

# Angkor Wat

## AND CULTURAL TIES WITH INDIA

**K.M. Srivastava**



Hidden away in the jungles and unknown to the world until the last century, the monuments of Kampuchea are the mute witnesses of the great rulers of the Khmer Empire who wrought their dreams into magnificent stone temples—marvels of sculpture and decoration. The monuments, with their extent, magnitude and splendour, dwarf and reduce almost to commonplace the much heralded wonders located anywhere in the world. These 'wonders' are no match for the Kampuchean monuments. Amongst these monuments the Angkor Wat particularly reflects on the creative genius and achievements of the Khmers. The temple is endowed with immortal glamour, magnificence and majesty. Besides its meticulous traceries; it has attained through its vastness and symmetry of parts a rare delicacy and refinement.


**The Angkor Wat and Cultural Ties with India** presents a first hand detailed study of the monument by an eminent archaeologist, Shri K. M. Srivastava, who was in 1982 deputed by the Government of India to prepare a project report on its preservation. The study was also to incorporate the causes of the decay of the massive monument through the centuries, and the measures recommended for the repairs.

The book throws a fresh light on the historical background, Indian influence on ancient Kampuchea, the Institution of Kingship, the Cult of Devaraja in Kampuchea, and, of course an altogether new subject, *Apsaras* at Angkor Wat in Indian context.

The Foreword of the book has been written by world-famous art-historian and scholar Dr Kapila Vatsyayan.

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K M SRIVASTAVA



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## Foreword

Amongst the great monuments of the world, Angkor Wat and Angkor Thom are unique examples of the highest achievements of Asian architecture both in conception as also execution.

For centuries this group of monuments has attracted, puzzled and challenged scholars. Much has been written about Kampuchea, ancient and modern. From the Fu-nan empire to the great Khmer kingdom and the building of these monuments is a fascinating history representing the processes of acculturation, autonomy, interaction and distinctiveness. More important is the fact that these monuments are symbols of a pan-Asian cultural ethos which evolved from a common world view, fundamental concepts and principles giving full scope for the development of distinctiveness, regional and local genius.

At the core of the conception was the idea of the sacred mountain, the *Mahameru*; equally important was the view that a temple or a stupa was a cosmos on earth. Angkor Wat, Borobudur along with stupas and temples in India were man's effort to give shape and form through stone and brick to the seminal myth of 'sacred architecture' being the bridge between the earth and the heaven. Angkor Wat and Angkor Thom along with Bakheng etc. are perfect examples of the transference, of the ideational, conceptional and the abstract to the concrete representational.

Understandably such a perfect example has drawn the attention of the scholars from all parts of the world. Ever since these ruins were brought to light in the late 19th century by Henri Mouhot and visited by Pierre Loti, they have been the subject of research and critical appraisal by scholars from many parts of the world, such as Coedes, Dupont, Groslier, Hall and others.

Subject to centuries of neglect these monuments challenged the archaeologists and the scholars. Many archaeological teams have



attempted to restore and reconstruct the monuments. Painstakingly, much that had become fragmentary was again gathered to suggest the whole. This was particularly so in the case of the monuments of Angkor Wat. The efforts of the pioneering French archaeologists Pelliot, Stern helped to conserve these monuments for posterity.

Nevertheless, the monuments fell into a state of renewed decay and neglect, even rampage and plunder in recent history. Armies were stationed in the great quadrangles. Bullet wounds were seen on its walls; the spirit of the monument cried out for help to save and foster the vision of the whole and the spirit of harmony which had motivated their construction.

It was in response to the call of the monument, its fundamental symbolism and the history of friendship between India and Kampuchea that a team was sent from India to evaluate the present state of the monuments and to draw up the feasibility study for its restoration. After an initial reconnaissance tour under Shri Sengupta, Shri K.M. Srivastava led a team of archaeologists, photographers, draftsmen and others. Shri Srivastava is known for his painstaking excavations' skill, especially in fragile and delicate areas such as the excavations of the Buddhist relics of Piprahwa. He brought the same attention and concentrated hard work to the task of drawing up a report for the conservation and restoration of the monuments of Angkor Wat and Angkor Thom.

Despite the fact that the visit of the team was short, judging from the detailed report Shri Srivastava has drawn up, it is clear that the team made the fullest use of their limited time. The publication of such a report will, no doubt, be welcomed by archaeologists and scholars alike. Many specialists as also lay persons have been interested to know the present state of the monuments and their needs for urgent conservation. The present publication constitutes, I believe, an excellent working document for a serious and a systematic programme of archaeological work, both physical and chemical conservation. Appropriately Shri Srivastava has prefaced this plan with a historical survey of Kampuchea, the Khmer empire as also a critical survey of the construction of the monuments, the various phases and different constituents of the complex.

This volume will be a significant addition to the critical appraisal of the monument and should be welcome by the specialists and laymen.

It is also hoped that suggestions made here will be given the most serious consideration, so that an actual programme of work commences at the very earliest. Cultural heritage of the world would be poorer if these monuments are not conserved urgently.

KAPILA VATSYAYAN





## Preface

Subjection to the severe trials of which the much suffering Kampuchean people were a victim during the odious regime of Pol Pot is well-known to the people all around the world. The hateful genocidal regime of Pol Pot was overpowered by the insurgent people of Kampuchea more than seven years ago, bringing to an end the 'darkest period in the history of the country'—as the Western mass media described the tyranny of the Pol Pot-Ieng Sary clique and establishing a new regime under the name of the People's Republic of Kampuchea. Advancing with full confidence on the path of national revival, Kampuchea is healing over the wounds of the past at a rapid pace. With growing support in the world arena, the Kampuchean people are now gradually rehabilitating the ravaged country. Through strenuous efforts, the working people are making persistent efforts to rebuild their homeland literally from ashes.

Although the beginnings made by the people of Kampuchea to reconstruct the country are encouraging enough, they are still confronted with many problems and obstacles in their efforts to stand up again with self-respect as an independent people in the comity of nations. The task before them is still a challenging one; hampered by continuing military conflict on the Thai border and lack of aid and positive approach from the countries of the world, particularly the Western ones.

Besides, being the preceptor of freedom in the entire universe and always conscious of the brotherly relations since ancient times, the Government of India has been observing with great concern, pain and agony the continuous onslaughts on Kampuchea and the untold sufferings to which the people there were subjected to by the barbarous regime of Pol Pot. In July 1980, as a sequel, India took a bold step



by responding to the call of the hour and accorded recognition to the new Government under Heng Samrin, keeping in view the realities of the situation and affirmation of the desires to help in the establishment of peace, stability in the region. In spite of her own problems, India came forward to assist the new regime in every possible manner, in order to revive the age-old ties of close relationship. We stood as brothers since the first century of the Christian era for a brother must stand to extend help in the hour of calamity.

Besides assistance in all other fields, measures were also initiated by the Government of India to preserve the heritage of the country in the form of beautiful monuments; the temple of Angkor Wat being the centre of the greatest attraction. With this end in view the Government deputed a small team in November-December 1980 to assess the damages to the monuments in the country and to submit a rough estimate for repairs. Since the estimated amount was very heavy, the proposal for undertaking the works was submitted to the UNESCO through Shri T.N. Kaul, our permanent representative. He discussed the issue with other member-countries, including the head of the Institution; but could not break ice because the countries represented in the UNESCO were not prepared to recognise the new regime. The present Heng Samrin Government of Kampuchea was not represented in the United Nations and in its place, through the persistent efforts of the United States of America, China, NATO and ASEAN countries, the Government of 'Democratic Kampuchea' of Pol Pot, which since 1982 had been called "Democratic Kampuchean Coalition Government", continued to occupy the seat in the world body.

In such peculiar circumstances Shri T.N. Kaul, now Ambassador in Russia, sent a cable to the then Prime Minister, Smt. Indira Gandhi, appealing her to do something on our own in order to establish a better claim on the project of the preservation of the monuments. The Prime Minister, nourishing great attachment with ancient monuments as a heritage, lost no time in issuing necessary instructions in the matter. On the recommendations of the earlier team, therefore, another team of nine archaeologists was deputed in 1982 to concentrate on the temple of Angkor Wat and submit a detailed project report on preservation including the total expenditure involved. The project report was



furnished in detail to the Government in the same year, which was widely acclaimed by the experts including the late Prime Minister, Smt. Indira Gandhi. All the proposals and recommendations made in the report were readily approved and the Prime Minister anxiously expressed her willingness to undertake the prestigious work of international importance.

Agreement between two countries on political level takes a long time on account of a number of formalities to be observed. Hence, in spite of the readiness of the Government of India to start the works immediately, the final agreement for it continued to hang on till the beginning of the year 1986. Of all the factors which stood in the way of the bilateral agreement, the financial aspect was supreme. The financial economy of Kampuchea had already been shattered by the continuous war-like conditions. On the other hand, it was not possible for the UNESCO to undertake the preservation works because People's Republic of Kampuchea continued to be unrecognised by the countries represented in the world body. Several agencies, therefore, made an attempt to earn the credit of repairing Angkor Wat. A few representatives from Australia decided to establish a non-governmental agency, which could play a host to all the experts in the work, besides meeting the expenditure on repairs. The opinion of the Government of India was also sought in the matter with an assurance that the entire work would be based on the project report prepared by the Indian team of archaeologists. In reply the Archaeological Survey of India conveyed its willingness to accept the proposal subject to the condition that the Survey would play the dominating role. The proposal of a non-governmental agency, however, did not materialise. In the meantime there were further developments when some European countries wished to participate in the work in collaboration with India. The Government of Kampuchea had no objection to the proposal, but the Government of India did not accede to the request. Always anxious to undertake the work, all alone at any cost, the Government of India was never interested in any type of collaboration. At long last, the circumstances compelled the other countries to withdraw themselves leaving the Government of India a free hand to enter into an agreement.



All these years the 1982-project report was kept as a secret document by the Government of India in order to maintain its authority over the works. Hence it was not published. When the clouds standing in the way of the agreement were cleared, the Director General of the Archaeological Survey of India came forward with a fresh proposal of a short visit by a small team to make an upto-date assessment of the work to be undertaken. The team comprised Dr. M.S. Nagarajarao, Director General, Sarvashri K.P. Gupta, S. Subbaraman, Balbir Singh and R.K. Sehgal. The team stayed at Siem Reap for just about five days in April 1986 to study the monument of Angkor Wat and within such a short time a fresh report, accompanied with estimates, was submitted to the Government! Since the abstracts of expenditure furnished in the report prepared in 1982 were all based on regular estimates with actual measurements, the excuse of non-availability of detailed estimates had no ground. Anyway, the pattern of the fresh report, prepared in 1986, was changed. Though the report furnished in 1982 constituted the basis for the new report, the Director General shied away from giving me any acknowledgement.

Having been superceded by a new report, the earlier one ceases to be a secret document. In place of allowing this earlier report to vanish in the locked chambers of the official cupboard and ultimately the dust-bin, it was considered more appropriate to print it for the information and guidance of future scholars interested in the field. After all, the document contains a first-hand detailed study of each and every part of the monument from the standpoint of preservation. A period of four months was devoted to the study which made it possible for me to compile the detailed report.

The printing of the report has another end in view. After its publication it would be possible to judge the rationale behind the preparation of another report after a stay for not more than a week at the site in 1986 and particularly so when the earlier report, without anything new, was to form the nucleus of the fresh assessment.

Preservation of monuments is, of course, the primary job of the Archaeological Survey of India, but the archaeologists and historians in general do not evince much interest in it. To make it interesting, therefore, it was considered essential to increase the volume of the report by



adding a few more chapters, besides furnishing more information on the historical background. Now, the scholars need not have any complaint of getting lost in the intricacies of conservation problems.

#### CORRIGENDUM

The Archaeological Survey of India has earned laurels in the field of conservation in foreign countries, particularly at Bamiyan in Afghanistan. Though I headed the conservation-team to Kampuchea, I cannot help if the authorities have ignored my claim to participate in the prestigious work. But I wish that the image of the country, particularly the Archaeological Survey of India, is not tarnished. The Angkor-Wat-job. . .

state with interest at the standards maintained by the Archaeological Survey of India. My apprehensions of the new team leader are not without ground. He has not had an opportunity to study the monument and its problems in detail. He visited Kampuchea for the first time and stayed at Siem Reap for not more than a week, which is too inadequate to comprehend the problems of conservation at Angkor Wat. Further, the norms and high standards in the field of conservation that have helped the Archaeological Survey of India in carving a niche in the world annals, have been completely ignored in recent works and cries of vehement criticism have been raised against them. I, therefore, once again reiterate my ambition to see that the Archaeological Survey of India continues to hold its head high all around the world. The privilege of undertaking the intricate job of preserving Angkor Wat, a monument of international importance, should be a source of more medals and recognition for the Archaeological Survey of India rather than undermining its established reputation. In addition, I would also be looking forward to a good publication incorporating the measures adopted in giving a new life to the monument and the degree of success achieved. The publication will be a very good guide for those interested in conservation.

I consider it to be the most appropriate occasion to express my grateful thanks to Dr. (Mrs.) D. Mitra, former Director General of the Archaeological Survey of India, for having proposed my name as the leader of the nine-member team in 1982 to prepare the project report



on the preservation of Angkor Wat. She deserves all credit for standing firm on her decision inspite of strong opposition by the higher authorities. I came to know of the proposal only when the officials expressed a desire to interview me before acceding to the decision of Mrs. D. Mitra. They would probably not have yielded to the proposal if my case had not been supported by Dr. (Mrs.) Kapila Vatsyayan, who was Joint Secretary in the Ministry. She supported me by pleading that I had established a great name in the Buddhist world on account of my work leading to the discovery of the lost town of Kapilavastu. I shall always remain indebted to her for the outright support; besides readily acceding to my request to write the Foreword for my book. I am also beholden to all members of the team who always stood by my side in the study of the monument. Sarvashri S. Subbaraman, C.S. Jayaramasundram, V. Ramasubrahmanyam and R.K. Datta Gupta deserve all appreciation for their special assistance in preparing the final report—Shri Subbaraman by way of compiling the report on Chemical preservation, Sarvashri Jayaramasundram and Ramasubrahmanyam for preparing in detail the estimates on chemical and structural preservation respectively, and Shri Datta Gupta, Photo Officer, for taking excellent photographs.

I must express my personal gratitude to Shri Indramohan Sharma, who took all pains in bringing out an impressive publication within a very limited time.

I would be failing in my duties if I do not acknowledge the inspiration I received from my wife Smt. Shanta Srivastava who managed the household affairs all alone during my absence to Kampuchea for a long time.

January 1, 1987

K.M. SRIVASTAVA

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## Preamble

A team comprising three members led by Shri R. Sengupta, Director (Conservation), was deputed by the Archaeological Survey of India in November 1980 to undertake a general Survey of the monuments in and around Angkor in Kampuchea as a prelude to suggest measures on conservation. The time at the disposal of the team was very short. After a rapid survey, therefore, a proposal was placed before the Government of India to send a team of nine members from the Archaeological Survey of India to undertake a detailed study of the Angkor Wat temple, the biggest in the world, for preparing a comprehensive project report on the measures of conservation. The detailed assessment was essential to frame necessary estimates for preservation and also gauge the time which will be required to execute the works. The team of nine members was to be led by an Archaeologist. Of the other members, three were to be drawn from the Conservation Branch, three Chemistry and one each from the Photo and Drawing Sections. The team was to stay in Kampuchea for a period of six months. In addition to the team of nine members from the Archaeological Survey of India, it was suggested that another team of three hydraulic engineers from the Central Water Commission may be sent for three months to regulate the flow of water in the canals, moats around the monuments and other channels, which happened to be the main source of irrigation for rice production. They were all silted up and choked. It was also believed that the silting and choking led to the spread of flood waters all around the monument every year weakening thereby its foundations. The expenditure on account of both the teams was to be





MAP OF KAMPUCHEA

borne by the ITEC of the Ministry of External Affairs. Both the proposals were accepted by the Government.

The team of the Archaeological Survey of India, which was led by the author, left New Delhi for Phnom Penh on 23rd February 1982 and reached there on the 25th February after a night's stay at Hanoi.

In the afternoon of 25th February the team was taken by the local officials for sight-seeing in the city of Phnom Penh itself. On the 26th a meeting with the officials of the Department of Conservation was arranged in their office by the Director of Conservation, Mr. Pen Yeth. While welcoming the team warmly, the officials expressed their desire to know the exact nature of the work the team was going to undertake during the course of its visit to Angkor. The main aim of the team to study the temple of Angkor Wat in order to prepare a project report on conservation was made clear to them. After the meeting was over, the team members visited the National Museum of Kampuchea located in the adjoining building. Influence of both Hinduism and Buddhism could very easily be discerned from the rich antiquities displayed in the Museum. In the afternoon the team visited the Royal Palace, which can easily be called a treasure house.

The next day i.e. 27th February the team was taken to the place of mass graves as well as the school which was converted into a concentration camp known as Toul Sleng Extermination Camp. The team members were all completely shaken by the excruciating ways of torture to which the prisoners were subjected to by the tyrannical and inhuman Pol Pot regime.

A meeting with the Honourable Minister of Culture, Comrade Chheng Phon was fixed up for the afternoon of 1st March 1982 to discuss the details of the work the team was expected to do. During the course of the meeting the arrangements to be made by the Government of Kampuchea were also to be discussed. The meeting was held in the Ministry at 2.30 P.M. The Honourable Minister, while expressing gratitude to the Government of India also impressed upon the team members the financial difficulties under which the Government was reeling. On enquiry by the Honourable Minister the author explained the aim of preparing a project report on the conservation of Angkor Wat temple. Two laboratories, one chemical and the other



photographic, were also to be established by the team. The materials and equipments for the two laboratories despatched from India on the recommendation of the earlier team were already with them. Since the expenditure involved in making all arrangements for the team at Siem Reap was heavy enough the minister wanted to place the financial requirements before the Planning Minister for obtaining his approval.

A meeting was, therefore, arranged with the Honourable Minister of Planning, Comrade Chea Soth, next morning i.e. 2nd March 1982 at 8.00 A.M. in the Ministry. The Honourable Minister of Planning happened to be the Vice Premier of the country as well. The meeting was attended by all the officials of the Department of Conservation, Honourable Minister of Culture and Shri J.R. Sachdeva, incharge of the Embassy of India. The Honourable Minister of Planning conveyed his feelings of indebtedness to the hands of friendship and brotherhood extended by the Government of India for the reconstruction of the country. He brought home to the members of the team the tight security measures, which were to be made for the team at Siem Reap during the course of the work. Though the financial burden involved was very heavy, he willingly conveyed his sanction for the expenditure. The Honourable Minister expressed the feelings that the country had no expertise and as such his Government was thankful for the conservation and restoration works being undertaken by a friendly country like India. The author and Shri Sachdeva extended their grateful thanks to the Honourable Minister.

Though the clearance for financial requirements was given on the 2nd March itself, the members of the team and the officials of the local Department of Conservation could leave for Siem Reap only on 8th March. The Honourable Vice Minister of Culture accompanied the party. The team reached Siem Reap within thirtyfive minutes after flying over the Angkor Wat temple. A few snaps of the temple were taken by Shri R.K. Datta Gupta, photo officer of the team, from the aircraft.

A warm reception was accorded to the team by the members of the Provincial Revolutionary Committee at Siem Reap. After a brief ceremony all the members, who had come in the aircraft, were taken



to the Grand Hotel, where arrangements for the stay of the team had been made.

All the members of the Indian team and the officials of the Department of Conservation were invited for lunch in the same hotel by the Honourable Vice Minister of Culture. The Honourable Vice Minister and the Director of Conservation went back to Phnom Penh the same afternoon by the same plane. The rest of the officials of the Department of Conservation stayed back at Siem Reap to assist the Indian team in preparing the Project Report. In the evening the team members were again treated as guest for dinner.

Before embarking on the actual work of preparing the Project Report on the temple of Angkor Wat, the officials of the Department of Conservation took the team round the monuments located in and around Angkor. During these excursions the beginning of Khmer art in bricks with door jambs of stone could easily be distinguished. In the later stages the Khmer kings switched over completely to stone.

