine, may be executed.

(x) CAVE XVI-XVII. The veranda of cave XVI leaks during the monsoon. The rock-roofs of both these caves (XVI-XVII) which have paintings, will be covered with a carpet of Gunite: operations to be carried out in the same manner as proposed for the rock-roofs of caves I and II.

(xi). The room between caves XVII and XIX, marked as cave XVIII, has decayed badly by the action of rainwater. The piers already built for the support of the architrave and ceiling are not sufficient. Another should be built where the crack looks ominous and the disintegrated parts of the rock made sound by cement-concrete.

(xii) CAVE XIX. The panel containing the sculptures of the Naga King and Queen with attendant, the beauty of which has been so much admired by art connoisseurs, is being damaged by rainwater. The stone being porous, there is danger of further deterioration. As the building of a R. C. C. *chhajja* for the protection of these sculptures will spoil the view of the facade of this cave, the best plan will be to cover the entire panel, containing the sculptures, with plate glass, $1\frac{1}{4}$ " to $3\frac{3}{8}$ " thick (strong enough for the size of the panel). The plate glass should be enclosed carefully in a steel frame which by means of plugs be fixed to the rock. The steel frame may be given a neutral tint and also a rough surface to match the texture and colour of the adjoining rock. In the pillared room to the right of the court of this cave, some columns had decayed completely and in their place for support square masonry piers were built. The latter may be replaced by R. C. C. pillars; the main design of the original pillars to be followed. There are natural fissures in the rock of this cave (XIX), and some of them run across the beautiful sculptures of the facade. To stop the danger of the widening of these clefts it would be wise to fill them up with cement with a grouting machine. The work should be done neatly and no trace of cement should be left on the sculptures, the cement filled in the crack should be given a neutral tint outwardly to match the colour of the rock.

The rock to the left of the court (Cave XIX) is developing cracks. They should be filled in with cement under pressure with a grouting machine.

(xiii) CAVE XXI-XXIV. The pillars, the rock-floors, the back-walls and the lower parts of the doorways in the verandas of these caves have suffered badly by climatic conditions and the neglect of many centuries. Bases of columns, floors, doorways and back-walls of the verandas should be treated with cement, or cement-concrete, judiciously, and original forms

restored as far as practicable. In the interior of Cave XXI, the wall between the cells on the left side, and the doorways of the cells may be rebuilt in ashlar masonry, as has been done in Cave XII.

(xiv) CAVE XXVI. As by excavation the original fore-court of this cave has been exposed, the retaining wall previously built for the safety of visitors, now standing almost in the middle of the court, looks superfluous. This should be dismantled and another built at the end of the court.

(xv) CAVE XXVII. The sculpture of cave XXVII, particularly the figure of the Buddha in the shrine at the end, towards the left, has already decayed much, but a clever sculptor may save it from complete destruction by insertion of cement in cleavages which are likely to develop further by climatic conditions.

VI

Maintenance of the Caves : Steps, Footpaths, Retaining Walls and Approaches

(i) The cement path should be extended beyond its top-end, right up to the steps which descend near the interior of cave I. A drain will have to be cut at the foot of the hill along the inner side of the footpath, and the side of the hill which has abraded by the action of water to be treated with cement; or where the rock has decayed completely masonry walls may be built.

(ii) The coping of the retaining wall built in front of the courts of the various caves is not uniform. It should be flat stone-coping throughout, and the old round coping wherever it exists should be replaced by one of the former design.

(iii) The rock on the right of the passage between cave-temples III and IV is uneven, and the passage is also narrow there. The rock should be chiselled to widen the passage.

(iv) The rock has decayed, to the right of the passage between caves IV and V. It should be treated with cement, decayed portion to be scraped.

(v) For the convenience of visitors, a pipe-railing (or round wooden railing) may be fixed into the rock along the steps ascending from the ground floor to the first floor of cave VI.

(vi) A Persian wheel (15" diameter) or a Rotary Pump to be installed, one at each of the natural water-cisterns near caves VI and XVI. Potassium Permanganate to be used for the disinfection of water occasionally. Local doctor should be consulted regarding the quantity of Potassium Permanganate to be used for the purpose.