The actual work of the assessment of damages to the temple of Angkor Wat and the measures required for preservation was commenced in the afternoon of 12th March 1982. The works of structural and chemical preservation were shared by the members of the respective branches S/S M.M. Kanade, Balbir Singh and V. Ramasubramanian; and S. Subbaraman, C.S. Jayaramsundram and S.K. Singh. Shri R.K. Datta Gupta undertook the work of documentation and Shri A.T.P. Ponnuswamy took the pains of preparing drawing for the conservation works to be attended to at the temple.

In the afternoon of 23rd March a civic reception to the team was arranged by the Chief Monk of the country, who happened to be a member of Parliament as well. During the course of reception the Chief Monk and the President of the Provincial Revolutionary Committee expressed their feelings of appreciation on the brotherly attitude of the Government of India. The Honourable Secretary of the Committee, Mr. Chan Seng, spelt out the country's indebtedness to the Honourable Prime Minister of India, Mrs. Indira Gandhi, for her generous help in restoration of Angkor Wat temple. The author was also asked to speak on his work of discovery of Kapilavastu. In the lecture, besides speaking on the work leading to the discovery, emphasis



was laid on universal brotherhood preached by Buddha. The sentiments of universal brotherhood received great applause from the members of the Committee.

The team felt grateful to the Secretary of the Provincial Revolutionary Committee, who was always very conscious of the facilities to the team. He hosted a dinner to the team twice, once on the eve of New Year's Day falling on 13th April and the other on 17th April, the National Day. The dinner on the National Day was accompanied by the characteristic Kampuchean dance to the tune of music by various instruments.

The team completed its work at Angkor Wat on the 5th May and thereafter a general assessment of the temple of Bayon was made within fifteen days. During this period the Secretary of the Provincial Committee arranged a trip to Banteay Srei, one of the most beautiful monuments about twenty five kilometers away from Siem Reap, on 14th May. The charming monument standing in a desolate area and depicting scenes related to the triads of Hinduism and also those from Ramayana was built in pink sandstone by Rajendravarman in 968 A.D.

A befitting, heart-rending and touching send off was given to the team at the airport by the local officials including those from the Department of Conservation after a lunch in the Grand Hotel. A deep and affectionate impact was left behind by the team on the local officials. In view of the earlier programme of the team to leave on the 21st May itself, a farewell dinner was arranged in the evening of 20th May in the office of the Conservation Department at Angkor. The team reached back Phnom Penh in the evening of 23rd May.

Shri V.G. Ghanekar was the only hydraulic engineer from the Central Water Commission who visited Siem Reap on the 14th April and left on the 19th after studying the dam, canals and reservoirs.

Mr. Pich Keo, Curator of the Angkor monuments took great care of the team at every step and was always prepared to extend any help whenever required. Mrs. Pich Keo, (Thalang Sokhan), who happened to be trained in nursing, was always very punctual in administering the injections to the indisposed members of the team on the recommendation of the local doctor. The other members of the

Department of Conservation also helped and assisted the team in one way or the other.

The drive and enthusiasm of the Director, Mr. Pen Yeth deserve all appreciation, but before the team completed its work he was transferred to the Department of Sports. The capabilities of the great man could be judged when the team observed on return to Phnom Penh the dead department of sports brought back to life within a very short time.

The members of the team stayed at Phnom Penh till the 16th June to establish two laboratories referred to above. During this period the officials of both the Branches were imparted practical training as well. The estimates for the preservation of the Angkor Wat temple were also processed under various categories of work. The team left Phnom Penh on the 17th June and after staying at Bangkok for three days to study the antiquities in the National Museum finally reached New Delhi on 21st June 1982.

The team is indebted to all the officials of the Government of Kampuchea as well as those in the Indian Embassy at Phnom Penh for their contribution to the success of the Project. The team is beholden to Geological Survey of India, Hyderabad and Indian Institute of Technology, Madras, who took pains to examine the sandstone material and soil used in the construction of the temple of Angkor Wat.



## Kampuchea—The Country

**K**AMPUCHEA (Cambodia), between 103.10° and 106.55° E and 10.05° and 14.10°N, is a very fertile country about 1,12,000 square kilometres in size and about five million people live within its boundaries. Mekong river is the greatest source of life to modern Kampuchea in the same manner as the great Nile is to Egypt. As a matter of fact the valley of the Mekong covers the entire country but for the three provinces of Kampot on the west and Svay Rieng and Thbong Khmum on the east. The last two provinces are watered by the two branches of the river Vaicos, connected to the Mekong across the extensive marshy plains by a large number of canals, both natural and artificial, which can be treated as tributaries creating a common Delta in Indo-China.

Against the background of cultural impact of India it has often been suggested that the name of the river Mekong is derived from Ma-Ganga, the mother Ganges. Mekong is believed to be compound of two words, the indigenous one being *me*, meaning chief or mother, and *kong*, derived from Sanskrit Ganga. Whatever may be at the root of the name, it is a well established fact that river Mekong played the same important role in the history of Kampuchea as Ganges in the early history of Northern India. The banks of the river Mekong are suitable for habitation and the regular annual floods in it render the land very fertile. The area beyond the reach of innundations is practically an arid desert.

The old beds of the river Mekong have now turned into large marshy depressions which run parallel to it. These depressions taken together double the span of the river-bed at the point below the rapid

of Prah Patang, where the river enters Kampuchea. Covering the country by its ramifications the river is joined, near the capital Phnom Penh, to the great lake of Tonle Sap, about 100 kilometres to the northwest by an extensive sheet of water, studded by many islands. Mekong is divided into two streams from the point of its junction with the lake. Both the streams are interconnected by numerous cross canals, which create several islands in the intervening region. Both the streams finally fall into the China Sea forming rich delta of Cochin-China.

The great Mekong river is an important means of communication as well, because at places it is four kilometers wide and deep enough to bring ships upto Phnom Penh, the capital of the country. In addition, it is a valuable source of fish—one of the most prolific in the world.

It is always summer in Kampuchea, with the coolest days in January and the hottest in April. The range of temperature round the year varies between 20° and 38° Celsius. There is a rainy season from May or June to October. The heaviest rainfall is in the month of September. The average rainfall around Angkor during the three years preceding 1982 was 1299 mm, the heaviest being in 1981 reaching upto 1653 mm.

In the month of June every year when the snow on the Tibetan mountains melt and the waters rush down the hill streams, the Mekong along with its tributaries rapidly rise and cut through their steep banks. A vast sheet of water, submerging beneath it the lakes, the marshes and the plains, can be observed at that time. The water recedes only in the month of October when the ground becomes dry enough for cultivation.

The extensive area of 'Lowland' flooded every year by the Mekong river and the Tonle Sap, Kampuchea's great lake, is practically the whole of the inhabited area of Kampuchea. The Tonle Sap has a remarkable feature which has played a great part in Kampuchea's history. It was once, in the geological past, an arm of the sea. Later on, when the delta silted up, the sea's tidal waters were no longer able to flow into the lake. But, every year the flood waters of the Mekong river back up into the lake during the monsoon season. When the wet



season ends the accumulated water in the Tonle Sap begins to flow out towards the distant sea once more; the time (usually in November) when the river appears to reverse itself, a famous festival known as *La Fete des Eaux* is celebrated. It is a celebration of harvest and fertility, of great high spirits among the whole population, the time of the Vassa, when the monks and the bonzes come back from their annual retreat. And a wonderful time too for the visitor to share the excitement.

It is in fact in the 'Lowlands', more so in its southern part that the earliest habitation and political and cultural development in Kampuchea can be traced. Discovery of archaeological ruins in this region establishes that the modern settlements corresponded closely to those in ancient times. In the northern part, it appears however that the modern occupations have extended a little beyond the old. In the case of the region to the south (e.g. the province of Ba Phnom), on the other hand, the situation is just the reverse. It is apparent on the basis of ancient remains that the earliest Hindu adventurer from India selected the region, where the conditions of livelihood were the most favourable. A large number of simple brick monuments observed in this region were erected by the earliest settlers prior to sixth century A.D. They furnish a tangible evidence to believe that the lower valley of the Prek Tonot, i.e. the district of Bati and Prei Krebas and a part of the district of Treang, was densely populated in ancient times. Modern temples, in most of the cases, stand over and cover the temples raised in ancient times and many of the mounds, overgrown with vegetation, rising above the rice fields in the valley of the Prek Tenot, contain the ruins of the ancient temples.

Unlike north, the occupied area in south of Phnom Penh is not strictly confined to the banks of the river. The people in that area are sporadically spread here and there bringing under occupation high lands fit for cultivation, wherever available. Abounding in palm-trees, the area presents an appearance of a vast palm-forest dotted by marshes or rice fields when viewed from the pinnacle of a high temple.

The region to the north and west of the 'Lowlands', beyond the reach of the floods, may be designated as 'Highland', though the mean height above the sea level is not more than three metres. It spreads



upto the Dangrek mountains in the north and the hill ranges of Phnom Kravanh and Sang Re to the west. The muddy depressions, a prominent feature of the low lying grounds of this region, are covered with high thick grass, whereas the higher area is an arid forest without any limit. Dense forest of a tropical climate with tall beautiful trees having rich and varied flora and bushy soil is scarce and far to seek. A large part of the area is covered by a reddish gravel stone, almost completely bereft of grass and moss, interspersed by extensive bare sandstone rocks which for days together present a monotonous sight to the eyes of a wearied traveller. Though the rivers in this area are full of water during the rainy season, they are completely dry in the greater part of the year. The whole of this region is now deserted and uncultivated, where a visitor will fail to notice the least sign of human beings even after his travel for several days. It is inhabited only by the deers, buffaloes and other wild beasts, who traverse these arid fields freely. With a miserable existence a few hamlets only can be observed at the foot of the hills close to the springs, where the descendants of the primitive wild tribes still survive with a meagre sustenance. Though at present a death-like solitude reigns supreme in the area, it was once upon a time studded with stately buildings of the mighty Khmer Empire and Civilization. It is this very area which covered in its southern part the whole of the Angkor region, where the Hindu-influenced Kambuja civilization reached the highest altitude of development and reared magnificent temples and big populous cities with strongly fortified walls and gates, grand palaces, tanks, parks and other secular structures of all kinds. Human intelligence and ingenuity converted this region into a flourishing centre of civilization by building roads, canals, tanks, bridges and dams. In fact, the Khmer system of irrigation was one of the most advanced in the ancient world. Parts still function today, watering the rice fields in and around Angkor. Srah Sang and Eastern and Western Barays connected with canals are some of the best examples. Eastern Baray is now completely dry. It is said that so long as the streams of Hindu adventurists continued to flow and infuse energy and vigour into the population, the region continued to flourish. No sooner the source dried up, the enthusiasm of the people reverted back to old lethargy. Nature gained an upper hand and the



region once again relapsed to its old primeaval condition. Monumental temples and ruins of mighty cities and palaces, however, survived the hands of the destructive forces of nature and continue to speak about the glory of the bygone age.

The ancestors of the Khmers, who still constitute the predominant element of the people of Kampuchea, were the earliest inhabitants of the land. Khmer is not only a modern name. It was used in ancient times as well, both by the local people and the foreigners. In addition to Khmer, the name of Kambuja was also popular amongst the people. The background of the latter name has been furnished in the following pages. In the old inscriptions of Champa (Annam) the name Khmer finds a mention as Kvir or Kmir, whereas the Arabs use the term Comar in their annals. Though the identity of Comar with Khmer has been well established now, it was a source of great confusion to early writers. They mistook the word for Cape Comorin and very often tried to identify it with Kamarupa.

Of course, there is no direct evidence to declare it firmly, the country in all likelihood appears to have been originally inhabited by savage hill tribes, who were captured by the Khmers and forced to withdraw to the hills and jungles. Besides the Khmers, the Mons, who happened to be the inhabitants of Burma, constituted the principal elements in the land of Kambuja to absorb some of the distinguishing features of the adventurers from India in the beginning of the Christian era.

The Kampuchean economy is basically agricultural with extensive exploitation of fisheries and forestry. Rice is the major product. Vegetables and fruits are also grown in a considerable quantity. Rubber, pepper, sugar, maize, soya, tobacco, coffee and cotton are the other staple crops. Trees of many varieties abound in the country's vast forests. It is said that fishing the great lake used to yield about 100,000 tons of fish every year, providing a basic part of the Kampuchean diet.

Kampuchea is a great country for the naturalist. In the chronicles of Chou Ta Kuan, written in 1295 A.D., there are accounts of many wild animals, although the lion, often used as a heraldic device in Angkor and elsewhere, has never been seen there. Chou also



described the wealth of fish in the Tonle Sap, where shrimp which weighed a pound or more were used as bait. According to his statement there are crocodiles as large as boats, which have four feet and are exactly like a dragon, but have no horns; their belly is very delicious. There is a great variety of wild life in Kampuchea today. Big games include elephant, rhinoceros, wild oxen and buffalo, tigers, panthers, leopards and bears. Birds are found in profusion; even around Phnom Penh herons, cranes, grouse, pheasants, wild duck, pelicans, cormorants and egrets can be observed. There is a great variety of butterflies as well, besides the most wonderful orchids. Few countries offer more to the naturalist and a photographer than Kampuchea.

Kampuchea possesses a great wealth of historical monuments spread over its territory. The most important concentration of these is located in the northwest, with the famous group at Angkor, the monuments of Phnom Kulen, Kohker, Sambor, Prei, Kak, Preah Khan, Kampong Svay and some isolated monuments—the most well known being Banteay Srei, Bong Mealea, Preah Vihear and Banteay Chmar. In the southern and central areas one can also mention Wat Nokor, Ta Prohm de Bati and Phnom Chisor.

The National Museum of Kampuchea located at Phnom Penh, the capital, houses some of the most attractive sculptures and bronzes, a few brought from Angkor for security reasons. The chief attraction is perhaps the pre-Angkorean statue of Harihara, found at Prasat Andat near Kompong Thom, though of course, the Museum is full of masterpieces and a visit is the natural complement to stay at Angkor. The Palace Museum at Phnom Penh, where entry is rather restricted, can easily be designated as the treasure house. It houses principally the gifts which were received by the monarchs of Kampuchea in earlier days. The Museum at Siem Reap is also very rich in antiquities.

Learning or reading about Angkor in Kampuchea kindles the fire of aspiration to visit and actually see one of the richest heritage of the world. Angkor as a fabulous royal capital, a complex of cities and temples, lost for centuries in the dim, green light of the jungle, until a hundred and two and a half decades ago, when the tall towers of



Angkor Wat temple were observed by a French botanist during the course of his wanderings.

Angkor is about five kilometres from a small but brisk town of Siem Reap, a provincial capital of Kampuchea. The town is named after the river of the same name which flows by the side of Angkor and through the township. In ancient times the river was exploited by the Khmer kings for the purpose of irrigation. It joins the great lake Tonle Sap. The flood waters of the Mekong which back up and swell the great lake during the monsoon season, however, do not affect the Siem Reap river.

Kampuchea was a modern, advanced, forward looking country with fast developing industries, excellent communications, first rate hotels and touring facilities. But, the holocaust in the country during the last decade has crippled the economy completely. Now, the same is to be reconstructed from the grass roots. The author could visualize the gruesome picture when he along with other team members visited Toul Sleng prison, which has now been converted into a Museum exhibiting Pol Pot atrocities reducing the country to this dismal state. A large number of mass graves have also been exhumed in the country near Phnom Penh and the fear psychosis of the Pol Pot massacre still looms large in the mind of the Kampuchean people.

## Historical Background

SETTING a singular example in world history, the Khmer Empire, or so to say the history of Kampuchea, had a strange sequence of quick rise and fall prosperity and chaos followed by the rapid changes in the dynasty and religious faith of the kings, almost at every tidal wave. Greatly influenced by the Indian culture, the history of Kampuchea had a very early beginning and though there were more than thirty rulers in quick succession, three of them amongst a dozen, who ruled at Angkor, occupy an outstanding position. They were Yashovarman I (889-900 A.D.), Suryavarman II (1113-1150 A.D.), and Jayavarman VII (1181-1219 A.D.), devoted respectively to Siva, Vishnu and Buddha. The respective faith was not as much for devotion as it was in the name of deriving divinely power of a king bestowed by the gods. All the three emperors noted above concentrated their building activity at Angkor, the exact meaning of the word in Sanskrit being 'city' from the word Nokor. Angkor was sacked by the Thais in 1431 A.D. forcing the Khmers to abandon it finally. The monuments were thereafter left to the care of the nature, an account of which has been dramatically presented by Malcolm Mac Donald in a single sentence. "The man-borne woods of Dunsinane did not advance more rapidly inexorably on Macbeth than the jungle of Cambodia marched on Angkor."<sup>1</sup> But for occasional references to Angkor ruins, the monuments and the great civilization they represented were completely lost to the world. It was only in 1860 that the ancient ruins were once again brought to light by a wandering botanist of France, Henri Mohout, who noticed the grey towers of Angkor



Wat through the gaps in the foliage. He was commissioned by the London Geographical Society to explore the low reaches of Menam and Mekong rivers. In the dramatic words of Mac Donald again, "Coming upon Angkor amid rustic and jungled Cambodia—the Cambodia of a century ago—was like being suddenly transported from barbarism to civilization, from profound darkness to light".<sup>2</sup> The monuments were rediscovered by the diary of Henri Mohout, which was published posthumously in 1864. Catching the first glimpse of the mighty towers of Angkor Wat, reaching out to the clouds he has recorded, "At the sight of this temple, the mind feels crushed, the imagination staggered, one can gaze admiringly and in respected silence, for where, indeed, are words to be found to praise a marvel of architecture that has perhaps never been equated in the whole world."

Ankor, as already stated, was in a large measure a product of Indian influence on the indigenous society. The melting of the local society with the foreign Indian culture led to the development of a distinctive Khmer art much earlier than the first monuments at Angkor. At the same time it is a well known fact that Cambodia (Kampuchea) was plotted on the ancient map, representing one of the richest heritage of the world, by the group of monuments at Angkor only. Angkor covered an area of 120 square kilometres between Phnom Kulen and the great lake Tonle Sap, where a series of capital were established by more than a dozen kings between ninth and thirteenth centuries. The entire area was well watered by a network of irrigation canals and reservoirs, which by mastering the vagaries of monsoons helped the citizens grow plenty of rice.

According to the earliest written records of the great civilization of Kampuchea found in a Chinese dynastic history of the third century A.D. the foundations of the history of Khmer empire or Kambujadesa or Cambodia were associated with and laid in the small kingdom of Fu-nan. Exact location of and the area covered by Fu-nan are rather difficult to pronounce. Based on the references made to it, the kingdom of Fu-nan is supposed to cover the lower valley of river Mekong corresponding roughly to Cambodia with a little more added to it. Regarding the capital of the kingdom Coedes is of the view that it was at



Vyadhapura at the foot of the mountain Ba Phnom, which has been accepted by the scholars in general.<sup>3</sup> According to the Chinese account the inhabitants of Fu-nan were in a primitive and undeveloped state of culture. The account further records that they went about naked and were fond of tattoo marks on their body, though the statement cannot be said to be free from exaggeration. Huen-bien (Kaundinya), a brahman from India, reached the place and defeated the local monarch, a lady named as Lieu-ye. The legend has been recorded in the following pages in Chapter 4. Signs of any civilization appeared in the land only after Kaundinya became king and held control. Women started wearing clothes only thereafter.<sup>4</sup> There is no direct reference to the date of the event, but an assessment of other events following it leads to the date of first century A.D.

The earliest history of Fu-nan is chequered and engulfed more or less in darkness. For the purpose of chronology the reign of Fan Chan, a general, who seized power from the direct descendant is considered to be the first fixed point. He sent an envoy to China in 243 A.D. Impressed by the account of the laws, manners, customs and immense wealth of the country furnished by Kiasing-li, an inhabitant of T'an-Yang (western part of India), who visited the place for the purpose of trade, the king sent Su-Wu as an ambassador to India to establish political relationship.

After a lapse of few years in complete political instability Fan Siun, again a general, ascended the throne. During his reign K'ang T'ai and Chu Ying visited Fu-nan as ambassadors from China. They met in the country the Indian envoy Chen-Song. The Chinese ambassadors furnished a very good account of Fu-nan in two books and the work by K'ang T'ai was considered to be of immense importance. Unfortunately, the book is lost to posterity. It is, however, significant to note from the excerpts of the text quoted by later authors that the king brought about an end to the indecent habit of the men wandering about naked.<sup>5</sup> Fan Siun sent several embassies to China during the period of his long reign.

Fu-nan finds a reference in Chinese history in 357 A.D., when a Hindu monarch occupied the throne. He was known as Chandana or Chandra who sent an embassy to China.



The history of the Liang dynasty in Chinese has recorded the tradition of another Brahman Kaundinya, who ruled Fu-nan in the beginning of the fifth century A.D. and a little before. The account is as follows:

“Kaundinya, a brahman from India, heard a supernatural voice calling to him; ‘you must go and reign in Fu-nan.’ Kaundinya rejoiced in his heart and reached P’an P’an which is to the south. The people of Fu-nan heard of him; the whole kingdom was stirred with joy; they came to him and chose him king. He changed all the rules according to the methods of India.”<sup>6</sup> Jayavarman (Cho-ye-pa-no) with a family name of Kaundinya was one of the most important successors of Kaundinya. He entered into trade with China by sending some merchants to Canton. Nagasena, a Buddhist monk, accompanied the merchants on their way back to Fu-nan. The king sent back the Indian monk with presents and compliments. Nagasena furnished a good account of the customs and manners current in Fu-nan, the most interesting of which is a reference to the cult of Mahesvara, installed on the Motan hill. Three more embassies were sent by Jayavarman to the imperial court of China, one of them carrying an impressive image of Buddha in coral and the other comprising two famous Buddhist monks of Fu-nan, who went to translate the sacred scriptures. Jayavarman died in 514 A.D.

Rudravarman, elder son of Jayavarman born of a concubine, succeeded to the throne by assassinating the legal heir. Following the footsteps of his father, he also sent at least six embassies to China. A twelve-foot long hair of Buddha happened to be a precious present sent by him. A period of about three quarters of a century following Rudravarman appears to be of great instability, because he is the last king of Fu-nan mentioned in Chinese chronicles. He was captured by Chitrasena, a king of Chenla. The last reference to Fu-nan is found in the documents of the Chinese pilgrim I-tsing (671-695 A.D.) in the following words:

“Leaving Champa and going towards the south-west the country of Pa-nan is reached. Formerly this was called Fu-nan. In earliest times it was the country of the naked men. The people worshipped many *Devas*. Then the law of Buddha prospered and expanded. But at



the present time a wicked king completely destroyed it and there are no monks.”<sup>7</sup>

Chenla is the Chinese name of the kingdom of Kambuja. It was originally a vassal state of Fu-nan, lying south-west of Lin-yi (Champa). The family name of the king was Ksatriya and the personal name Chitrasena under whose ancestors the kingdom became more powerful.

Influence of Indian culture on Cambodia had started as early as first century A.D. and broadly there were two distinct stages, both represented by the arrival of brahman Kaundinya. Numerous accounts depicting the life and culture of the people of Fu-nan stand in support of the theory. These accounts are found in the History of the Tsin Dynasty composed by Fang Hiuan-ling (578-648 A.D.) and covering the period from 265 to 449 A.D., History of the Southern T'si covering the period from 479 to 501 A.D. and documented in the beginning of sixth century A.D., History of the Liang Dynasty (502-556 A.D.) and the New History of the T'ang Dynasty (618-906 A.D.).

Of all the evidences pronouncing the influence of Indian culture on Fu-nan, the three Sanskrit inscriptions yielded by the country stand unparalleled. Invocating god Vishnu in the first, he has been designated as Chakratirthasvami sanctified by the brahmanas possessing knowledge of the *vedas*, *upavedas* and *vedangas* and sages versed in the Sruti by prince Gunavarman in the second, and third recording the donation to some Buddhist establishment and also mentioning the Buddha, Dhamma and Sangha.<sup>8</sup> All the three inscriptions speak that Vaishnavism had also carved a niche in the society and culture of Cambodia, though in the Chinese annals only Shaivism and Buddhism find a mention. The third inscription brings back to mind the style of the eulogies in ancient India. The use of Sanskrit verses and south Indian alphabets established it beyond doubt that Sanskrit language and literature in a developed form had already made a place in Cambodia. Essential elements of Hindu culture along with the religion and mythology of India also appear to have distinctly made a place in the state of Fu-nan much before the establishment of Kambuja empire in sixth century A.D.



Amongst all the centres of Indian culture and civilization Fu-nan occupied the pivotal place to feed different states and regions all around. The ruling class and the nobles absorbed the elements of Indian culture in the first instance and thereafter spread the same to other classes of society. In fact it will not be far from truth to say that the Indian culture, to whatever extent the same may be, did not penetrate the peasant society. It remained confined to the aristocracy and nobles occupying the highest position. In view of such a situation only the Chinese appear to draw a picture depicting primitive barbarism in the society.

In the field of art as well, Fu-nan did not remain unaffected by the Indian characteristics. In spite of the fact that the remains of art, which did not perish, are scanty, there is a general consensus that they did carry with them the Indian impact. On the basis of the data collected together by Parmentier it can be believed that the temples in the earliest stages were of bricks and comprised a square or rectangular sanctum devoid of any ornamentation and surmounted by a simple sikhara type roof of several receding tiers.<sup>9</sup> Temples with such architectural features are reminiscent of the Gupta period temples in India. Scholars in general are of the opinion that the Indian influence was much more marked on the sculpture of Fu-nan. G. Groslier, the French Curator of Angkor monuments went to the extent of propounding a theory that the Indians who immigrated into Cambodia brought with them artists and craftsmen who were entrusted with the job of erecting temples and carving images of god.<sup>10</sup>

The glory and splendour of the Khmer Empire reached its apogee with the rise of Kambujadesa. Kambuja, it may be recalled, was a vassal state of Fu-nan. It rose into power after subjugating Fu-nan sometimes in the sixth century A.D. The kings of Kambuja, as mentioned in the Baksei Camkron inscription, claimed their heredity from the great sage Kambu Svayambhuva, the legendary account of which has been furnished in the pages of the next chapter. The same inscription makes a reference to Srutavarman as the root of the Kambuja rulers, who was successful in removing the fetters of bondage. According to another inscription at Ta Prohm, Sresthavarman was the son of



Srutavarman and described as the sun in the sky, which is the family of Kambu. Both Srutavarman and Sresthavarman should, therefore, be regarded as the earliest known kings of Kambuja in history. Of course, the above-mentioned two kings are credited for gaining independence from Fu-nan, the latter continued to exist as a petty state for a little more time. The state of Kambuja gradually aggrandized its power under Bhavavarman and Mahendravarman and completely absorbed the state of Fu-nan during the regime of the latter's son and successor Isanavarman in 630 A.D. Though the kingdom of Kambuja developed into a great power in sixth century A.D., the honour could not last long. Jayavarman I happened to be the last amongst the five or six kings, who ruled the kingdom founded by Bhavavarman. This period witnessed the influence of Indian culture in a large measure in various aspects of administration and society. The haughty nature and unwarranted statements in the form of a challenge forced the king of Java, Sailendra, to capture and kill him. The kingdom came to an end but circumstances leading ultimately to sunrise of the great Khmer Empire were created.

After the death of Jayavarman I in 681 A.D. the Kambuja kingdom was engulfed in darkness till the accession of the young king Jayavarman II in 802 A.D. It appears from the limited information available that the kingdom had to acknowledge the suzerainty of the king of Java. Besides achieving the honour of making the kingdom independent once again, he conquered the chaotically splintered homeland and established a series of capital on the inland plain. There is no contemporaneous record of the reign of Jayavarman II, but a lot of information on the illustrious rule is available from the inscriptions of his successors. He was not crowned as king by the right of his birth as evident from the geneological accounts of kings Yashovarman (889-900 A.D.) and Rajendravarman (944-968 A.D.). In the beginning he resided for sometime in Java under circumstances which can not be explained. Later on, he returned back to his country and declared himself as an independent king. A new religious cult of the king deriving all sanctity and strength from Lord Siva by designating the *Lingam* as *Devaraja* (God-king) was introduced by him. The concept of 'divine royalty' was spelt out in Khmer inscriptions as '*Kamrateng*



*jagat ta raja*', i.e. Lord of the world who is king. In Sanskrit this Lord of the world is the *Devaraja*. This religious belief was perpetuated more or less on the same lines as the Pharaohs of Egypt. The king was supposed to be the representative of God to rule the people with the divinely power bestowed on him. The attention of all the sections of Khmer society was focussed on and worked for the glory of the God-king. Like the pyramid temple with the royal essence in Egypt, the architecture of the Khmer Empire was centred round the concept of *Devaraja*. A detailed account of the life and reign of Jayavarman II is available from a very long inscription of Sdok Kak Thom of the eleventh century A.D., and assigned to Udayadityavarman II. The inscription records the name of all the kings from Jayavarman II, but the greatest significance of the text lies in the account it furnishes on the establishment of the cult of *Devaraja*. A high priest of the cult was also appointed by the king with a royal decree making the office hereditary.

Jayavarman II made a distinct contribution to the development of Kambuja architecture which reached its zenith under his successors. For a capital the final choice of Jayavarman II fell on Hariharalaya in Angkor region, which earned a world recognition on account of many grand palaces and temples built by a number of successive kings. Jayavarman II continues to be remembered as the national hero of Kambuja history. He received the posthumous title of Paramesvara.

After the death of Jayavarman II in 854 A.D. Jayavarman III ascended the throne and ruled till 877 A.D. He was an insignificant king and with him the direct line of Jayavarman II came to an end. Remotely connected with the queen of Jayavarman II, Indravarman I was the next monarch. He was truly an important king of the Kambuja history and a great builder. According to the recent studies he was the real founder of the Khmer Empire, both from territorial and political standpoints. He reunited the divided Chenla into a powerful Khmer kingdom and established the capital of Indrapura. The series of capital built by Jayavarman II became the spirited and temporal focus of the kingdom. Indravarman built Bakong at Rolous in 881 A.D. Since Rolous was flat, Indravarman constructed a step-pyramid to present the appearance of a mountain. The five-tiered Bakong pyramid houses the



*Devaraja* in the form of ashes. Tower sanctuaries constructed later on housed the images of Hindu gods in combination with the members of the royal families—believed sometimes to be a cult of ancestor worship. The other monument at Rolous constructed by Indravarman in 879 A.D. is Preah Ko. The reign of Indravarman marks an important-stage in the development of Kambuja art, on account of being a connecting link or transitional phase between primitive and classical art of Kambuja. In the field of public welfare Indravarman will always be remembered in history for having taken the initial steps towards the well-known irrigation system in Angkor by constructing a big tank known as *Indratataka*.

Indravarman ruled for twelve years (877-889 A.D.) and received the posthumous title of Isvaraloka. He was succeeded by Yashovarhana under the title of Yashovarman, who occupies a place of great honour in the history of Kambuja. While shifting the capital twelve miles away Yashovarman I laid the foundation of the capital Phnom Bakheng in Angkor, which was in the beginning known as Kambujapuri. The name was changed to Yashodharapura at a later stage. Yashovarman I can, therefore, be considered as the founder of Angkor and its civilization. He preferred to shift the capital, because the pyramid temple at Bakong not only contained his father's *Devaraja* during his lifetime but also served as his funerary temple. Hence, the same could not be used by Yashovarman himself. He, therefore, selected the natural hill of Phnom Bakheng as his capital and built a temple on the top to house his own *Devaraja*.

Yashovarman straightened the Siem Reap river to form the eastern moat of the city Yashodharapura, dug canals to hem its other sides, and studded the city with many pools. He also dug the eastern Baray (now completely dry), an irrigation reservoir, about seven kilometres long and more than a kilometre and a half in width. Yashovarman's great interest in irrigation facilities, initiated by Indravarman I, was shared by almost all succeeding Khmer monarchs. God-king, though they proclaimed themselves, they were first of all masters of the land and its rice economy. Almost each king made his own contribution to the work of his predecessors in connecting rivers, reservoirs, and even temple moats and developing them into a vast water complex.



Yashovarman erected several monasteries as well, one dedicated to the Buddhists and others to Hindus. This attitude of toleration and peaceful co-existence of all religions took deep roots amongst the kings of the succeeding periods. Yashovarman on his own was devoted to Saivism and as such honoured with the posthumous title of Paramsilvaloka. According to the court poet the glory of the king was sung even after his death by the people in their games, on their beds, and in their travels.

There was hardly any achievement by the four kings succeeding Yashovarman I, which deserves mention and appreciation. Owing to continuous struggle for power in the third decade of the tenth century, the victorious king Jayavarman IV abandoned Angkor and settled in 921 A.D. in a new capital Kohker, about eighty kilometres north-east of Angkor.

Rajendravarman (944-968 A.D.), elder son of Jayavarman IV, ascended the throne in 944 A.D. Though a large number of *prasastis* of the reign of Rajendravarman are available, they are not very helpful in reconstructing the political history of the period. In pursuit of the established cult Rajendravarman built the great temple of Pre-Rup to house his *Devaraja* south of East Mebon. Arrangement of five towers in the central sanctuary itself was an important innovation in the temples of East Mebon and Pre-Rup. The five-towered sanctuary is surrounded by smaller towers at a lower level outside. Of the many structures raised during the disturbed conditions of tenth century, the most remarkable and attractive is the temple at Banteay Srei. It stands at an isolated place about thirty kilometres from Siem Reap. Banteay Srei, meaning 'Citadel of the Women', is marked for a revolution in building and a transition in architecture. Bricks play comparatively an insignificant part in its construction—the sanctuary and other buildings being made mostly in stone. The structures at Banteay Srei are distributed on ground level in place of the pyramid temples with terraces piled one above the other. The temple was completed in the last year of Rajendravarman's reign. The classic example of the temple of Banteay Srei displays a feminine beauty and is a work much nearer to Indian style. For the first time the Khmers founded at this place a permanent fortress city and temple in red sandstone with boldness of an exemplary



nature. Characteristically classic in style, the temple is a perfect imitation of the preceding wooden architecture in stone, full of inventions distinctive of their own.

Owing to misreading of certain inscriptions, Finot, Director of the French School, considered the temple of Banteay Srei as the last specimen of the classic period, having been completed only in fourteenth century A.D. The founding stele, discovered by Marchal in 1936, however, clinched the date as well as the founder of the temple. It was built in the reign of Rajendravarman and dedicated in 968 A.D., the first year of the reign of his successor, Jayavarman V. It is only on this account that both the kings have been praised in the inscription. Yajnavaraha, the royal *guru*, and his younger brother Vishnukumara were the founders of the temple. Rajendravarman received the posthumous title of Sivaloka. He was succeeded by Jayavarman V in 968 A.D.

As already stated the foundations of the glorious period of Kambuja Empire were laid by the illustrious ruler Indravarman. They were further consolidated by powerful kings like Yashovarman and Rajendravarman under whom there was a wide expansion of the dominion of the empire. Arab writer Ibn Al Fakih (902 A.D.) has indicated in an interesting manner that the extent of the empire was four months march. The Kambuja Empire is marked by another characteristic in the tenth century A.D. The Hindu culture was deeply rooted on the soil as is evident from the perfect Sanskrit *kavya* style used in the inscriptions at Mebon and Pre-Rup which clearly indicates that their authors possessed deep knowledge of all the metres. They were also acquainted with Sanskrit rhetoric and prosody. An adequate knowledge of the Indian epics, *Kavyas Puranas* and other literature was also possessed by them. Indian philosophical theories and spiritual conceptions, besides religious and mythological beliefs of various sects in India were very well known to them. They were well-versed in the grammatical treatise of Panini. Four verses of Pre-Rup, inscription allude without any doubt to Kalidasa's *Raghuvamsa*, sometimes repeating the words used by the great poet. In all appropriateness R.C. Majumdar has remarked, "It may be said without any hesitation, that like the Kambuja monuments the Kambuja Sanskrit records on



stone far exceed in volume and grandeur than those of ancient India of which the existence is so far known".<sup>11</sup>

In course of time the brahman priests gained so much power and hold in the state that they constructed temples and monuments for themselves, of which the ancestral temples of Preah Ko and Lolei are good examples.

During the following period of two hundred and fifty years, the Khmer Empire encountered days of great instability. Of the eight kings who ruled during the period, only three can be considered to have made some contribution to the glory of the kingdom. They were Jayavarman V, Udayadityavarman I and Udayadityavarman II, who built the pyramid temples of Phimeanakas, Ta Keo and Baphuon respectively at Angkor. The last king also took pains to construct the Western Baray, which still continues to be a great source of irrigation. He is also well known for the long inscription at Sdak Kak Thom, which furnishes a lot of information on the Kambuja kingdom and its rulers. The inscription is also considered to be very important for the details on the cult of *Devaraja*.

A golden period in the history of the Khmer Empire ushered in the first quarter of the twelfth century A.D., when the illustrious king Suryavarman II of a dynasty other than the ruling one came to occupy the throne. The claims of Suryavarman II to the throne rested more on his army than on his inheritance. He was all along his career successfully quelling the stiff opposition from the enemies. Besides dealing with the enemies in an intrepid manner, it is said that the great king Suryavarman II extended his dominion from Champa to Lower Burma and in addition northern part of Malay Peninsula upto the Bay of Bandon. The victories of Suryavarman II over hostile kings have been described in glorious terms in the inscriptions.

Suryavarman II will remain immortal in the annals of history for constructing the largest and most charming temple of Angkor Wat dedicated to Vishnu. The temple stands as the masterpiece of classical Khmer art. All the groping, growth and elaboration of religious architecture by the Khmer kings through the centuries found at Angkor Wat its ultimate expression, both in massiveness and ornamental details. The temple at Angkor Wat speaks out clearly that the artists at the service



of Khmer kings possessed a sound knowledge of stereometry, without which the creation of a perfect pyramid would not have been possible. Perfect sense of proportion and idea of perspective are reflected in the measurements of various parts of the temple complex. The road leading to the temple is almost twice as long as the western facade providing a very good perspective view of the temple as a whole. The rise of the terraces is so well calculated that all of them appear to be of equal height without obscuring the view of other terraces. A perfect harmony of proportion is also displayed in the balance between vertical and horizontal planes. The integration of the diverse building parts and fusion of the richly-carved decoration render the monument a remarkable piece of architecture.

A strong wave of Vishnu-worship swept the south-east Asian countries in the twelfth century A.D. Suryavarman II was, as a sequel, a devotee of Vishnu and as such the exploits of Vishnu are depicted almost in every part of the temple. The temple of Angkor Wat was constructed with the conception of Mount Meru, which is traditionally said to be the abode of Vishnu. Besides Angkor Wat, Suryavarman II also built Thommanon and Chan Sray Tevoda. They were small shrines on either side of the Avenue of Victory, the great axial roadway between Phineanakas and the Eastern Baray.

Though the last known date of Suryavarman II is 1145 A.D., he appears to have ruled for a few years more. Within a period of about thirty years after him three insignificant monarchs ruled over the kingdom. The flickering flames of the Khmer Empire, however, again outburst into a golden light during the regime of Jayavarman VII, who happened to be the last great empire and temple builder. He was the son of Dharanindravarman II, a Buddhist, and ascended the throne in 1181 A.D. Jayavarman VII went into exile, which was self imposed, but at the age of fifty or so he had to return to the throne to save the kingdom from the marauding Chams. Champa had been the eternal enemy of Kambuja and Jayavarman VII displayed his valour in conquering it. He invaded Champa and placed his own man as king after dethroning its prince. Champa continued to be a vassal state for long after the conquest of Jayavarman VII. Making Champa a vassal state at the end of a long struggle was a triumphant feat of Jayavarman VII.



Jayavarman VII is also said to have gained the honour of success against the kingdom of Pagan on the western side of his empire. The kingdom of Pagan had grown very powerful since the middle of the eleventh century A.D. by extending the authority over the whole of central and southern Burma. Pagan was, however, annexed to the Kambuja Empire towards the close of the twelfth century A.D. as revealed by the Chinese chronicles. The extent of Jayavarman's empire spread from the Bay of Bengal to the Sea of China with central regions in the Indo-Chinese Peninsula and the northern part of Malay Peninsula forming part of it.