(vii) The passage between caves XIX and XXI has several flights of steps which cause discomfort to visitors, particularly to those who are elderly in age. Piers should be built up from the rock below and iron or R. C. C. girders placed above them to make the base of the passage. The floor of the passage should be done in R. C. C. slabs.

(viii) Steps should be cut into the rock; or built of masonry, with a retaining wall and railing, for the convenience of visitors who want to see cave XXIX, which is inaccessible at present. It is an incomplete *chaitya*, excavated high up in the scarp between caves XXI and XXII. Steps will be built from the right end of cave XXI.

(ix) To approach cave XXVIII from cave XXVII, steps should be constructed by embedding precast R. C. C. steps into the rock. The tread to be 12 inches and height 6 or 7 inches. The width of stairs should be $3\frac{1}{2}$ feet. The outer end of the steps will have a railing of plain design of R. C. C. for the safety and convenience of visitors.

VII

Conservation of Wall - Paintings

Fortunately 90% of this work has already been done by the Italian experts, or by the Mechanics trained by them, and all the important paintings have been cleaned, fixed firmly on the rock-wall, and preserved scientifically against further deterioration. The work which had remained was being done by Mohd. Osman, Mechanic, who unfortunately has been killed in the disturbances. Another Mechanic, Abdur Raziq, who is familiar with the work, and who worked at Ajanta previously, has been appointed in Mohd. Osman's place.

The causes of the ruins of the paintings have been ascertained by experts of world-wide reputation already, and the methods of their scientific treatment fully explained (*vide* Annual Report of the Archaeological Department, 1920-21 A. D., pp. 14-16). Here the decay is not due to salts or moist air, because the paintings in the verandas of caves II and XVII, which have remained exposed to monsoon air and summer sunshine throughout a period of 1,500 years, look as fresh as if they were done only yesterday. The principal causes of decay have been insects generated by the vegetable matter mixed in the clay-plaster *rinzafo* on which the paintings have been executed. Another cause was the percolation of rainwater along the surface of the rock-wall. The third cause of decay was the roosting of bats along the edges of ceilings and walls with paintings thereon. All these destructive agencies have been rooted out and the mechanics have now to treat the paintings according to the methods taught by experts.

This Committee is, however, not unmindful of fresh causes of decay arising in future, and for this reason they have already recommended to the Secretary to Government in the Archaeological Department to send a graduate, specially qualified in Organic Chemistry, to Europe for training in Archaeological Chemistry in general, and the special methods of the preservation of frescoes in particular. For the latter work he should be placed under an expert Italian *restorateur* for at least six months.

VIII

Amenities to Visitors

These may be divided into four classes :-

- (A) Accommodation and Catering.
- (B) Conveyance and Facilities of Travel.

(C) Facilities for seeing the caves and the wall-paintings therein under competent guidance, and in proper artificial light. Access to the published copies of the paintings for purpose of study. Arrangements for the sale of popular literature, such as guide-books, and picture postcards on the spot. Easy access to such points whence the scenic beauty of the hill, the panorama of the valley and the caves, and the view of the waterfall can be best enjoyed.

(D) For the enjoyment of visitors to enhance the beauty of the site by building dams across the river Waghor.

(A) ACCOMMODATION

(a) Taking accommodation first it may be observed that as the majority of visitors will desire to combine their excursion to Ajanta with that of Ellora, the main centre of traffic will be Aurangabad, where a decent hotel already exists, which may easily be extended as the tourist traffic develops. But a large number of visitors coming from North India may like to pass a night at Fardapur, where a Guest House, a Travellers' Bungalow and an Inspection Bungalow are open to visitors of different classes. The Guest House, is exclusively for the use of State guests; but the Travellers' Bungalow is open to all, and Inspection Bungalow also, if it is not occupied by the P. W. D. officers, or the officers of the other Departments of the State, is available to visitors. Accommodation is however required for the large parties of students and teachers who often visit Ajanta during the season (October to March). The Secretary, Archaeological Department, is planning to acquire the Mughal *serai* at Fardapur (Salar Jung estate) for the village school. If this plan is approved by Government it will be possible to accommodate students-parties free in the *serai*.