Jayavarman VII established a new city of Angkor Thom with the temple of Bayon housing his *Devaraja*. Ta Prohm, Preah Khan, Neak Pean and Ta Som were some of the other important monuments constructed by him. He is also credited for the reservoir of Srah-Sang. The new capital of Angkor Thom was surrounded by a city-wall and a moat. Unlike the monuments of the earlier period with balustraded *nagas*, the causeways over the moats were lined by giant sculptures depicting the scene of *Samudramanthan* (Churning of the Ocean). The gods of the heaven on one side and the demons from the underground on the other, hold a part of the *naga*, each of them pulling with all force to win the ambrosia of immortality. The Bayon temple can be considered to be the greatest achievement of Jayavarman VII in architecture. The clustering of so many towers, however, within a small area speaks of the hasty construction without proper planning. The material used in the construction of the monument is also very poor in quality. Vying with the earlier kings to march ahead in architecture, the quantity received greater attention ignoring the quality, leading to many constructional flaws. There is no sense of proportion in space, height and the distribution of structures. Ta Som is another example of hurried architectural activity. Bayon, however, is an exception in being the only temple which throws light on the day to day life of the people at that time. The bas reliefs depict not only battle scenes, but also lively scenes of market, fishing, work in the fields, acrobats, cock and dog fights.

Angkor Thom incorporates within its premises a number of earlier buildings including the Baphuon and Phimeanakas. Being a Buddhist,



Jayavarman VII substituted a Buddha image, the Buddharaja for the *Devaraja*, perpetuating the same old fashion of divine royal power like the earlier monarchs. In order to manifest his strength as the Lord of the Universe, he presented his own image in the form of Lokesvara on all the four sides of all the towers in the temple of Bayon. The five gates leading to Angkor Thom also carry the massive figure of the same Lokesvara on both the sides.

The religious and compassionate sentiments of almighty king ruling over a vast stretch of land were displayed in the works of great public utility. An ardent Buddhist of Mahayana order, Jayavarman VII built 102 hospitals, well laid out road system with 131 travellers' rest houses in addition to many monasteries. He was a king so compassionate as to be moved by the slightest sufferings of his subjects. An account of the donation made by the king furnished in the Ta Prohm inscription is a very good insight into the depth of the religious sentiments of the king. How much the king was concerned with the welfare of his subjects is openly reflected in the following record relating to his foundations:

“The bodily pain of the diseased became in him (Jayavarman VII) a mental agony more tormenting than the former. For the real pain of a king is the pain of his subjects, not that of his own (body).”

Jayavarman VII ruled for more than twenty years and his death in the closing years of the twelfth century can be treated as a great landmark in the history of Kambuja Empire. It is very well recognised that the Khmer Empire reached the peak of its glory in the eleventh and twelfth centuries A.D. During this period the stretch of the empire was the maximum extending from lower Burma to Annam and Bay of Bengal in the west and China Sea on the east. Most of the Thai principalities in Laos lying in the north of the kingdom acknowledged the suzerainty of the Kambuja Empire. On this side, the extent of the empire touched the boundaries of the Chinese empire. In the south, the Kambuja Empire covered under its dominion the whole of Siam, Cambodia and Cochin China, besides part of Malay Peninsula. The period of eleventh and twelfth centuries A.D. can be labelled without the least hesitation as the golden era of Kambuja Empire not only in the field of conquests and expansion, but also in Sanskrit literature,



both secular and religious. The theme of the two great Indian epics were carefully engraved on the stone walls of the temple. Learned priests, both in Hindu and Buddhist canons, occupied an honourable position in state as well as society.

The reign of Jayavarman VII represented the last outburst of glory both in the Khmer Empire and Angkor period. The kings who succeeded him were petty chiefs without any capacity to maintain the dignity and honour of the great Empire. In the middle of fifteenth century (1431 A.D.) the marauding Thais took advantage of the weakness of the kings in quick succession and sacked the capital of Angkor, which thereafter was thrown into oblivion till rediscovered by Henri Mohout. A new capital at Phnom Penh was established by the Khmers at the confluence of the great rivers Mekong and Tonle Sap closing the brilliant chapter of Angkor history for ever.

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## Indian Influence on Ancient Kampuchea

SCHOLARS of ancient Indian history are well aware of the fact that in the early centuries of the Christian era, Indian culture spread its wing over a number of countries in southeast Asia; Cambodia occupying a special position. In his own words Ptolemy used the term of India extra Gangem for the expansion and in his accounts reference to further progress of maritime intercourse with places having Indian names can be distinctly observed. Numerous factors in the past were responsible for the cultural expansion, which has very often been misconstrued as political expansion as well. Foreign invasion leading to the emigration of people from India, the zeal of the frustrated princes to get hold over different land, search of an alternate source of gold after the loss of Roman market, political hinderances confronted in the overland trade with Central Asia, proselytizing zeal of the Buddhists and Brahmanas etc., all taken together had a hand in bringing about the cultural impact.

Having observed distinct cultural elements of Indian civilization in the neighbouring countries of southeast Asia, the European scholars were tempted to label them as Indian colonies. Prevailed upon completely by the enthusiasm and spirit of nationality, Radha Kumud Mukherji followed them in right earnest.<sup>1</sup> The attention to the national spirit of Mukherji was drawn by F.D.K. Bosch in the fleets of Indian adventurers, like Drake and Carandishes, crossing the sea to farther India and Indonesia, funding kingdoms, establishing colonies, expanding trade with their mother country and in due course bringing over talented artists from Bengal, Kalinga and Gujarat to erect beautiful monuments.<sup>2</sup> Feelings of nationality and cultural conquest found their expression in the establishment of a Greater India Society in 1926. No



doubt, the term colony or colonial rule was very much detested by the Indians on account of the British rule, a misconception has developed amongst scholars that with the foundation of Greater India Society the Indian historians tried to impress upon their imperialist rulers their own supposed imperialism of the past and thereby expose the hollowness of the British theories of India's passive role in external trade in the past and her dominance by foreign powers from early days. The eminent scholar R.C. Majumdar is now being publicly accused of having used the words 'Ancient Indian Colonies' in his works. With the word 'Colony' the historians immediately struck at the unfounded meaning of exploitation, conquest or founding a kingdom of their own. A critical study of the works of Majumdar will dispel all doubts about any such conception in his mind by the statement, "The fusion between the Indian settlers and the Hinduised local people was so complete that it is not always possible to distinguish between the two. The latter assumed Hindu names and adopted Sanskrit or Pali language and Hindu religion, manners and customs, while the Indians imbibed local habits and social usages and merged themselves into the local communities. Thus grew up the Indian colonial kingdoms which were constantly strengthened by fresh streams of immigration from the motherland."<sup>3</sup> Does the above statement point out in any manner the idea of exploitation or conquest by the Indian people? The idea behind the use of the term was simply cultural interaction and impact of the people of different countries on each other.

In spite of the fact that the Society of Greater India was instrumental to the publication of several scholarly works, it is believed that the scholars were responsible for the creation of a number of historiographical myths; exploitation and conquest being the primary ones. P.N. Bose and P.C. Bagchi have been charged in a manner similar to that of Majumdar in the book 'Indian Colony of Siam' (1927). An undesirable over-enthusiasm of nationality might be observed against them, but in no case they can be said to have used the term colony in the sense of exploitation or conquest. It is said that K.A. Nilakantha Sastry went a step further in comparing the ancient Greek colonists with the Indians emigrating to southeast Asian countries. He argued that just as the ancient Greeks leaving for a colony used to carry some



soil and fire from the metropolis for the purpose of establishing new home and hearth in the colony, so also did the ancient Indians carry with them the cult of Siva in the countries of their choice.<sup>4</sup>

According to Melvin M. Knight the term 'colony' "originally meant a transplanted fragment of human society".<sup>5</sup> It was only in this broad sense that the word was used by the historians in the past, because none of them has proclaimed any theory of political or economic conquest of the southeast Asian countries. The greatest exponent of the term, R.C. Majumdar, himself remarked, "The colonies were not regarded as source of exploitation for the benefit of the conquering race."<sup>6</sup> The so-called southeast Asian colonies were in no period of history inhabited by subjects of any particular state of India. There was no military conquest or annexation of the countries as such by any Indian king either. The reference to pillar inscription of Samudragupta mentioning that the king received homage from the peoples of all island countries, as assumed by D.C. Sircar is vague.<sup>7</sup> The act of seeking permission to build a monastery at Bodh Gaya by the king Meghvarna cannot be treated as the acknowledgement of the suzerainty of Samudragupta. Large scale immigration of Indian citizens to these countries is also ruled out in view of the somatoscopic and somatometric features of the people of southeast Asia in general and Cambodia in particular. Miscegenation by the Chinese people who settled down in Cambodia in a large number must have been responsible for the development of typical physical features of the Khmer people there. On the basis of available records and other evidences it can be remarked without the least hesitation that the Chinese had established contacts with the countries of South Sea like Lin-yi (Champa) and Fu-nan, the earliest known state of Cambodia, evidently for trade. Both Indian and Chinese, it can be observed, immigrated to Cambodia and stood face to face as competitors of each other right from the beginning of recorded history. Cambodia has, however, never been claimed by the Chinese to be their 'colony'.

Against the backdrop mentioned above, certain important aspects of the cultural interaction should in no case be completely ignored. It is a well known fact that the cultural achievement of the inhabitants of Cambodia was not advanced enough when they came



into contact with the Indian people immigrating to that land. After the arrival of the Indians a process of extreme acculturation set in. Though legends and traditions cannot be regarded as facts of history, they have their own importance in as much as they preserve the accepted beliefs regarding the foundation of Indian culture. Fu-nan and Kambuja, the two most important states of Cambodia, had their own local legends in the earliest period of history. As recorded by K'ang T'ai in the middle of the third century A.D. the legend current in Fu-nan runs as follows:

'The sovereign of Fu-nan was originally a female called Lieu-ye. There was a person called Huen-chean of Mo-fu. He was a staunch devotee of a Brahmanical god who was pleased with his piety. He dreamt that the god gave him a divine bow and asked him to take to sea in trading vessel. In the morning he went to the temple of the god and found a bow. Then he embarked on a trading vessel and the god changed the course of the wind in a manner that he came to Fu-nan. Lieu-ye came in a boat to plunder the vessel. Huen-chen raised his bow and shot an arrow which pierced through the queen's boat from one side to the other. The queen was overtaken by fear and submitted to him. Thereupon Huen-chen ruled over the country'.<sup>8</sup>

The above story has been repeated in later Chinese texts, often with additional details like the marriage between Huen-chen and Lieu-ye. Huen-chen and the other variant forms represent the Indian name Kaundinya. Lieu-ye meant "Leaf of Willow" and it is said that when Kaundinya met her, she was naked. Kaundinya gave her a piece of cloth to cover.

A reference to the same story is found in an inscription of the adjacent country Champa dated to 657 A.D. Alluding to the foundation of Bhavapura, the capital of Kambuja, it says, "It was there that Kaundinya, the foremost among Brahmanas, planted the spear which he had obtained from Drona's son Asvatthama, the best of the Brahmanas. There was a daughter of the king of serpents, called Soma, who founded a family in this world. Having attained through love, to

a radically different element, she was taken as wife by the excellent Brahman Kaundinya for the sake of (accomplishing) certain works. Verily, incomprehensible is the way of God in providing conditions leading to future events. (King Bhavavarman) who, being born in that pure unbroken line of kings, is, even to-day, the pride of his subjects by his unblamable (conduct).<sup>9</sup>

This legend can be very well compared with the accounts preserved in the Cambodian annals about the origin of the kingdom of Cambodia in the following words:

“Adityavarman, king of Indraprastha, was displeased with one of his sons and banished him from the state. He came to the country of Kok Thlok and made himself master of it by defeating the native king. One evening he was walking on a sand bank when suddenly the tide arose and obliged him to pass the night there. A *Nagi* of marvellous beauty came to play on the sand and the king, overpowered by her charm, agreed to marry her. Then the *Naga* raja, the father of the betrothed girl, extended the dominions of his would be son-in-law by drinking the water which covered the country, built a capital for him and changed the name of the kingdom into that of Kamboja”.<sup>10</sup>

Very much in tune with the above version in later annals, there is another very interesting legend regarding the origin of Kambujadesa. It is as follows:

“In the dim past Cambodia was a desert of sand and rocks. One day Kambu Svayambhuva, the king of Aryadesa, found himself in this dreary landscape. The death of his wife Mera, whom the great god Siva himself gave to him, made him disconsolate and he left his country “in order to die in the wildest desert” he could find. Having reached Cambodia he entered into a cave. To his horror Kambu found himself in the midst of a large number of huge, many-headed snakes, whose piercing eyes were turned towards him. Kambu, however, boldly unsheathed his sword and advanced towards the biggest snake. To the utter amazement of



Kambu the snake spoke in a human voice and asked his whereabouts. On hearing Kambu's story the serpent said, "Your name is unknown to me, stranger, but you spoke of Siva, and Siva is my king, as I am the king of the *Nagas*, the great snakes. You seem to be courageous too; therefore abide with us in this land you have chosen and end your grief." Kambu remained and came to like the *Nagas* who could take human forms. Several years later he married the *Naga* king's daughter. The king of the *Nagas* possessed magic power and turned the arid land into a beautiful country like that of Aryadesa. Kambu ruled over the land and the kingdom came to be called after him 'Kambuja'. A reference in brief to the above-mentioned legend can be found in the Baksei Cankron inscription dated 947 A.D., where the Kambuja kings treat themselves as the descendants of the great sage Kambu Svayambhuva."

The historical value of the legends mentioned above cannot be summarily dismissed while studying the influence of Indian culture over Cambodia. Similar legends were popular among the Pallava kings, who ruled over south India in the early centuries of the Christian era. Skandasisya, the progenitor of the Pallavas, has been described as the son of Asvatthama (son of Drona) by a *Naga* women in some records. In other references Virakurcha, the predecessor of Skandasisya, is said to have married a *Nagi* who in turn invested him with royal insignia. The marriage of a Chola king with a *Nagi*, whose son happened to be the Pallava king of Kanchi also finds a mention in Manimekhalai, besides three other Tamil texts. The legend of *apsara* is repeated in a Sanskrit inscription of Amaravati (Andhra Pradesh) in which the Pallava story is recorded. It runs as follows:

"By the favour of Siva, Drona had a glorious son named Asvatthama who became an ascetic, and lived in a forest. One day the *Apsara* Madani came to this hermitage and both became enamoured of each other. The *apsara* bore him a son named Pallava, who became the originator of the dynasty known after him.<sup>11</sup>



The historians cannot overlook the common basic factor in the foundation of a royal dynasty after the marriage of an Indian prince or sage with a *Naga* woman or *apsara* as observed in the legends current both in India and Fu-nan, the earliest state of Cambodia.

The term 'colony' used by Majumdar has been unnecessarily viewed in the light of a political conquest when he himself explained the facts in a crystal clear manner. D.G.E. Hall is also of the same opinion that there was no question of political conquest. He said, "Indian influence, which unlike Chinese, had no political implications, was in the process of absorption by the native societies in South East Asia, transformed just as much as, for example, that of ancient Greece was in its impact upon western Europe."<sup>12</sup> Hall elucidates in an appreciable manner the root cause which led the nationalist historians of India to come out openly with the idea of Indian conquest. "The main reason for this failure to pay due regard to the indigenous culture of the people of our region is easy to see. Both politically and culturally, South-East Asia has been overshadowed by India and China, which were great powers with established civilizations long before her own historical period begins. And it was only through the fertilizing impact of their cultures that her own began to develop and achieve greatness. For obvious reasons also, when European scholars became aware of it their attention was concentrated upon rulers, courts, and temples, where the external influences were the strongest, while their approach had necessarily to be made in the first instance through Chinese or Sanskrit writings."<sup>13</sup>

The basic structure of the society in Kampuchea never underwent a complete change or transformation. Certain ideas and principles, which were to the liking of the local people, were adopted brushing aside all others which did not find favour with them. Hall has again drawn a clear picture of the measure of cultural impact of India over Cambodia. He remarked, "What does exist, however, points indubitably to the fact that in the so-called 'Hinduised' states the great mass of the people was for long either untouched by Indian culture or in absorbing it changed it by bringing it in line with indigenous ideas and practices. Thus the structure of society was largely unaffected by Hindu influence. The caste system, which is fundamental to Hinduism,



has had notably little influence and woman has largely maintained the high place accorded her before the earliest impact of Indian culture, a far higher one than she has ever occupied in India during recorded history. Moreover, after the introduction of Hinduism and Buddhism the religious ideas and practices of earlier times persisted with immense vitality, and in coming to terms with them both religions were profoundly changed.”<sup>14</sup> John F. Cady is very much justified in commenting that it was not at all possible to transplant or foist the complex Hindu system in a foreign land like Cambodia. He said, “Hinduism as a cultural system was far too complex and deeply rooted in the context of India itself to be capable of transfer to South-east Asia in any complete way. Hinduism could be transferred, therefore, only in a selective way.”<sup>15</sup>

A general belief has been rampant amongst the historians of South India that the resident Indian merchants were the principal transmitters of Indian culture after their local marriage. People, politically and socially conscious in these communities exploited the services of Brahman priests from India, who could invest them with great powers by performing specific rituals. Liaison between the two countries was further strengthened by the adventurous Ksatriya plunderers, who married into the ruling families and subsequently produced Brahmanas to buttress their political authority. In support of the belief it is pointed out that the earliest inscriptions were invariably written by literate Brahmanas in good Sanskrit. Linguistic intermixture with the local tongues appeared on the scene only at a very late stage.

In the eyes of some scholars the local port patricians and princes themselves usually took the initiative in appropriating Indian culture. To facilitate the enhancement of governmental authority and extension of their princely domains, the local rulers enlisted the services of learned Brahmanas from India to perform useful functions at their emerging courts. These were used to legitimize dynastic authority, to exploit their mastery of astrology and numerology, and to assist in expanding governmental operations generally.

The network of the old customs in Cambodia remained preserved under the veneer of Indian culture. Though the system of writing was



adopted from India, the extent or degree of Indianization in the most important institution of *Devaraja* (divine kingship), was very much restricted. The tradition of the lord of the mountain, which could be equated very well with *Devaraja* was already in existence there. Of course, a similar concept in Siva being the Lord of mountain may be visualized.

With the end of the Second World War and in sequel the colonial rule, a drastic change of view was observed amongst scholars, who were inclined to adopt the other extreme of denying or minimizing the influence of Indian culture on Cambodia. A typical example will be enough to demonstrate it. A book entitled 'South East Asia in Transition' (ed. Dr. B.R. Chatterji, Institute of South Atlantic Studies, Delhi, 1965) was reviewed in the journal *E'tudes Cambodgiennes* (no. 6, April-June, 1966, pp. 32-33) published by the then Royal Government of Cambodia. With a sircastic remark the reviewer has summarized the work in the following sentence: "During at least 1200 years the Indian cultural influence dominated in the whole of S.E. Asia." Going a step further he commented, "What S.E. Asia owes to India is infinitely less than what France, Spain or England owes to Rome which occupied and ruled these territories. Still the Italians never glorify themselves of their civilizing domination." There is no justification in holding such an opinion.

An analysis of all the facts will make it evident that an autochthonous substratum of classical culture of Cambodia and other countries of Southeast Asia had already their existence when they came into contact with the Indian culture. Paul Mus has very clearly shown that before the advent of Indians the people of these countries had not been barbarians; on the other hand, they possessed a culture which had attained a more or less stable condition. Coedes has drawn a very interesting picture in proclaiming that the whole of this region comprising pre-Aryan India, Indo-China, Indonesia and South China constituted one cultural zone viz., Austro-Asiatique. Hence there were some common cultural elements already in existence in these countries. In the absence of any wide gulf in the cultural characteristics of the two countries, there was hardly any difficulty in absorbing the Indian culture when there was regular contact in the early historical period.