(b) The Guest House until quite recently was nicely furnished and it had an adequate staff of servants, but during the disturbances the furniture of the House has been destroyed, or stolen. At present it is under the control of the Archaeological and Political Departments, but this arrangement is not satisfactory and the Committee recommends that its catering and general up-keep should be entrusted to the same department which has control over the State Hotel at Aurangabad. The Committee further recommends that only four double rooms should be reserved for the State guests, and the rest may be occupied by visitors on payment of the same charges which they have to pay at the State Hotel, or Greenlands, Hyderabad.

(c) The roof of the Guest House is badly damaged and leaks so much during the rainy season that it becomes impossible for guests to stay in the house. An estimate was prepared for constructing a new roof over the building. This estimate, or another estimate also provided for suitable alterations in the design of the front elevation of the building which is not in keeping with the architectural style of Ajanta. The alterations, in the opinion of this Committee should not be on a large scale so as to involve heavy expenditure, but such changes are necessary :-

(i) All the arches of the building should be converted into post-and-lintel openings - the posts should be in the form of Ajanta, Cave XIX, pillars.

(ii) The facade should have a porch the main feature of which be the *chaitya* window.

(iii) In the depth of the porch, or close to it, small rooms should be built for the Hall-porter and the office of the Guest House.

(iv) The arches of the eastern and western verandas of the building have very small dimensions. Instead of three openings there should be only one rectangular opening with pillar of Ajanta style on each side.

(v) The arched openings of the galleries and the northern veranda of the building should also be altered in a similar manner.

(vi) With the development of tourist traffic, new rooms (single) with bathrooms attached, may be built along the two wings of the building, which may be connected at the

end by a dining room - the present dining room is very far from the kitchen. The open space between the proposed dining room and the main building may be laid out in the form of a palm-court with seats of artistic design; the design should not involve heavy expenditure.

(vii) Store-room and godown (for furniture and similar articles) should be shifted from the main building, and new rooms built either on the back, or along the sides of the kitchen. Some six small houses will have to be built for the menial staff of the Guest House. Land is available for them within the compound of the House.

(d) Water supply for dietetic and sanitation purposes, as well as for the garden, is the most essential requirement. Some years ago the construction of a well on the bank of the Fardapur *nulla* was suggested, and an estimate prepared and subsequently sanctioned by Government. The reason why the proposed well was not constructed is not known. The Committee recommends that a well (18 ft. in diameter) with a gallery in the *nulla**, be constructed on the same site pipe lines laid out to the bath-rooms, kitchen, garden and other adjuncts of the building. This work is most urgent and must be taken in hand at once.

* Note—To yield 50,000 gallons of water per day.

(e) The lighting arrangements of the Guest House are also not satisfactory. An old Kohler four-horse power engine, which originally was purchased for photographing the paintings, is now occasionally used for lighting certain rooms of the Guest House. During the day-time, six fans can also be used with the electric current generated by the engine. Ordinarily kerosene oil lamps are used, but arrangements have further deteriorated since the disturbances, and the visitor is fleeced for the supply of kerosene lights, which comprise one Petromax lantern and six or seven chimneyless lamps, improvised locally by attaching tin bands round the necks of old ink-stands and gum-bottles, and passing cotton wicks through their narrow mouths. The Committee recommends that a 20-horse power diesel engine set, in duplicate, be installed at the Guest House: it will generate enough electricity for about 120 lights and 16 fans, and will also help in pumping out water from the well.

(f) With the idea of improving the general cleanliness of the Guest House the Committee recommends that all the bathrooms should have sanitary fittings. Privy seats should be both in Indian and European styles, because Ajanta as soon as peace conditions prevail will attract a large number of foreigners among its visitors.

(g) With the above object in view the present rough Shahbad flooring of the building, the defects of which are now concealed by *Shatranjis* (cotton durries) and carpets may be replaced by terrazzo flooring. The latter will be economical in the long run, because the expenditure on the purchase of carpets will be reduced.

(h) The problem of catering so far as globe-trotters, or wealthy Indian visitors are concerned will become easy to solve as soon as the Guest House is placed under the management of the Aurangabad State Hotel. For the middle class visitors, the cooks at the Travellers' Bungalow (P W D) will render necessary service. This Committee further recommends the building of a refreshment room and a waiting room in the close vicinity of the caves, at the foot of the hill whence the cement path and the stone steps start. The refreshment room and the waiting room may be designed in the style of the *Nandi* pavilion, the *Das Avatara*, cave XV Ellora. The dimensions of these rooms may be 25 to 30 ft. in length and 12 to 14 ft. in width. Between these two rooms may be another (14 ft. x 14 ft.) for

the sale of guide-books, picture postcards and photographs of the caves and paintings. The waiting room should have a basin for 'wash', and also privies (flush system), both in the Indian and European styles. The Committee also recommends the building of a shed, or open pillared-hall, for the rest of chauffeurs and servants.

(B) CONVEYANCE AND FACILITIES OF TRAVEL

(a) Omnibus Service and Holiday Cars: There are two services daily from Aurangabad to Fardapur and back. The service is under the control of the Railway Department who are maintaining it, and in return getting considerable profit. The cars which run may be considered good enough for the local people, but they are not suitable for visitors, particularly for a long journey. The Railway Department may be asked to arrange for a special service during the cold season—October to March. For this special service comfortable cars, similar to the holiday cars (charabanks) used in Europe may be purchased. The taxi-fares are exorbitant now, there should be some control over them; but private enterprise should not be discouraged; on the other hand it should be encouraged and people induced to resort to this industry, either in their individual capacity, or in the form of joint-stock companies. The main object should be to improve the quality of conveyance, and not to allow making inordinate profits.

(b) Several years before the last war, Messrs. Tata & Co. wanted to build aerodromes in the vicinity of both Ajanta and Ellora for foreign tourists. There was some correspondence between them and the Nizam's Government, but subsequently the Military and Railway Departments of the State developed their own plans and surveyed several sites in the vicinity of Ajanta and Aurangabad. A landing ground has since been built at Chikalthana, six miles off Aurangabad. Mr. Ahmad Mirza, accompanied by the other members of the Committee, walked over all the sites surveyed previously, and examined them from the points of visibility, suitability of the ground, and the course of the wind during the greater part of the year. After examination of various sites we all unanimously recommend that the site to the left of the road, W. N. W. of the Customs Naka, is the best site for building a landing ground for the use of visitors to Ajanta: our reasons being as follows:—

The characteristics of an ideal landing ground are that it should be level like a billiard table, should be sufficiently extensive to admit the present and future length of runways, its visibility should be high, the surface of sub-strata should be hard, amenable to connection with the main road system, and within a reasonable distance of the point it has to serve. With these standards in view, we examined two sites, one at Dhanvat, shown as Site No. 1, and the other, just outside the Delhi Gate of the Ajanta village, shown as Site No. 2 on Plan No. 2.

The site at Dhanvat has several defects. The site is cut up by minor valleys, has thick B. C. soil, is limited in extent and down in a valley not far from the fringe of the hills, and will call for an expensive diversion of Fardapur - Jalgaon Road. The distance from the caves will be about 6 miles. The only advantage we see in it is the availability of water. For the reasons given above this site has been rejected in favour of Site No. 2.

Site No. 2 is right up on the plateau, bordering on the village, close by the main road, about 6 miles from the caves but with a romantic approach to them, is level and has hard soil, and plenty of building material in the neighbourhood. It can accommodate two runways of about 1200 yards each, and, with a pinch, one of them of 1500 yards. Its only defect

is the scarcity of water which would be difficult and expensive to obtain. Subject, of course, to the approval of the Aviation authorities, we recommend this site as the most suitable.

The expenditure on this work may be considerable, but the tourist traffic to Ajanta is likely to develop at a very rapid pace in the near future, and Ajanta will not only be on the itinerary of every globe-trotter, but it will become a place of pilgrimage for all patriotic Indians, being the greatest centre of ancient Indian culture and art.