The elements of Indian culture, to whatever extent they were in line with the liking of the local people, were recognised, understood and approved by the indigenous population. There was as such no violent or abrupt break with the past when the streams of Indian people came into contact. The contact simply led to a transformation of the local culture having an overall similarity, though distinct in details. In other words it can be said that the Indians acted as a source of stimulus to enrich the local culture as a consequence of the response received in different parts of the region according to local genius or local culture. Fundamental differences in the culture of different countries in the region can be accounted for only by the local response.<sup>16</sup>

A set of historians have developed the fancy of designating the concept of 'Indian Colonies' in Southeast Asia as a grave error and a recurrent historical fallacy. As already made clear the word 'colony' obsesses the historians unnecessarily, because it never means political conquest. Literally the word 'colony' means a settlement or settlers in new country forming a community fully or partly subject to other mother state or people of one nationality or occupation in a city. Laying undue emphasis on the word 'colony' and taking it to mean political conquest are nothing but complete intentional disregard of the cultural influence of India in the countries of Southeast Asia, particularly Cambodia. This is much more so in the light of the candid expression of the pioneer amongst historians, R.C. Majumdar, who used the term 'colony' to mean nothing beyond fusion of two cultures and never in the sense of exploitation in any manner. Will we be justified in setting aside completely the genius of Indian artisans in the construction of splendid monuments like Banteay Srei and Angkor Wat, besides those raised in earliest times? Did the Brahmanas from India not play a vital role in the royal courts? Were the great epics Ramayana and Mahabharata in addition to Puranas, not a source of inspiration to the royalty? The ancient civilization of Cambodia was, as a matter of fact, a superstructure with a combination of Khmer and Indian elements raised over an indigenous substratum. In this context the remarks of R.C. Majumdar present the authentic picture of the influence of Indian culture on Cambodia. He said, "If art is an expression of national character and fair index of the culture and



civilization of a people, Kambuja easily takes the leading position among the Indian colonies in Indo-China and constitutes an immortal landmark and the greatest living testimony to the splendour of the civilization of which it is a product. Until recently no one doubted the Indian origin of this art, but lately a school of critics has sought to establish that this developed phase of Kambuja architecture is of purely Khmer origin and is not indebted to India in any way. They concede the purely Indian origin of the earlier structures but hold that the noble monuments of the eleventh and twelfth century do not owe anything to Indian influence or inspiration, but were original inventions of the local artists. This is not the place to enter into detailed discussion of this question, but according to a moral rational view the Kambuja architecture followed a regular course of development from the purely Indian type with which it started. It underwent a process of evolution such as we notice even in different parts of India itself, in different ages, and while the local genius and environments added new conceptions of beauty and principles of construction, it is as unreasonable to ignore Indian influence upon the monuments of Kambuja as to dissociate the culture and civilization of Kambuja in other spheres from those of India. If we study, for example, the palaeography and iconography we find the same phenomena. The earlier alphabets and images are hardly distinguishable from those of India, but gradually both undergo as low and steady transformation. The fully developed Kambuja script of the twelfth century A.D. shows an altogether different aspect, and it would be difficult to regard it as Indian unless one studies the process of evolution. Similarly we find new iconographic features, new names of divinities, and even new conceptions of religion, not met with in India. The same has been the case also with art and architecture. And this is only what we could expect in a living society. It is to be noted that the Indian colonization in the Far East was not an imperialism in any form, political or economic. It transferred new blood, in the shape of the cultural heritage of India, to create new life and spirit on alien soils. It transformed the weaker and the more backward by fresh vitality, and so long as this life-giving force was there the people were quickened by new impulses and did



not merely imitate but developed healthy lives of their own on the foundations well and truly laid by the Indians.”<sup>17</sup>

The author also observed during the course of his four months stay that the cultural influences from India were undoubtedly apparent, though restricted to the courts of the king, which hummed in and around Angkor. The brahmanas acquired a coveted position of king makers dictating terms to the rulers. They were treated in great esteem by the king, who felt proud in marrying their daughters with brahmans. Acquisition of so much power by the brahmanas was made possible by the performance of the rituals, which could accord a divine status to the king. With the status of a divine king, he was made free to rule his subjects according to his will and fancy. The subjects were bound to treat the king as god. No distinction of caste in the country was observed by the author. The inhabitants of the villages in the interior had their own way of primitive life without having anything to do with the Indian culture. Matriarchal system has an upper hand on the society even now. In a number of cases in the royal courts as well as the succession happened to be matrilineal. The services of the artisans from India were no doubt acquired for the erection of both simple and massive monuments, the architectural details were worked out and modified according to the local beliefs, traditions and customs. The author did not come across a single monument in Kampuchea, which could be declared as identical or an eye to eye copy of an Indian monument. The concept of temple-mountain, so popular in Kampuchea, has hardly any place in the ancient architecture of India. Further, the stories incorporated in ancient Indian texts and epics, like the Ramayana and the Mahabharata were modified to a considerable extent not only in Cambodia but almost all countries of South-east Asia. The stories were melted into the vessels of local customs and beliefs to present a different version. The well-known legend of Samudramanathan was also adopted in a modified form.

*Apsaras*, so common in the ancient Indian texts and architecture, found their expression on the monuments in Kampuchea in a style different from India, as revealed in the following pages. All these factors combined together make it abundantly clear that ancient Cambodians were not a lay follower of the Indians who visited the

country. They, of course, learnt certain things from the Indians, but developed the same on their own lines. The Cambodians did not appreciate the Chinese way of architecture and therefore in spite of their presence in the country, those elements could not find any place in the monuments of the country. The Chinese always believed in the cult of extravagant individuality which was not to the taste of the people in Kampuchea. In the Chinese concept ready-made forms like a painting was much more popular and the Kampucheans had the least liking for it and as such rejected.

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## Kingship and the Cult of Devaraja in Kampuchea

THE institution of kingship in ancient Kampuchea was the fulcrum around which the entire structure of culture and society revolved in the country. As centuries passed by the aura of kingship acquired greater weight and sanctity. In the initial stages of the historical era Kampuchea as a whole had no existence, since it was divided into several principalities, each ruled by a chief of its own. This is corroborated by the report of K'ang T'ai and Thou Ying (circa 240 A.D.) according to which Hiuen-tien (Kaundinya) founded the first dynasty of rulers in Fu-nan after defeating Lieou-ye and marrying her. Lieou-ye was undoubtedly a chief of a particular territory, establishing thereby the existence of territorial monarchy. A number of folk tales current in the country also speak of such states before they came into contact with the adventurers from India. Reference to all of them has already been made in the preceding chapters. Nilakantha Sastry holds the view that before the arrival of Indians in Kampuchea Lord Siva played the role of guardian deity in the local territorial states.<sup>1</sup> Though the conception of monarchy specifically as Saiva is not found in any early Indian text or epigraph, Coedes took the liberty of marching a step further when he said that the political system in Cambodia was under a deep impact of the Saiva concept of monarchy. According to his opinion the local deity of the states in Cambodia residing at a high place found merged with Girisa (Siva), the Indian god of mountain.<sup>2</sup> He further believed that after amalgamating various local groups, each having its own tutelary deity, an Indian divinity was installed on the peak of a mountain, natural or artificial at the time of founding a new kingdom. The new divinity was treated as the national god, the king



having very close associations with him.<sup>3</sup> In Fu-nan, the first state of Khmer empire, the existence of such a holy mountain is very well known. Regular offerings to god Mahesvara as a custom of the country has been clearly mentioned in the History of the Southern T'sis. In the following period the kingdom of Chenla or Kambuja had *Linga-parvata* as the sacred mountain. Both Nilakantha Sastry and Coedes, however, are silent on the issue of deification of the king. The titles of *Parvata-bhupala*, *Sailaraja* etc., borne by the monarchs of Fu-nan do not in any way mean that the institution of kingship was deified. In view of the physical features of the country it is much more plausible that the above-mentioned titles meant nothing beyond the lord of a hilly country.

Sources of information for the following period of Chenla or pre-Angkorean era are extremely scarce. A fundamental change in the institution of kingship, however, can be clearly gleaned after the political and cultural ideas from India permeating the country gathered momentum during Gupta and post-Gupta times. Kings having resemblance with gods do find a reference in the inscriptions of Chenla period, but it is not at all certain if the statement meant anything beyond physical resemblance i.e., beautiful. The conception moves a step further with the inscription of Isanavarman I (600-635 A.D.), as which described Rudravaraman (517-539 A.D.) possessing the valour and gallantry of the god, who covered the entire universe under his three strides i.e., *trivikrama* Vishnu.<sup>4</sup> Isanavarman I called himself as equivalent to god Vishnu in the words *raja vishnur ivaparah*.<sup>5</sup> Being equivalent to god Vishnu does not necessarily betray the deification of the king or his identification with the lord. Hence, it cannot be established that the Khmer panegyrist was conversant with the Indian theory of identity of the mortal king with Vishnu. Ignorance regarding the Indian theory is further confirmed by the eight armed image of Vishnu from Phnom-Da which has been identified by P. Dupont with *Harikambujendra*, mentioned in a late inscription from the same place.<sup>6</sup> K. Bhattacharya explained the significance of the term *Harikambujendra*, thus, "In fact, the term *Kambujendra* applied to Vishnu (Hari) clearly shows that this god was believed to be the 'Lord of the Kambujas' (inhabitants of Kambujadesa=Cambodia) or



what amounts to the same thing, that the king of the Kambujas was identified with Vishnu. This supposition is wholly borne out by what we know of Divine Kingship in India and Cambodia.”<sup>7</sup> There may not be any serious problem in admitting that Hari was treated as the lord (Indra) of the people of Kambuja, but it does not lead to the firm conviction that all the kings of Kambuja were identical with Hari. It is rather much more tempting to believe that the term ‘Harikambujendra’ carried with it the meaning of the lord of that part of the country, which was filled with water i.e., Chenla (Water of the Chinese). The eight-armed Vishnu in that case will be nothing more than the guardian deity of only one particular area of the Kambuja country. Again, with the interpretation it can not be proclaimed that the king was deified. Harikambujendra may be an expression of early hybrid Sanskrit-Khmer compound form meaning either ‘Hari of the lord of Kambuja or Hari of Kambuja who is Indra’.

Jayavarman I (circa 657-674), the king of Kambuja, for the first time claims to have been the incarnation of Indra with the words “*saksat sahasrakas*”.<sup>8</sup> A comparison of the king of Kambuja with Indra is also found in another inscription in the expression ‘*Sakratulya*’.<sup>9</sup> One of the kings of Kampuchea is supposed to have excelled the prowess of Indra as recalled by the expression *nirjita-S’akravikramah*.<sup>10</sup> In ancient Indian literature, particularly the great epic *Mahabharata*, Lord Indra has been depicted as the king of the universe, thereby deifying the status of a king. Further, there is a clear-cut reference in the same epic to treat the king not as a human being but as a god.<sup>11</sup>

The above-noted occasional references in Kampuchea, however, cannot be treated as an unwarranted evidence of the identity of the king with god. With the exercise of the same functions as that of Indra, the king of the universe, the conception of the resemblance with Indra can be accepted at best without the least hesitation. The posthumous title of *Srindraloka* borne by Jayavarman II makes it abundantly clear that in pre-Angkorean days the kings considered themselves more as having received special favour of Indra rather than the manifestation of the god. Had the king been a manifestation of Indra, the question of having united with him after death would not



have arisen. The kings in human form occupied different positions in different inscriptions *vis-a-vis* Lord Siva.

Standing on the platform of the facts given above, it can be categorically stated that though the divinity of kings was not completely unknown in the pre-Angkorean period, the emphasis was much more on the similarity of the functions of the god Indra and the king himself. It was only on this account that the king considered himself to be a favourite of the gods combined with the privilege of uniting with them after death.

During the early Angkorean period there is no basic change in the conception of the institution of kingship, because again an emphasis is laid on the human origin of the king. The kings are compared with Prthu and Manu. Lord Vishnu is said to have entered the body of Prthu at the time of his birth by means of his ascetic power as depicted in *Mahabharata*. Hence, Prthu was endowed with the prowess of Vishnu, but at the same time he continued to be a mortal king. The title of Prthu was borne by the father of Indravarman as evident from the expression '*Prthivindravarman*' used in the inscription of Prah Bat.<sup>12</sup> In a similar manner Manu was the first man on earth according to Vedic Aryans. The anecdotes in *Mahabharata* (XII. 67.2-31) state that though Manu was nominated by Brahma to rule over the earth, it is not mentioned that he was a god. It is, therefore, evident that during the whole of Angkorean period the conception regarding the comparison of the king with various gods like Indra, Vishnu, Brahma, Prajapati, Surya etc., and above all Siva had an upper hand, though of course, isolated references of complete identity of the king with god do exist in pre-Angkorean inscriptions.

A fundamental change in the position of the king was introduced in the following Angkorean period. In contrast to the isolated references in pre-Angkorean epigraphy, the identity of the king with god can be noticed in a large number of cases. The kings are said to be the incarnations or earthly manifestations of Indra, Vishnu, Brahma-Prajapati or Siva. In ancient Kampuchea the greatest importance was attached to the identity of the king with Siva, who occupied the position of king of gods in the ancient literature of India. This position of supreme importance amongst gods was accorded to Siva in



Kampuchean epigraphy as well. Jayavarman II (802-869 A.D.) received the title of 'Paramesvara' posthumously, which means Siva.

The theory of divine kingship has no apparent reference in the Vedic literature, though allusion to it cannot be ruled out completely. In Aitreya Brahmana (VIII, 12-14) we come across Prajapati and other gods, who performed the ceremony of the consecration of Indra. Indra is again said to have been made as king of gods by Prajapati in Taittiriya Brahmana II (2.10.4). In the great epic *Mahabharata* there are a large number of instances, where Indra has been called a *Devaraja* i.e., god king. So far as divine kingship in Kampuchea is concerned, the earliest attempt at the cult of *Devaraja* seems to have been made in the inscriptions of Preah Ko and Bakon in the following words:

*“yenabhisikto vidhina mahendras  
svayambhuvaropitadevrajyah  
tenabhiseka(m) gunavananekam  
yas srindravarmapad avaryyaviryyah”*<sup>13</sup>

The idea of a ritual, similar to that by which Svayambhu honoured Indra with the kingdom of gods, finds its manifestation in the above-mentioned verse to consecrate king Indravarman, who has been compared with Indra, the king of gods. In a like manner, the territory under the control of Indravarman finds a parallel in the kingdom of gods. The stanza quoted above, however, does not spell out the conception of a divine king completely, since it is devoid of any reference to mountain Mahendra, where king Jayavarman II instituted the cult of *Devaraja*. Divinity of king is far more pronounced in the inscriptions of Yasovarman (889-908 A.D.) and Rajendravarman (944-968 A.D.). They have been honoured with the title of *Mahendropendravikrama* i.e., wielding the valour and gallantry of Mahendra (Indra) and Upendra (Krishna-Vishnu).<sup>14</sup> Rajendravarman having received consecration from Mahendra has been unequivocally stated in the inscription at Pre Rup in which he stands identified with Krishna-Vishnu (*“Mahendrato labdhamahabhisekam raraja Saureriva yasya valyam”*).<sup>15</sup> These references also do not visualize anything more than the incarnation of Vishnu. Divinity of king assumed its full form



only at a later stage in the text of Kapilapura inscription of Jayavarman V (968-1001 A.D.). According to the inscription Lord Siva and Vishnu came down to earth in the form of a king at the behest of Lord Brahma when the world was subjected to great pain and suffering on account of the activities and sins of a very low order committed during *Kaliyuga* (i.e. days of great adversities). The inscription reads as follows:

“*prapte kalau kila kalankakalakalapa  
lidhanjagad duritakarivipad vivrddha  
tabhanjanat kajabhavo bhuvi rajabhuyam  
avas smavatarayati dhurjati-pankajaksau*”<sup>16</sup>

Jayavarman V should, therefore, be treated as the first king in whom the divine status was vested. Against this background only a number of kings both preceding and succeeding Jayavarman V were described as Siva and Vishnu simultaneously. The conception of complete divinity of kings is something foreign to Indian literature and epigraphy. Indications of the divinity of kings are no doubt available in inscriptions of central and south India, but they cannot be said to be a prototype from which the theory evolved e.g., Pulakesin II, the Chalukya king is called *Prithvivallabha* in the inscription at Aihole. Similarly, the title of *Prithvivallabha* is given to Rashtrakuta king Dantidurga in the Samangadh inscription. Before the downfall of the Khmer civilization the theory of the divine origin of the kings appears to have reached its highest altitude in the last outburst of glory during the regime of Jayavarman VII (1181-1190 A.D.), who was the manifestation of the Brahmanical trinity i.e., Brahma, Vishnu and Siva simultaneously in the inscription at Prasat Tor.<sup>17</sup>

Though there is hardly any reference in Indian epigraphy, where the king assumed the divine form of Siva, Vishnu or Brahma, the historians believe that the Khmer kings borrowed the concept of the divinity of kings from India against the background of Indra. The title of *Prithvivallabha* assumed by Pulakesin II and Dantidurga can in no case be compared with Siva, Vishnu or Brahma. In addition, there was a fundamental difference in the basic conception between the two countries. In India the functions of the kings were considered as



divinely, whereas in Kampuchea the personality of the king itself gradually acquired greater importance and the king as a person was treated as a god. This is abundantly clear by the cult of *Devaraja* which finds a reference in a large number of inscriptions in Kampuchea.

With the establishment of his identity (or in certain cases even superiority) with the gods, the king was endowed with great powers, both political and religious. The cult of *Devaraja* made it easy for the kings in ancient Kampuchea to act freely like an absolute despot without anybody to question.

### *Temples of Devaraja*

A group of scholars like Coedes,<sup>18</sup> Stern,<sup>19</sup> and Filliozat<sup>20</sup> are of the opinion that the cult of *Devaraja/Kamraten Jagat ta Raja* was closely associated with the temple-mountain in the form of Mount Meru considered to be the ideal centre of universe. Summing up his views Coedes expressed, "Once again I repeat what in the Angkorian epoch characterized the royal *linga* is its installation upon a pyramid, upon a temple-mountain, symbolic representation of the mountain residence of Siva. It is remarkable that this architectural innovation coincides with the institution of the cult of *Devaraja* on the small hill of Mahendra where is, besides, observed the first and still timid, faltering attempt at the construction of a terraced temple".<sup>21</sup> There is hardly any justification in the conclusion drawn by Coedes, because temple-mountain and the cult of *Devaraja* were not interlinked or related with one another. Temples of *Devaraja* in several cases were not located on any hill, either natural or man-made. Similarly, a number of temple-mountains had no association with the cult of *Devaraja*. In the list of temple-mountains prepared by Coedes there are only six which could be said to have been consecrated to the *linga* of *Devaraja* between ninth to eleventh centuries A.D. Of course, the temple of Angkor Wat could be a Vaishnava version of *Devaraja* during the lifetime of Suryavarman II, which after his death turned into his mausoleum. In a like manner the Bayon temple could be treated as a temple of *Buddharaja*, the Buddhist counterpart of *Devaraja*. The association of five temples, at least, with *Devaraja* still remains to be established.



Instances of temple on mountain-top without having anything to do with the cult of *Devaraja* have also been observed in Kampuchea. They are Prasat Damrei, built by Jayavarman IV (928-941 A.D.) for spiritual advantage of his elder brother, Rajendravarman; Banteay Chamar at the foot of Dangrek mountains erected by Jayavarman VII in memory of his martyr son Indrakumara, who was killed in battle against Cham. Stern has made an attempt to associate them with the cult of *Devaraja* by the explanation that these people would have gained the privilege of ruling the country if they had remained alive.<sup>22</sup> The argument of Stern cannot be accepted, particularly in view of the fact that the practice of building temples on mountain-tops for worshipping ancestors was not prevalent. He, on his own, has drawn a distinction between the temple-mountain for *Devaraja* and those constructed for ancestor-worship on the surface level.

Though in the initial stages the conception of temple-mountain carried with it the significance of cosmic influence, the same was forgotten before long and replaced by the architecture of the temple in a terraced-pyramid form recalling the idea of a mountain. This is the only explanation which can be offered for the extremely limited number of temples in the period following the death of Rajendravarman in the last part of tenth century, which did not display the feature of terraced temple.