(c) It is desirable that the road between Aurangabad and Fardapur should be modernised for a cruising speed of 50 miles per hour (except the Ghat portions), and dust-proofed. The standards to be followed shall be those of the Indian Roads Congress.

(C) FACILITIES FOR SEEING THE CAVES AND ENJOYING THE SCENIC BEAUTY
OF THE AJANTA VALLEY

(a) Guides: Some years ago at the recommendation of the Director of Archaeology, Government had sanctioned some scholarships for the training of guides. It appears that the sanction of Government was not fully utilised, and the result is that at present there is no competent guide at Ajanta; at least four guides speaking English, Hindustani and Marathi are required. The Committee recommends the renewal of two scholarships for the training of guides: the period of training to be four months, and the amount of each scholarship Rs. 75/- p. m. The candidates applying for the scholarship should have passed the Matric. Examination, or hold the Diploma of the Central School of Arts and Crafts. They should be of active habits, and interested in art and history in a general way. During our short visit of 4 days in the middle of May, the hottest month of the year, we saw 40 to 50 visitors coming every day and asking for the service of a guide.

(b) The interiors of the caves being dark, sculptures and paintings therein can be seen only with *artificial* light. The present electric set is old and quite worn out. It should be replaced by a 10 K. W. set, so that at least 4 caves be lit up simultaneously.

(c) Some visitors, particularly art-students, would like to study the published copies of the wall-paintings on the spot. The hall of cave XV is very suitable for this purpose; it should be fitted with seats, and copies of paintings exhibited in glass-frames (so that they may not be spoiled by constant touch) along the sides of the hall. This cave is situated almost in the middle, and is quite close to caves XVI and XVII, which contain the best wall-paintings.

(d) Sale of guide-books, picture postcards and photographs of the important paintings and sculptures: The Archaeological Department had published guide-books in English, Urdu and Marathi. They were all beautifully illustrated, and available for sale on the spot until quite recently. Enquires show that they have become out of print. As they are much in demand they should be reprinted as soon as possible. Telugu and Kanarese versions of the guide-books may also be compiled and issued for sale. The Archaeological Department had also published colour and monochrome series of the important views and paintings of Ajanta. The colour series is now out of print. It should be reprinted as soon as possible. In the monochrome series some views representing the scenic beauty of Ajanta, particularly the views of the waterfall, as the stream passes down the various *kunds*, may be included. There is a fund at the disposal of the Archaeological Department for the publication of guide-books and the picture postcards, and no grant from Government is required. It is also desirable that photographs of the important sculptures and paintings may also be kept ready for sale at the caves.

(e) The Committee recommends that in the veranda of each cave there should be a small enamel board (not attached to the wall, but bolted to a movable post) giving the date and the important features of the cave-temple.

(f) The numbers given to the various caves, although appearing mundane to a religious-minded person, have become almost classical, having been used in numerous authoritative books. The present wooden blocks with brass figures thereon, fixed to the rock-wall near the entrance of each cave, however, show bad taste. The numbering may be done in white or black paint on floor, where it will not be so conspicuous.

(g) A footpath was laid out some years ago from cave XVI to the bridge, built across the stream about the same time, with the view of enabling the visitor to enjoy a close view of the waterfall during the rainy season. This footpath is still in good condition, but as it is often washed away at several places during the rainy season, it is desirable that the path should be cemented and drains be built along it for the flow of rainwater, so that there may remain no danger of its being damaged during the monsoon. This footpath should also be connected with cave XXVII by R. C. C. steps embedded along the face of the scarp (and by ramps, if necessary), because the visitors after reaching cave XXVII do not feel inclined to go back to cave XVI in order to approach the bridge by the footpath which starts from there.

(h) A terrace was built close to the waterfall and there was a proposal to build a dam across the stream near the terrace, so that by the storage of water a swimming pool be provided for the use of visitors. Government had made a special grant for the building of the dam, but somehow the grant lapsed and the dam was never built. The Committee recommends that the proposal of the building of the swimming pool should be revived because it will add to the many attractions of Ajanta.