The principle underlying the cult of *Devaraja/Kamraten Jagat ta Raja* was the divinely watch over the king and the State as made evident by the inscription of Sdok Kak Thom of Udayadityavarman II. The kings, therefore, did not identify themselves with god in the early stages. They were simply conferred with the title of god posthumously signifying that on death they united with god of their choice. It was only with the contention of watch over the sovereign state that the kings could not afford to loose time in construction of a temple of *Devaraja* soon after their consecration. Structures for other purposes followed in due course. The practice of conferring titles of god posthumously started with Jayavarman II who initiated the cult of *Devaraja*, which continued till the reign of Suryavarman I, when a fundamental change was brought about in the concept of divine king. With Suryavarman I the practice of posthumous names accorded to



kings came to an end and the personality of the king itself was taken as a manifestation of god while living and ruling the sovereign state.

During the regime of king Rajendravarman (944-968 A.D.) two temples were enshrined with *lingas* according to his inscription at Pre Rup. One of them was known as Rajendrabhadresvara and the other Rajendravarmesvara, the former a visual representation of *Devaraja*, whereas the latter containing the essence of the king. Of course, the construction of two temples with marginal difference in the idea behind them is a matter of great surprise to scholars; it can be explained by the assumption of the theory of shifting from the functions of the king as divinely to his deification. During the course of this process the reign of Rajendravarman was an intermediary stage.

Various objectives have been assigned by scholars to the institution of the cult of *Devaraja*. Jayavarman II, no doubt, achieved independence of the country from Java in 802 itself, the cult was introduced only in 822 A.D. i.e., after a lapse of twenty years. Hence, the belief that it was initiated to symbolize the liberation of Cambodia cannot be supported. R.K. Choudhari, without any basis, made a ridiculous statement that the objective of the cult of *Devaraja* was to represent the Ksatriya-Brahmana alliance to exploit the people of Cambodia in the name of god.<sup>23</sup> Following the footsteps of his master L. Finot, Coedes made a categorical statement and said, "The institution of the cult of *Devaraja* had then for objective the independence of the country and its unification under the authority of a universal monarch, the absolute master of the soil. It is therefore an enterprise to achieve territorial centralization and in fact the character of Angkorian royalty became imperial."<sup>24</sup> With the above statement Coedes has mixed up two mutually independent issues. Dupont could clearly distinguish between the two i.e., (i) the performance of a rite by the Brahmans with the specific objective of liberating Cambodia from the hands of Java for ever, and (ii) the installation of *Devaraja* on the top of Mount Mahendra. Indeed, it appears strange that Coedes missed the point, particularly when he himself has referred to the first ceremony in the words "various ceremonies of different nature were celebrated in different places by order of Jayavarman II".<sup>25</sup> He is further of the opinion that the ceremony of the Mount Mahendra happened to be



the last of the series. Had there been any connection between the independence of the country and the cult of *Devaraja* the latter institution would hardly have remained in existence during the reign of the kings following Jayavarman II. The case, however, is entirely different. The institution of *Devaraja* initiated by Jayavarman II gradually acquired greater importance, and flourished. In the earlier stages the cult of *Devaraja* was a symbol of the sovereignty of the state under the watchful guidance of the god with whom the king united after death. At a later stage the institution of kingship was made sacrosanct and the king turned to be a manifestation of god. The idea behind the latter concept was to justify all actions of the king in the form of a royal despot.

In the eyes of Filliozat the idea of the cult *Devaraja* was borrowed from India simply as a manifestation of Siva as the king of gods.<sup>26</sup> There is, however, hardly any basis to accept that the concept was wholly Indian, because not a single evidence, either epigraphical or archaeological, has been brought to light in India, (south India in particular) to uphold the view. The conception in a primitive form did exist in the legend of the king of the Nagas who gave his daughter in marriage to Kambu Svayambhuva. It is worthwhile to note in this connection that Naga continued to be an important piece of sculpture in the entire architectural history of Kampuchea. It appears to be much more plausible to suppose that a substratum or an essence of the concept of *Devaraja* was already present in Cambodia. With an inspiration from the immigrant Indian culture it developed and flourished as the most important institution in the history of ancient Kampuchea. In this context the remark of Coedes is very pertinent. He commented, “. . . . . even in case where India is sufficient to explain this religious conception or that architectural achievement of the ancient Khmers, it is no less true that the pre-Indian atavism gave to this a certain local colour and conditioned the sense of evolution.”<sup>27</sup>

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## The Temple of Angkor Wat

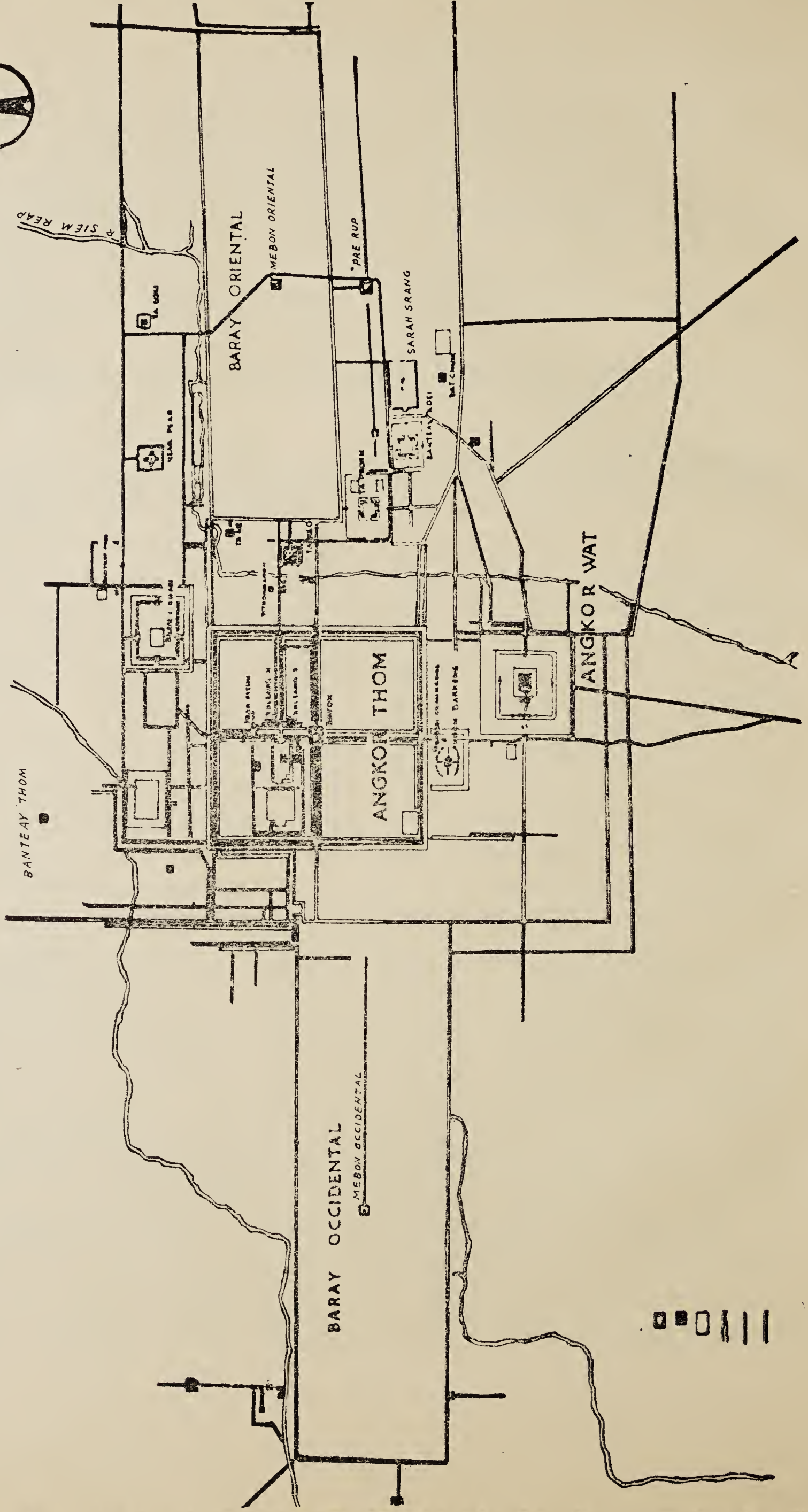
THE well conceived, noble and graceful buildings of Kampuchea constructed during the eleventh and twelfth centuries A.D. are the testimony of the great creative faculties of the people in the field of art and architecture. They spell out clearly that the genius of the Khmer Civilization reached the zenith of its glory during this period. Of the large number of monuments, each distinctive of its own, the temple of Angkor Wat can be easily picked up as the most precious gem of the Khmer art with which the Angkor region is studded.

The great temple-mountain of Angkor Wat was built at a place south-east of the crowded city of Yashodharapura, where a sufficiently vast area to erect an edifice worthy of the great king Suryavarman II was available. In its proportions, both in space and height, the greatest temple in the world can be considered as a masterpiece of architecture. Angkor Wat is triple-terraced rectangular mountain, remarkable in plan, surrounded by galleries and cruciform courts and surmounted by the five towers looking like peaks. The five central towers of the temple represent symbolically the five peaks of Mount Meru, the abode of the gods and the extensive moat all around the waters of the ocean. The accurate sense of proportion can be observed in the height of the rising terraces. The first terrace rises to a height of 3.20 metres from the ground level and the second is 6.40 metres higher than the first followed by the third to a further height of 12.80 metres.

Praising the harmonious blending of architecture and the rich ornamentation in the temple MacDonald has aptly said, "It combines a glorious mixture of qualities. It sprawls spaciously, and yet its overall proportions are perfect, there is a suggestion of austerity about its



# SITE PLAN OF ANGKOR WAT



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simple, massive design, but the details of its decoration are in places riotously lovely, and the contrast between its wide, smooth, grassy enclosures and its acres of sculptured masonry is almost theatrical".<sup>1</sup>

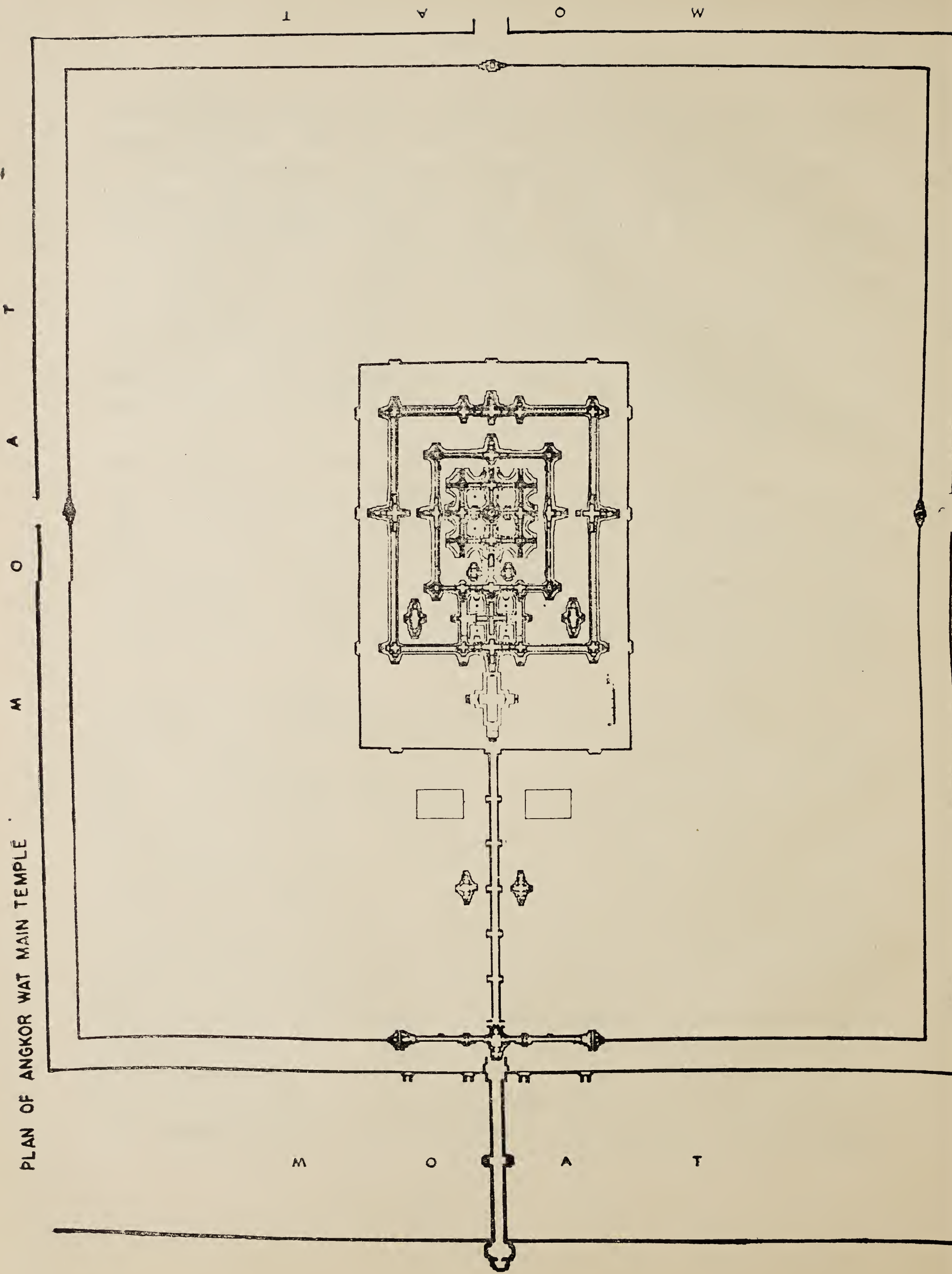
Artists chiselled virtually the entire surface of the temple of Angkor Wat with decoration. Some areas bear only a light over-all design, the tracery of which is so delicate that a man has almost to feel it with his hands to know that it is there. Floral, human and animal depiction incorporated in the traceries are so minute that one has to stare at them to observe their presence. Elsewhere the decoration bursts forth with lively vigour. *Devatas* (gods), *apsaras* and other heavenly beings singly, in pairs and in whole bevvies seem ready to step into life from walls and pillars.

An extensive moat about 200 metres wide encloses the entire temple complex covering an area of roughly one square kilometre. On both the sides of the moat all around, embankment in the form of steps was provided. It is said that these steps enabled the people of the neighbouring villages as well as those living inside the monument to make a good use of the water of the moat. In addition, the moat also added a special attraction and grandeur to the temple with its reflections in the water.

A stone causeway 11.60 metres wide and 200 metres long on the western side leads to an imposing gateway. Angkor Wat is an exception amongst all the temples of Khmer Empire for its orientation towards west, while the rest face the east. The visitor is greeted at the steps to the causeway by crouching lions. The stone causeway paved with sandstone slabs, is flanked on both sides with balustrades crowned by *nagas* at regular intervals. The imposing gateway in the form of an entrance pavilion is extended on the north and south by a vaulted gallery surmounted in the middle stretches by three towers. The vaulted gallery is supported on the inside on a solid wall and outside on square pillars. In front of the vaulted gallery there is a lower semi-vaulted gallery again supported on square pillars, smaller in size. Besides the main entrance, two of them at the extreme ends there are four more to provide access to the processions and elephants. This is the fourth enclosure of the temple and is extended further beyond the two side entrances by a high and thick compound wall made exclusively of laterite blocks. The



PLAN OF ANGKOR WAT MAIN TEMPLE



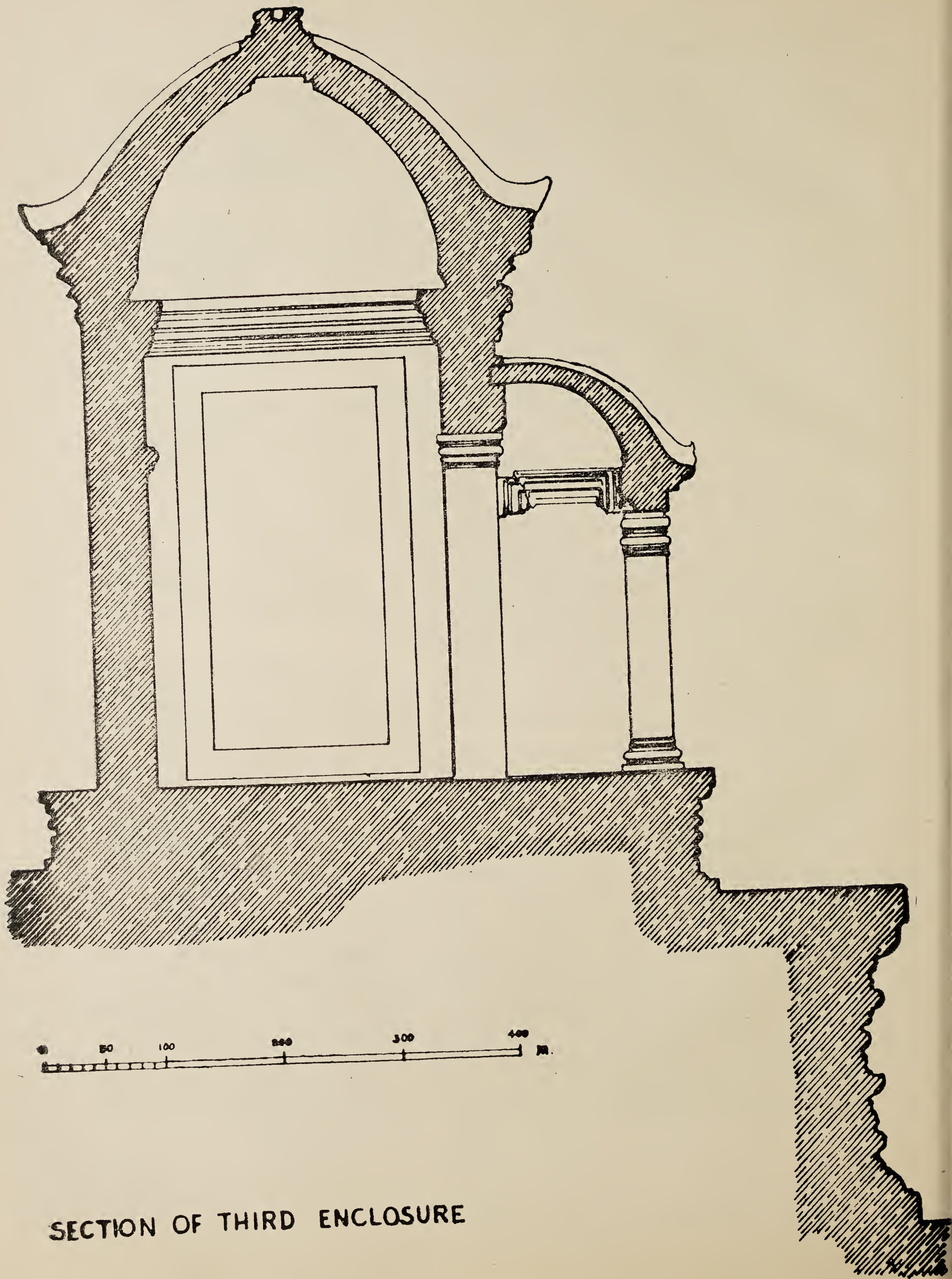
facade of the only entrance on the western side is 210 metres long. Provision of three replicas of entrance on three sides of the sanctum had been a characteristic feature of the Khmer temples and on the same lines three gateways in the centre of each cardinal direction of the laterite compound wall were in no way functional.

A vast outer courtyard is enclosed within the main entrance and the compound wall. The sacred area of the temple is approached by yet another causeway narrower but longer than the first causeway. It is 360 metres long and 8 metres wide. It is again paved with sandstone slabs and flanked on either side by balustrades and *nagas* on projection on both sides at regular intervals.

In the centre of the causeway on either side at a distance there are two free standing structures known as library. Further beyond there are two artificial ponds. A flight of steps from the causeway provides access to the library building. The causeway is joined at the end by a broad raised cruciform platform known as Esplanade and said to have been used in ancient times for dance festivals. The plinth of the cruciform platform is supported on circular fluted pillars. All around the cruciform there is a raised balustrade similar to the causeway with crouching lions and *nagas* gracing the entrances.