(i) The Waghor descends into the ravine below in seven leaps. The fall of the water is eroding the rock and at the lowest stage a sharp groove has been cut which is affecting the grandeur of the fall. To restore the previous charm of the fall a wall may be built at the ledge of the 6th *kund*, high enough to be at level with the sill of the 5th *kund*.

(j) A footpath was also surveyed from the View Point (*Pipaldari*) to the terrace below near the waterfall. Its construction was stopped owing to certain objections raised by the late Nawab Salar Jung, in whose estate the portion of the hill through which the footpath passes is situated. As the estate will be incorporated in the Diwani shortly, the construction of the footpath should be taken up again, because it touches several points whence admirable views of the caves, the waterfall, and the gorge through which the stream in its downward course passes, may be had. Round pillared-pavilions, in the Ajanta style (see pavilion, right wall, cave XVI) with seats therein may be built at these points. The footpath at present be of *murum* with a pucca drain on the hill side, and steps and retaining walls at places where the climb is precipitous. Along the footpath at one point the hill is in the form of a tower. Here the members of the Committee noticed the foundations of a brick structure, probably Buddhist of an early period, the bricks measuring 17" x 12" x 2½". The building may have been a *stupa*. It will be a nice place to plant a Bodhi tree, the sapling to be brought from Ceylon. The tower-hill is visible from all the caves, and the tree when grown will become an important feature of the place.

(k) The members of the Committee noticed during their visit that trees were being cut on a large scale on the hills bordering the road leading to the cave-temples. This should be stopped, and tree cutting be strictly prohibited up to a distance of 100 ft. on both sides of the road. Boundary stones may be fixed round the area in possession of the Archaeological Department to prevent encroachment in future.

(D) BUILDING A DAM ACROSS THE RIVER WAGHOR

This proposal has emanated several times from eminent authorities, and lovers of the scenic beauty of Ajanta. There is no doubt that a vast sheet of water will add much to the charm of the valley. After studying the problem carefully, we think that whether one anicut high enough, or a series of anicuts of varying heights, should be built for the storage of water may be decided after levels at different points have been taken. This pond will keep the sides of the valley green in all seasons and also fulfil the requirements of the people of the neighbouring villages. During the greater part of the year there is scarcity of water in this locality.

IX

Long-term and Short-term Measures

(a) All measures relating to the improvement of drainage, the water-proofing of the rock-roofs, the repairs to the caves, the repairs to the footpaths, the installation of a new electric set for lighting the caves, the alteration of the facade of the Guest House, and the installation of an electric generating set for the lights, fans, and water-supply pump of the Guest House, to be taken in hand at once, and a lump sum grant of 4 lakhs sanctioned for the work.

(b) The other measures recommended in the report may be carried out gradually, the programme may be spread over five years, and a sum of Rs. 1 lakh per annum earmarked for the work. This provision will not be adequate for the building of the proposed landing ground, for which a separate grant should be made according to the estimate, when it is prepared and submitted.

(c) To expedite the work a Special Sub-Division of PWD be created at Aurangabad. We have mentioned this also in the covering letter. This should be staffed with officers and assistants having interest in this class of work.

X

Entrance-fee from Visitors as a source of Income for the Maintenance of the Caves

Our first reaction was that in view of the great cultural value of these cave-temples, and of the matchless paintings therein, which are the common heritage of the entire world, no entrance-fee should be charged. But on further consideration we are of opinion that a certain amount of restriction to be caused by the entrance-fee may impress the visitor regarding the importance of these monuments, and may also help in keeping out loiterers. We, therefore, recommend that a fee of annas four per head from adults, and annas two from children under twelve years of age, and *bonafide* students may be charged.

Conclusion

In conclusion the Committee once more praises the enlightened policy of Government regarding the preservation and up-keep of these world-famed monuments, and expresses its sense of gratitude for entrusting this national work of supreme importance to it. The Committee also thanks Government for the facilities of travel and hospitality arranged for its members during their visit to Ajanta.