The cruciform platform provides an access to the third enclosure of the terraced temple in the form of a spacious gallery all around. It is covered by a vaulted and semi-vaulted ceiling on the same pattern as the fourth enclosure. The third enclosure is further enclosed within an open courtyard formed by balustrades all around pierced by three raised entrances on each side graced by *nagas* on either side. The sculptors, however, displayed their masterly skill in the most ambitious work of carving the solid walls all around richly with bas reliefs. They depict a variety of subjects like the eternal battles between gods and demons, spear-hunting warriors on chariots driven by horses and clawing monkeys. The theme of these dramatic scenes is drawn from Indian holy texts and the ancient classic epics, *Ramayana* and *Mahabharata*, which the king Suryavarman II might have chosen as symbols of his own life and deification. In the south eastern gallery the gods and the demons are shown trying their strength at the multiple-headed *naga*, churning the sea thereby for bringing out the *amrita*. In another panel,





SECTION OF THIRD ENCLOSURE



Day of Judgment, the saintly figures rise to occupy exalted pavilions. The evils are driven into thirty two hells to such tortures as having their bones broken, being thrust into boiling pots, pinioned on racks, or cast to wild beasts. Of all, the most important in the bas-reliefs are the two portraits of Suryavarman II. One shows him seated on the throne, shaded by umbrella and fan, in audience with his ministers. Farther along, he rides with his war-lords and troops in ceremonial parade. His royal chaplain accompanies the retinue along with attendants bearing the arc of sacred flame. An orchestra blows horns and conches, beats drums and gongs. Buffoons covert.

Bas reliefs covering such an extensive area as  $177.65 \times 212$  metres are unparalleled in the world. The length of the peripheral gallery on the north-south axis is much more than that of the west-east. Besides the three entrances (one main and two smaller) on the western and eastern sides, there is one entrance in the centre of the cardinal directions, north and south, in addition to the cruciform pavilions at each and every corner.

Moving further east through the central (main) entrance on the western side, a cruciform courtyard said to be the highest achievement of Angkor architecture, is encountered. In each corner of the cruciform plan a tank has been provided for the purpose of ablutions. In the centre of the arms running east-west on both sides enclosing the courtyard there is an entrance. Facing the entrance on either side there are two structures with very high plinths. They are again called as library buildings. They are smaller in dimensions than the first two libraries.

The cruciform courtyard provides access to the second enclosure with the help of three galleries, one in the centre and one each on either side. But for the bas-reliefs on the walls, the nature and plan of construction of the second enclosure is similar to the third enclosure. The second enclosure is 6.40 metres higher than the third and is surmounted by a tower at each of the four corners. Immediately behind the second enclosure on the eastern side, there are another two free standing structures, one each on the north and the south. Much smaller in size than the earlier ones, they are also called as library



buildings. The second enclosure is 122.7 (E.W.) $\times$ 103.4 (N.S.) metres in dimension.

The access to the first enclosure from the second one is altogether on a different pattern. Instead of three galleries leading to the next enclosure there is only one in the centre of the two library buildings. The projections on either side of the gallery again present a cruciform plan. Balustrades flank either side of the cruciform causeway.

The first enclosure is designed on the same pattern of a courtyard divided into four with the help of galleries as observed in the lower enclosure. The tanks provided on the four corners were again meant for ablutions. A special feature of the first enclosure is its square plan instead of rectangular followed in other enclosures.

The central gallery of the cruciform complex leads to the steep steps rising to a height of 12.80 metres to reach the main sanctum. The four corners of the first enclosure, in the same form of a gallery all around, are surmounted by a tower about 55 metres in height. A lofty tower about 64 metres in height from the ground level covers the main shrine. This sky scraping tower in combination with the four towers on the corners of the lower terrace presents a beautiful symmetrical view. The multiplication of elements of the tower profiles is on such a massive scale that the temple appears superhumanly.

The main shrine is again built on a cruciform style, one arm on each side extending in the form of a gallery connecting the outer gallery. An image of Vishnu must have been there in the main shrine, but the same has disappeared and replaced on the four sides by standing images of Buddha in a completely unknown *mudra*. The right hand is raised against the chest with the palm resting at right angles. It is evident from these as well as other thousand Buddhas on the lower terrace that the temple was converted into a Buddhist shrine at a later stage. In the beginning it was dedicated to Vishnu with which Suryavarman II identified himself as god-king. The temple thus stands as Suryavarman II's magnificent effort to honour his god and at the same time honour himself.

The bas-reliefs and other dancing figures in various styles are no doubt a special achievement of the Angkor Wat temple, but a large number of *apsaras* (celestial nymphs) in different moods and

expressions at every nook and corner of the temple occupy the most important position. Heavily decked with ornaments and rich hair dresses, the expression of each and every *apsara* is individual to her own. They all appear to dress and decorate themselves in the best possible and unique manner, vying with each other, and standing in such a pose as if trying to steal a march over others in catching the attention of the divinely king.

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## Apsaras at Angkor Wat in Indian Context

ART in every part of the world has developed under the patronage of kings, and Kampuchea is no exception. Besides dealing with various religious and secular subjects, the artists also included life in the courts, and the depiction of many *apsaras* at Angkor Wat brings out a very important part of the life of the king. The masterly creation of artistic expression reached its zenith in the carving of *apsaras* at the temple of Angkor Wat. Application of the term 'institution' to *apsaras* at Angkor Wat will not be inappropriate if one takes into account the number occupying each and every part of the massive temple. A visitor is simply spell-bound by the variety of head-dresses, facial expressions and the flowing drapery covering only a part of the body. The realization of exquisite feminine beauty in sculpture not only enchants the mind, but also speaks of the penetrating comprehension of the artists, so much so that they could generate life in stone. The *apsaras* in their representation here appear full of youth and life in their fascinating expressions.

According to Coomarswamy the whole of life is represented in all its multiplicity in classic Khmer art.<sup>1</sup> Besides the sculptured panels of mythological stories of ancient India, *Nagas*, *Garudas*, and multiple variety of floral designs, figures of *Dvarapala* (gate-keeper) and *apsaras* full of vigour and strength occupy an important place in the architecture of the temple. It has already been emphasised a number of times that the ancient Indian texts were a source of great inspiration to the kings and courts of Kampuchea. Like the mythological stories popular in India finding their expression in the art of Kampuchea, the origin of the concept of *apsaras* is also rooted in the annals of Indian traditions and beliefs



India is famous for being the land of great philosophers and saints. But, it would be fallacious to assume that the people of India were naive in other aspects of life. The inhabitants of India espoused the cause of material achievements and satisfaction of physical desires with equal zeal and interest. Presenting a rationalistic view on Indian culture Sri Aurobindo said, "Equally is it a misrepresentation to say that Indian culture denies all value to life, detached from terrestrial interests and insists on the unimportance of the life of the moment."<sup>2</sup> He further said, "The ancient civilization of India founded itself very expressly upon four human interests; first, desire and enjoyment, next, material, economic and other aims and needs of the mind and body, thirdly, ethical conduct and the right law of individual and social life, and lastly, spiritual liberation; *kama*, *artha*, *dharma*, *moksa*. The business of culture and social organisation was to lead, to satisfy, to support these things in man and to build some harmony of the forms and motives. Except in very rare cases the satisfaction of the three mundane objects must run before the other; fullness of life must precede the surpassing of life"<sup>3</sup>.

In Vedanta philosophy *dharma*, *artha* and *kama* are known as the triad pursuits by the human beings on the path of liberation. *Dharma* leads to *paramartha*, essential for salvation and as such a man must possess adequate knowledge of it. The study of *artha* (to earn livelihood) makes a man conversant with various means to earn money. In order to rise above the slavery of sex a man has to study the science and psychology of sex. In the absence of contentment in life, salvation or *moksa* cannot be achieved. The first battle-field for contentment is the family life and satisfaction of sex. A man can expect satisfaction of sex leading to peace and tranquility only when he is armed with the knowledge of the science and psychology of sex. According to the principles inherent in spirituality a man cannot be perfect without a female and vice versa. It is, therefore, natural both for a man and a woman to be constantly subjugated by the urge of meeting each other. In the light of the above-mentioned beliefs the life of a man in India, according to treatises, was divided into four parts. They were *brahmacharya*, *grihast*, *vanaprast* and *sanyas*. Sexual desires were always treated as one of the most important instincts of life and as such their



satisfaction was regarded as essential as any other duty in life. Gratification of sex was never detested. Gods and goddesses were prone to enjoyment of sex as much as the common human mortal. Love as *kama* has been identified as the first seed of the cosmic mind in the hymns of the seers incorporated in the *Rigveda* and as such deified. The same attitude to sex in life finds a clear-cut expression in the *Brihat-samhita* in the following words: "The entire universe, right from the creator (*Hiranyagarbha*) to the smallest worm, is born of the union of male and female. So why should anybody feel ashamed of it, when even the Lord Siva was forced to have four faces on account of His longing to have a look at a maiden (74/20)".<sup>4</sup>

The above story refers to an incident in which the celestial courtesan (*apsara*) Tilottama was perambulating the Lord Siva and Parvati was sitting in his lap. The lord was so much captivated by the charming personality of the *apsara* that he developed a desire to have a full glimpse of her. The Lord at the same time did not dare to annoy his spouse Parvati on being detected. He, therefore, assumed four faces to have a look at the damsel's beauty.

This is not the only instance in which the disposition of a god towards sex is reflected. The ancient literature of India is replete with regular examples of gods and kings being enamoured of the beauty of *apsaras*. The multiplicity of references to sex, both in literature and art, makes it evident that the people of India had no inhibition towards sex. On the other hand, it was accepted as a natural urge of life. *Kama* (sexual desire), as a matter of fact, has been glorified in many ancient texts of India right from the beginning.

The act of creation was another consideration on account of which the people of India were not averse to sex. The union of male and female was given a symbolic representation of the Divine Unity of *Purusha* and *Prakriti* as Siva and *Sakti*. Like *Purusha* and *Prakriti* the sexual union was also symbolized as the union of *Atman* and *Brahman*. With the same conception in mind Devangana Desai stated, "The apparent contradiction of temple art with Hindu cultural goals is resolved when we see that alongwith the lofty ideals of *tapas* (austerity), *vairagya* (detachment) and *sannyas* (renunciation), Hinduism also retains beliefs and practices connected with fertility and vegetation



cults. Sexual depiction in religious art derives its inspiration not from the philosophical symbolism of highly evolved thought systems, but from those religious beliefs and practices which reveal the primal connection between sex and religion.”<sup>5</sup>

Religion in India did not remain unaffected by magic. A combination of both was also there in the background of free portrayal of sex on the ancient temples and monuments. While concluding her study of erotic sculptures in India Devangana Desai said, “We have seen that two basic factors in Indian culture are germane to the portrayal of sex in art. These are the magico-religious aspects of sex, which is the *raison d’etre* for the existence of sexual depiction in religious art, and the worldly interest in sex, which leads to the secularization and sensualization of the originally sacred nature of sexual depiction.”<sup>6</sup>

In the socio-religious systems of India the behaviour of the common man found its expression in the gods and goddesses. They were never detached from those who worshipped them. The activities of the gods and goddesses were not restricted only to those of a transcendental nature. They freely indulged in worldly pursuits like love, hate, quarrel, cheating and above all satisfying their sexual urge.

Mythological stories incorporated in the Vedic texts considered to be the oldest in Indian literature are flooded with postulations on the existence of a number of divine beings, who were supposed to hold control over various phenomena of nature. With nature they also ruled over the destiny of mankind. Dependence on divine beings ruling over the natural phenomena of Universe had its special groundings in the gradual development of society. When the early Aryans developed the idea of a settled economy, after casting off their nomadic propensities and introduced agriculture, they had naturally to look forward to favourable rains as also protection from draught, inundation etc. These natural forces were beyond their control and as such the existence of supreme being possessing mysterious powers was conceived. Possession of such powers culminated into the belief of the existence of a community of supernatural beings, better known as *Devas*. Indra, the god of the sun, rain and clouds, was considered as the chief among them, because he controlled the three fundamental necessities of the



agrarian Aryans. All along the period represented by the Vedas, Indra continued to be the supreme god. He was the overlord of the primitive heaven, where he enjoyed life in the midst of celestial nymphs, well known as *apsaras*, accompanied by all conceivable luxuries. Indra is said to preside over celestial troops stationed on the Golden Mount Meru, where he amuses the gods with nectar and heavenly music. Amaravati is the celestial city, where he resides in palace, and rules. The celestial dancing girls, *apsaras*, keep him in good cheers inside the palace. According to the Vedas the instinct of lust is the first outflow of the act of creation. All actions have their root in that very instinct. It is only on this account that Kamadeva, the god of love is venerated amongst the Hindus. The god Kamadeva has parrot as his vehicle and he is attended by *apsaras* or heavenly nymphs of great beauty over whom he rules.

In addition to being the overlord of the primitive heaven, Indra was also an intrepid warrior and shrewd politician. With such characteristics he was incorrigibly lewd and always desirous of sensuous pleasures. The greatest trophies of his victories were the *apsaras* with whom he could sport and spend his leisurely hours in an atmosphere of hilarity. It is said that *rishis* and kings also were captivated by the beauty of the *apsaras* when they visited the abode of Indra, the *svarga*, and expressed their desire to possess them for some time.

Human beings have always been captured with the desire to achieve and lead a particular set of life which is full of all comforts. Against this backdrop the existence of heaven (*svarga*) has been postulated. Those aspiring to enjoy life in heaven are conscious enough to indulge only in pious deeds, whereas others do not care to distinguish between desirable and undesirable actions.

In all there are five heavens of the Hindus to which the soul of the departed finds an entry according to his sectarian learnings and actions in life. They are (i) *svargaloka*, which is Indra's heaven. In that *loka* Indra is attended by troops of *apsaras*; (ii) *Kailasaloka* in the Himalayas which is the heaven of Siva. Lord Siva dwells there with his wife Parvati and his sons Ganesa and Karttikeya; (iii) *Vaikunthaloka*, the abode of Vishnu on Mount Meru; (iv) *Goloka*, Krishna's heaven;



and (v) *Brahmaloka*, which is Brahma's heaven, the ultimate goal of life.

Belief in immortality and enjoyment of pleasures in future existence by Aryans have been clearly spelt out in the *Rigveda* (ix. 113. 7 ff). E. Osborn Martin has quoted the translation of the concerned verses in the following words:

Place me, O purified (*Soma*) in that imperishable and unchanging world, where perpetual light and glory are found. Make me immortal (in the realm) where king Yama dwells, where the sanctuary of the sky exists and those great waters flow. Make me immortal in the third heaven, in the third sky, where action is unrestrained and the regions are luminous. Make me immortal in the world where there are pleasures and enjoyments in the sphere of the Sun—where ambrosia and satisfaction are found. Make me immortal in the world where are joys and delights and pleasures, and gratifications, where the objects of desire are attained.

Explaining enjoyments Martin further said, "that these pleasures were sensual ones is proved by many passages".<sup>7</sup>

The *apsaras* as embodiment of beauty possess every desirable physical attribute and have been well described as the instruments *par excellence* of divine dissipation. They do not excel in beauty alone, for their voices are said to be melodious and their remarks witty: and a knowledge of music and dancing matches their familiarity with the sweet capariciousness of love.

Conceived in their earliest form, right from the time of the *Rigveda* in India, the *apsaras* are popularly known as the celestial water nymphs and have been described in a much more elaborate manner in the *Atharvaveda*. The scholars were all along under the impression that the idea of *apsaras* as *Devapatni* or *Devastri* i.e. wives of gods was conceived for the first time in the great epic *Mahabharata* and *Puranas* only. Regarding the *Rigveda*, they believed that *apsaras* have been referred to only as the consorts of *Gandharvas*. A fresh study by the author has, however, revealed that *apsaras* were



treated as wives of gods in the *Rigveda* itself. The earliest reference to *apsaras* as wives of gods occurs in the text in connection with the birth of Pururvas. Urvasi said on the occasion, "As soon as he was born the wives of the gods surrounded him. . . . .". (10.95.7). The other context in which *apsaras* occur in the *Rigveda* is their association with the lover. "The *apsaras* smiling affectionately like a wife at her lover, cherishes him in the highest heaven; she wanders in the abode of her beloved; he Vena, being loved sits down on his golden wing". (10.123.5). Of the numerous forms in which the *apsaras* are depicted in the *Atharvaveda* their connection with the waters as the consorts of the *Gandharvas* is the most frequent. In addition to their relationship with the *Gandharvas*, the *apsaras* have also been treated in a number of instances as *Devapatni* or *Devastri* i.e. wives of gods (VI.118.3). The great epic *Mahabharata* is flooded with references to *apsaras*. They happened to be an essential part of life in the assemblies and courts of almost all gods. The assembly of a host of gods like Indra, Brahma, Varuna, Kubera etc., with *apsaras* as one of the most important constituents, finds a mention at many places (2.4.31; 2.7.21; 2.7.35; 2.9.23; 2.10.9; 2.10.10-13; 2.11.19; 3.43.32). While furnishing a description of the heavenly abode viz. *Priyapuri* under the overlordship of Indra, the names of many *apsaras*, who delighted Indra appear (3.44.29-30). The enchanting beauty of the *apsaras* has been vividly described by comparing various parts of the body with examples considered to be the ideals of beauty (3.44.31-32). Besides reference to the assembly of gods, they continued to be mentioned as *Devapatni* or *Devastri* in the great epic (12.329.22). The race of a particular set of *apsaras* was given birth to by Pradha through connections with celestial *Rishi* Kasyapa (1.59.47-49). As in earlier times the *apsaras* continued to be used by Lord Indra for seducing the sages engaged in severe penances and austerities (1.65.23).

Though the frequency with which the institution of *apsaras* appears in *Mahabharata* is reduced drastically in the other epic *Ramayana*, the position and function of the celestial nymphs remain one and the same. Like the court of Kubera in *Mahabharata*, the mansion of the god echoed with the soul-captivating music of the *apsaras* causing a strong sexual desire in Ravana. Added to it, Rambha, the



most beautiful of the *apsaras*, was also then wending her way to meet her lover Nalakubera (son of Kubera). *Bhagwata Purana* presents an attractive glimpse into the household life of Sri Krishna at Dwarka in verses 7 and 8 of Discourse LXIX. In that city there was the (most) splendid (richly furnished) rows of palaces of Lord Sri Krishna, admired by all the guardians of the world, in the construction of which Vishwakarma (the celestial architect) had exhibited all his (architectural) skill. The row was adorned with sixteen thousand (beautiful) mansions of Sri Krishna's consorts. *Apsaras* occupying a very important position in the heaven have been visualized in a beautiful manner in the *Svarga Khanda* of *Padmapurana*. They have been designated as the *Veshya* (prostitute) of the heaven i.e. *Svargaloka* in *Amarakosha*.<sup>8</sup>

Buddhist and Jaina literature, accepted to be much more sacred and orthodox, are not free from allusions to the existence of *apsaras*. Asvaghosa, who lived in about the first or second century A.D. and is considered to be the first great representative author of *Kavya* literature and a Buddhist philosopher, indirectly acknowledges the capacity of the *apsaras* to enchant and beguile. With the same conception he narrates in his *Buddha Charita* the story of the attempt by the daughters of Mara, the God of Evil, to tempt and seduce Siddhartha with dancing and other ravishment. In another work viz. *Saundaranand*, Asvaghosa sensitively portrays the ascent of this convert to heaven and his yearning for the *apsaras* who abound there. The Jatakas which are fables pertaining to the previous lives of the Buddha and written around third century B.C. carry occasional references to dancing. The Jaina canons compiled between the fourth century B.C. and the fifth century A.D. also provide interesting material on *apsaras*. Adinath also known as Rishabha, the earliest spiritual head of the Jains, apparently saw the performance of a dancing girl in Indra's court and this impressed him so much that he determined to find his way to heaven.