Hyderabad (Deccan.)

Dated, 2nd June 1949.

Ghulam Yazdani	...	Chairman
Mohd. Ahmed Mirza	}	Members
Sajjad Mirza		

Supplementary Note

DURING our visits to Ajanta, 11th to 16th May, 1949, and again on 3rd July, 1949, we had the fore-court of the great *chaitya* (cave X) excavated: our object was to trace the original rock-floor, which we have, since, found some 2 feet lower than the floor of the main hall (nave) of the *chaitya*. Three steps cut into the rock have been discovered, which connect the fore-court of the *chaitya* with its hall. These steps continue downwards from the floor of the fore-court, and apparently descend into the valley, but in the course of excavation the rock adjoining the steps, some 2 feet below the newly discovered floor-level, was found in an advanced stage of decay. We therefore did not think it necessary to continue the operations further down.

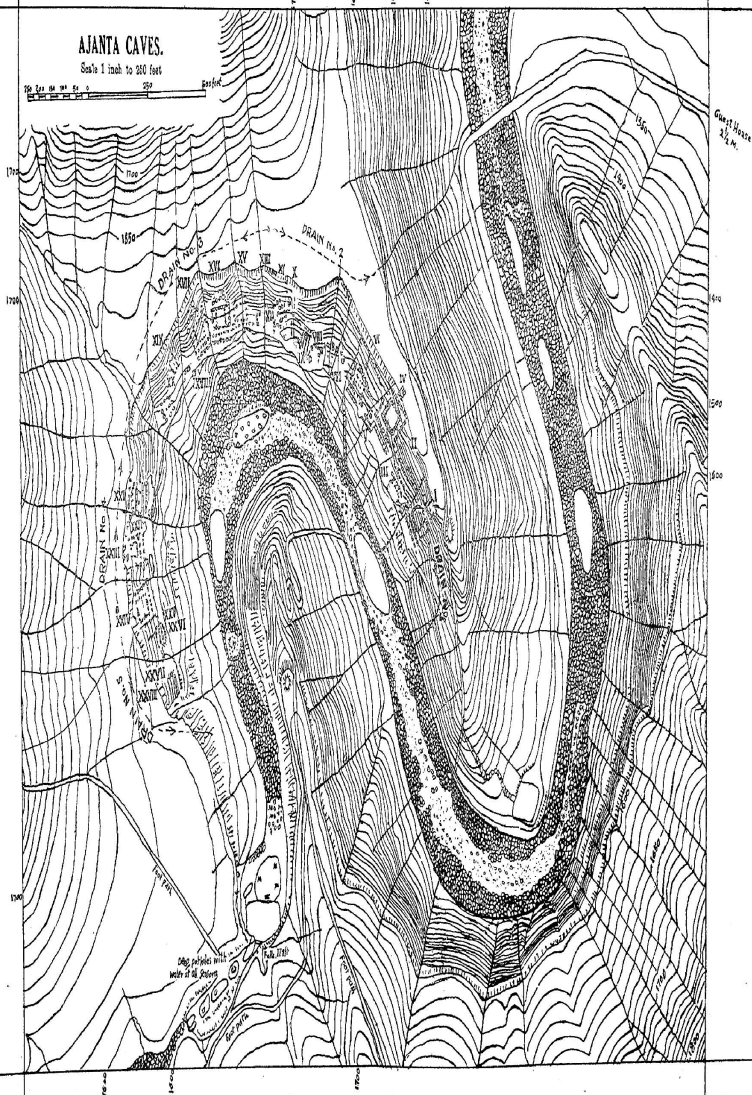
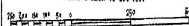
In para vii, Division V (Conservation of Cave-temples) of our Report on the Ajanta Caves, we have recommended the extension of the fore-court of this cave-temple by 9 feet, but as by excavation the original floor of the court has been found some two feet lower than the previous one, stairs which connect the *chaitya* with cave-temple XII will have to be extended. As these are built quite close to the opening of the left aisle of the *chaitya*, their extension at that place will obstruct the front view of the temple. We, therefore, recommend that after the fore-court has been extended new steps should be built from the south-west corner of the court. The steps should be in two series; the first to be built in the westerly direction, and the second, with a landing between the two, in the northerly direction. The latter series should terminate at the landing in front of the cell with the figure of the Buddha, between cave-temples X and XII.

Similarly, the stairs connecting caves IX and X should be rebuilt.

PLAN No. 1

AJANTA CAVES.

Scale 1 inch to 250 feet

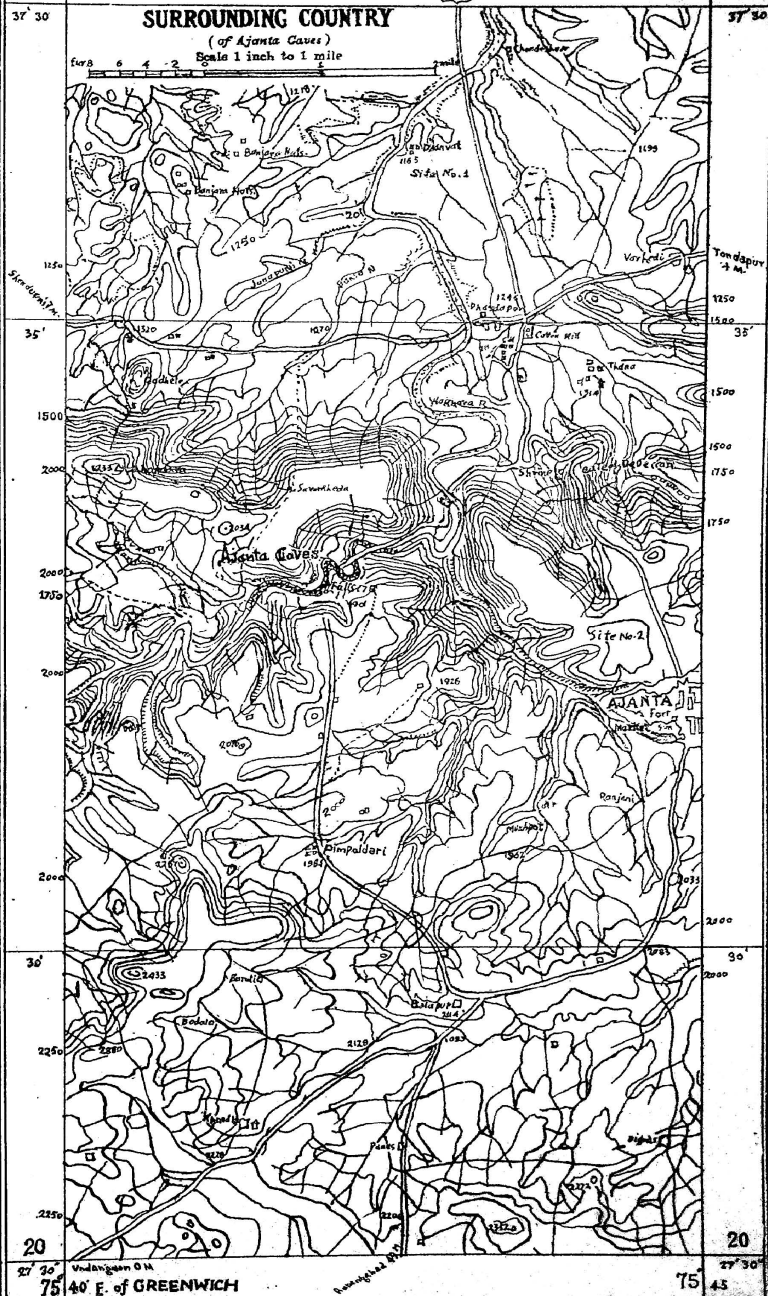
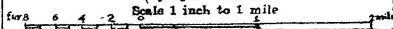


Great House
2 1/2 m.

SURROUNDING COUNTRY

(of Ajanta Caves)

Scale 1 inch to 1 mile



Vindangen OM

75° 40' E. of GREENWICH

75 | 45