*Gatha Saptasati* in Prakrit composed by Hall in about third century A.D. incorporates beautiful expressions of the states of emotion of *nayaka*, and *nayika*, both of whom are overpowered by the overwhelming wave of sex. There was a complete lull in the depiction of sex in the following few centuries, so far as



literature is concerned. Fresh waves laying great emphasis on sex swept northern India again some time in the fifth-sixth centuries A.D. The dramas of Kalidasa are a very good illustration of the revival of the attitude towards sex. Of great literary merit, the works of the well-known poet are full of masterly observations on the emotions of love. Poets are noted always for their flight of imagination and Kalidasa excels in presenting the charms of the feminine beauty in an erotic style. As already mentioned, the gods, like men, were also keen to indulge in sexual pursuits. Kalidasa, therefore, did not hesitate in involving gods in sexual activities in his drama *Kumarasambhava*.

The literature on *kamasutra* continued to inspire the great poets of India to compose commendable works. The sportive activities of the ladies in the household of Krishna on the Raivataka mountain have been presented in a masterly manner by Magha. *Sisupalavadha* also abounds with delicate references to ladies. The height to which the imagination of a poet can fly have been depicted in *Maltimadhava* by Bhavabhuti when he describes the uncovered heavy breasts of the ladies. Sriharsa portrays in an adept manner the sports of Nala-Damyanti in his work known as *Naishadhiyacharita*. In addition to those mentioned above, there are many works in Indian literature incorporating the seductive charms of the ladies with their sensual physical limb and attractive sportive actions. Among them mention may be made of *Kiratarjuniya* by Bharavi, *Srikanthacharita* by Mankha, *Vikramanka-devacharita* by Bilhana, *Gandavaho* by Vakpati-*raja*, *Kumarapalacharita* by Hemchandra, *Neminirvana* by Vagbhatta etc.

It is very interesting to note that all the works mentioned above deal in one form or the other the sensuous life of king. Sexual life was not a taboo is revealed by the manner in which it has been freely depicted in the works. The authors of the works received patronage of the king and had there been any hatred for sex, they would have restrained themselves from bringing to light the private life of king so openly. On the other hand, they have portrayed the sex-life of the patron-king with great zeal and lively spirits in all their biographical works and *prasastis*.

Another institution like the *apsaras* which gained a great



popularity in ancient and medieval India was that of the *devadasis*. The literal meaning of *devadasi* is 'a servant (female) of god' but in fact she was well-known as a sacred woman meant for enjoyment. Like the *apsaras* the *devadasis* also could not be approached by the common man. They were attached to the temples to satisfy the carnal desires of personalities holding a higher position in society or those who indulged in righteous deeds. The *devadasis* were highly proficient in music and dancing. An Arab traveller Abu Zaid al Hasan, who visited India in 867 A.D., has furnished the following account of *devadasis*:

“In the Indies they have public women called Women of the idol, the origin of whose institution is such: when a woman has laid herself under a vow, that she may have children, if it happens that she brings forth a handsome daughter, she carries the child to the *Bod*, so they call the Idol they worship, and then leave her. When the girl has attained a proper age, she takes an apartment in this public place, and spreads a curtain before her door, and awaits the arrival of strangers as well Indians as men of other sects, to whom this debauchery is made lawful. She prostitutes herself at a certain rate, and delivers her gains into the hands of the Idol's priest, to be by him disposed of for the use and support of the temple.”<sup>9</sup>

The Hindu religion had a very deep impact on the social, cultural and religious life of the people of Kampuchea in ancient times. As in India, so in ancient Kampuchea, religion always served as the foundation on which the life of the people was built. The Hindu pantheon was well known and examples of Hindu gods in the innumerable forms and names by which they were known in India are found there.

India is a country where hero worship is common, and great men are soon deified. Amongst the gods, therefore, a king was also included, being venerated as a god right from the earliest times. The great epic *Mahabharata*, besides calling Lord Indra as *Devaraja* on a large number of occasions, provides a very good example of it. In reply to Yudhistira's question about the status of a king, Bhisma narrates an old story of the discourse of Vrihaspati, who said, “No one should



disregard the king by taking him for a man, for he is really a high divinity in human form (12.68.40). ‘The duties of all men, O then of great wisdom, may be seen to have their root in the king. He is a protector, and maintains everything in order.’

The concept of the king being a god continued its hold on Indian society for a very long time. Though the idea prevailed in the medieval period as well, it came to be deeply rooted during the fourth to seventh centuries when kings of the illustrious Gupta dynasty ruled in the northern parts of India. According to the panegyric verses in the inscription of Adityasena (seventh century) at Apsad (Gaya district, Bihar, India), the king Kumaragupta is said to have taken the form of Mount Mandara to churn the Ocean of Milk in order to acquire fortune. Thus the king was treated as the god Vishnu, there being no ambiguity in interpreting the term ‘acquired fortune’ as the spoils of war or ‘trophies of victory’.<sup>10</sup> The allusion in the verses is obviously to the Churning of Ocean of Milk by gods and demons for the recovery of the nectar and other precious things that had been lost.

In Hindu mythology there is hardly any story of greater importance than the Churning of the Ocean, culminating in the acquisition of *amrita*, the nectar of immortality. It is because of the prominent role played by the *apsaras* in that story that they are defined in the *Puranic Encyclopaedia* in the following terms:

“An *apsara* is a nymph (devastri). These *apsara* women were born at the Churning of the Ocean of Milk”.<sup>11</sup>

With minor variations in different texts the story of the Churning of the Ocean may be summarized as follows:

“The assembly of the divinities, troubled by the *Daityas* (giants or titans), approached Vishnu for help. Hari, the creator of the universe, smiled on receiving their prayers and spoke thus:

“With renewed energy, O gods, I will restore your strength. Do you act as I enjoin. Let all the gods, with the *asuras* (demons) cast all sorts of medicinal herbs into the sea of milk; then, taking the mountain Mandara for the churning stick and the serpent



Vasuki for the rope, churn the ocean together for ambrosia, depending upon my aid”.

From the ocean, thus churned by the gods and *danavas* (descendants of one of the daughters of Diti), first uprose the cow Surabhi, the fountain of milk and curds, worshipped by the divinities. Then appeared Varuni, the goddess of wine, her eyes rolling with intoxication, next the celestial Parijata tree, the delight of the *apsaras*, the nymphs of heaven, perfuming the world with its blossoms. The gods and demons then beheld the troop of *apsaras*, of surprising loveliness, endowed with beauty and with taste. The cool-rayed moon next arose, and was seized by Mahadeva (Siva); and then poison was engendered from the sea, of which the *nagas* (snake gods) took possession. Dhanvantri, doctor of the gods, robed in white, and bearing in his hand the cup of *amrita*, next came forth; beholding which the demon sons of Diti and Danu, as well as the sages (*munis*) that were filled with satisfaction and delight. Then seated on a full-blown lotus and holding a water-lily in her hand, Sri (Lakshmi, the goddess of fortune) radiant with beauty, rose from the sea.

The story added a new dimension to the development of the concept of *Devaraja* in ancient Kampuchea. While extending all protection to the subjects of his country, the kings considered them to be his own property. Besides the worldly power acquired by him as a representative of the god, he also possessed spiritual strength for emancipation. As a hero who conquers the self after a battle with the Ocean of Existence, the king in Kampuchea was compared with Vishnu who wins Sri from the Ocean of Milk. His campaigns against enemies were treated as a spiritual exercise for salvation. In the inscriptions of Kampuchea there was no difference between Sri acquired by Vishnu and the Sri which the king was able to obtain by the force of his yoga or spiritual power. According to the text of the Pre-Rup inscription the hero (king) wins the jewelled glory i.e. Sri from the stormy ocean of battle as in the exploits of Vishnu and so he deserves the title of Sri-Dhara which Vishnu himself holds, the conquest has been compared in the inscription at Baksei Camkron with the glittering fortune obtained by Vishnu when he churned the waters of the ocean



of milk using the mountain Mandara as the churning stick. In this context it may be recalled that Suryavarman II, the builder of the temple of Angkor Wat, always remained up on his feet in leading campaigns against his enemies all around and vanquishing them throughout the period of his rule. To a modern man of India the kings, as well as their court poets, who composed the laudatory verses for copper plates and inscriptions appear to be obscene. They take pride not only in capturing the women of the defeated countries but also in openly proclaiming before the world their dalliance with them.

Since the heavens were ruled by various gods, the kings of Kampuchea took the liberty in identifying themselves with one or the other god under the cult of *Devaraja* initiated by king Jayavarman II. The title of *Devaraja* appears to have been borrowed from the Hindu concept of Lord Indra, who has been designated at a large number of places in ancient texts of India, particularly *Mahabharata*, by the same name. *Apsaras* were always at the command of Indra and in general were meant for the enjoyment of great personalities, both in heaven and earth. Those qualified to have carnal relationship with the *apsaras* on earth were also accomplished in virtuous deeds. These characteristics have been very well illustrated in the great epic *Mahabharata*. The kings in Kampuchea made an attempt to derive the privilege of a god and enjoy the pleasures of heaven by comparing themselves with the incarnation or manifestation of various gods. The cult of *Devaraja* was also a source of strength and power to them to act as an absolute despot. Suryavarman II constructed the temple of Angkor Wat against the concept of Mount Meru, one of the heavens, where as a *Devaraja* he had the privilege of enjoying the life surrounded all around by *apsaras*, as depicted in the ancient texts. A life-size representation of the scene of the Churning of the Ocean, in which Vishnu played the leading role, also finds majestic expression in the south-eastern corner of the third enclosure. Free carving of *apsaras* in large numbers should be viewed against this background as well, because they spring from the ocean at the time of the Churning and the king Suryavarman II considered himself, in the capacity of *Devaraja*, to be *de facto* Vishnu.

Though the title of *Devaraja* was assumed by Jayavarman II, the institution of *apsaras* appears to have come into existence at a much



later date. They were apparently first carved in the temples during the reign of Yasovarman I, who is said to have laid the foundation of the capital Phnom Bakheng in Angkor in 899 A.D. The name of the capital in the initial stages was Kambujapuri, which was changed to Yashodharapura at a later date. The legend of Kambu Svayambhuva briefly referred to in Bakesi Camkron inscription is also of great importance in the study of *apsaras* in Kampuchea. The *apsaras* at Phnom Bakheng are rather squat and plump and their bodily proportions are also not perfect.

Of the many structures raised by Rajendravarman, the most remarkable and attractive one was the temple of Banteay Srei, meaning 'Citadel of Women'. It stands at an isolated place about thirty kilometres north-east of Siem Reap and was completed in the last year of Rajendravarman's reign. In the charming temple of Banteay Srei the *apsaras* appear in great contrast to the ones at Phnom Bakheng, so far as their elasticity, glamour and superb feminine beauty leading to great sexual appeal are concerned. The expression and style of the presentation of *apsaras* at Banteay Srei bear closest similarity to Indian examples. The masterly creation of artistic expression, however, reached its zenith in the carving of *apsaras* at the temple of Angkor Wat.

Found in almost every part of the temple of Angkor Wat, the *apsaras* seem to vie with each other, in dress, decoration and seductive position, for the attention of the king. One could easily write a dissertation on the *apsaras* at Angkor Wat, taking into consideration the large number of head-dresses, facial expressions and the positions in which they stand. Some examples of facial features, for instance, reveal the existence of several races, which might represent the women captured in war. The graceful forms of the *apsaras* have been chiselled out both singly and in groups of from two to six. In the lanes of some western park the sight of the dainty maids like the passing of a bevy of damsels is indeed enchanting. Some of them stand under panopies and arches of intricate foliage, some against a background of carved vegetation. Agglomeration of the *apsaras* is greatest on the second storey of the temple. It appears truly to be the dwelling place where they reign alone on every wall of the vast courtyards and have turned them into the silent apartments of the largest seraglios. The



*apsaras* also appear on the sides of the doorways, as if ready to cross the porticos and wander away in the galleries; against the plain surface of naked walls, walking arm in arm as in a joyful garden, and treading on moulding overgrown with flowers, at entrance to chapels, on the point of going inside, it seems, and praying, or else roguishly beckoning one to look at them, to come near in the half shadow of mysterious corners.

The head-dresses of the *apsaras* are of various kinds, for example fan-shaped, cap-and-crown-like, revealing Mongolian and Chinese features. The head-dresses are invariably crowned above with long-stemmed flowers, emerging prominently above the head like plumes, with multiple circular decorated jewels affixed. It is in the head-dress that fashion, womanly love of self-adornment and originality, meet to give us a style of feminine arrangement, extraordinary in elaboration and marvellous in dexterity. The more lowly women gather their hair in a chignon on the top of their head and allow a long tress to flutter freely between wavy objects which resemble plumes or reeds. Some of the *apsaras* have brushed their hair in a kind of halo, tied in stiff knots and pointed locks, and have stuck flowers or jewels in the dark waves that enhance the pure oval of their face. It is not easy to copy some of the styles like fantastic coiffures, in front of which the ablest of head-dressers would stare. They are further composed of strings of pearls, crescents, roses, jewels closely allied in shape of fern leaves, of lotus flowers, clusters of precious stones, of a bewildering mixture of nature and artificiality that attracts both by its strangeness and the real taste that underlies it and which is decidedly becoming to the Khmer type of beauty.

Though the breasts vary in proportions, they are all round and life-like. The nipples are sometimes only suggested. In some examples the *apsaras* have been carved with the hand touching the breast. Hips are broad and heavy, and waists slender and supple. The suppleness depicted in the curvature of the body is full of amorous appeal.

The *apsaras* can be observed in the postures of arms locked, hands pressed, fanning themselves or smelling the buds of precious flowers, on which perches perhaps a tiny tame bird. They are nude down to the waist, their embroidered *sarong* hangs loosely to below



the knees, one end of the cloth tucked in the belt and is folded on the side, the other is sometimes held by a dainty hand or slung over a forearm or shoulder. Veils are foreign to *apsaras*, though not completely unknown.

Following a course entirely different from India, heavy ornaments were not generally used by *apsaras* as an aid to beauty. Necklaces and waist-bands of several strands adorned with triangular pendants, and two heavy anklets were almost universally worn. Circular lockets dangling against the bosom, heavy suspended earrings of various designs and many kinds of head-dresses, are some of the simple ornaments used to adorn the body. The hair is arranged in various ways, sometimes parted on two sides, and the forehead is often ornamented with a broad diamond-shaped auspicious mark.

The hands of the *apsaras* depicted alone are in different positions: generally bent at right angles to touch the stomach, they are often curved and resting on the hip, or one of the hands may be raised to touch head-dress. *Apsaras* have also been systematically portrayed with flowers held in a raised hand. Mirrors of different shapes are occasionally held in hand and play-objects in raised hands are also often seen. Occasionally both the hands are folded at right angle to meet near the navel, which has been shown prominently. In groups, the hand of one may be resting on the shoulder of another as if about to embrace and sometimes the hand of one is intertwined with the other. The feet are always depicted turned sideways. Taken as a whole, the *apsaras* look charming, but the most important drawback lies in their feet; a difficulty in perspective the Khmers could not master. In the shrine of Angkor Wat, where the relief is low, the artisans did not model the forms by cutting deeply into the stone and have drawn the feet in profile, while the *apsaras* appear with full face. Though the clothes are stiff and flat, yet their curves are well-arranged, and they do not impair by the simple and strong lines of their folds the general sweep of limbs and torsos.

The eyes of *apsaras* are expressive of an invitation to enjoyment and revelry and with the same end in view the slim body and head are bent in a voluptuous manner. Flowers were a source of great delight to the women of Kampuchea and consequently many *apsaras* have



been carved below thick floral decoration, similarly the head-dress is also covered with every kind of flower.

*Apsaras* were carved before being fixed in position in the temple. Inspiration for erecting massive monuments was no doubt generated by the Indian influence, they developed a style of their own in accordance with local conventions and traditions. However, unlike in India, the *apsaras* in the monuments of Kampuchea are not in very high relief. In spite of the fact that there is free expression of feminine beauty, coital scenes in multiple poses do not find any place on the monuments irrespective of the fact that they are so common in India. Depiction of couples appears to have been taboo in Kampuchea. Similarly, there is a fundamental departure from the Indian tradition in the expression of full nudity, for there are no such examples to be seen in Kampuchea. Coomaraswamy has correctly observed and said, "In sculpture, too, a national formula is evolved; this type is characterized by the straight line of the hair, the level brows, the scarcely sloping eyes, full and wide lips and impassible serenity, often, especially in the case of the beautiful faces of the *apsaras*, by an exotic smile and a peculiar sweetness".<sup>12</sup>

In India *apsaras* found their expression in art as early as second-third century B.C. at Bharhut and Sanchi (both in Madhya Pradesh, the former in Satna and the latter in Raisen district), if we do not take into account the bronze girl found at Mohenjodaro, which continued and occupied an important position in the voluptuous *Salabhanjikas* of the Sunga-Kushana age. Depiction of *apsaras* on monuments became popular only in the early medieval period, say from eighth-ninth century A.D. Though the title of *Devaraja* was assumed by Jayavarman II in the year 822, the institution of *apsaras* appears to have come into existence at a much later date. They were apparently first carved in the temples during the reign of Yasovarman I, who is said to have laid the foundation of the capital Phnom Bakheng in Angkor in 889 A.D., reaching their highest altitude in the temple at Angkor Wat.

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## Conservation Problems and Measures as a Whole

### 8.1. Make up of the Monument

THE great temple of Angkor Wat was planned and designed by master architects. During the course of its construction all measures were taken to keep the monument standing in proper shape for a long time to come. A solid foundation was provided to the temple with the help of natural sand-like earth and small boulders of sandstone. They were superimposed by thick slabs of laterite which were ultimately capped by sandstone facing. The interior of the monument had been raised over a thick bedding of natural earth and boulder superimposed in the same manner by laterite and sandstone slabs. The thick bed of earth and boulder was encased in thick walls over the foundations mentioned above. The bedding of sand-like earth, boulder and laterite served as a very good preventive against the deterioration of the monument by way of sagging. The vast temple complex was covered almost everywhere by an astylar barrel-vaulted ceiling shell supported on solid walls and pillars having a rectangular section. In front of the gallery below the vaulted ceiling there is a corridor the ceiling of which rests like a giant cornice on rectangular pillars of a lesser height. It is bonded to the main wall at the beam level in tenon and mortice. A barrel-vaulted ceiling executed in dry masonry is functionally suitable to prevent water percolation in a tropical country like Kampuchea with a heavy downpour, if its members of foundation at all levels are uniformly stable and if the building material is of even grade. It seems, however, that while the cloister base is well supported on a lintel-corbel principle in the stepped plinth, the same

cannot be said of the inner main pillars and their basal preparation to a like extent. This had often resulted in the side half-vault pillars wrenching themselves from the beam anchor and slipping down. In order to neutralise this shortcoming the architects seem to have planned to cover the running joints of the vaulted ceiling with the help of slabs laid in a chase provided in the underlying two joint slabs. These slabs were further overlapped by long horizontal slabs in order to cover their joints all along the line, by overlap, and crowned by decorated dancing figures at close intervals.

## 8.2. Problems of Conservation

The main problems of conservation are as follows:

### 8.2.1. *Nature and Neglect*

Vagaries of nature and neglect have been the root causes of rapid deterioration of the great temple in recent times. The last healing touch which the monument might have received at the hands of the last French Curator of Angkor Monuments, Mr. Groslier, can in no case be less than a decade ago, when warlike conditions in the country started in 1971. The prevailing conditions not only forced Groslier to abandon all conservation works, but had to leave the country ultimately in 1974.

### 8.2.2. *Vegetation*

When the monument was lost in oblivion and remained completely neglected for more than four centuries, rampant growth of vegetation affected the monument badly by shaking the joints between the stone slabs. In the absence of any protection or conservation, the earlier conditions were repeated and vegetation found a free hand to grow. The roots penetrated the structure deep enough to pry the stones apart. The implacable jungle threatened the very existence of the monument.

### 8.2.3. *Erosion*

Armed with heavy monsoons in the region nature played a havoc in mercilessly eroding all parts of the monument. The softer clayey



component of the sandstone was washed away rendering the structure as a whole very weak. Erosion has affected the fabric of the monument to such a great extent that the sandstone slabs are flaking layer by layer very quickly like pages of a book. At many places the sandstone falls like powder even by a mild touch. Regular erosion has completely effaced the decorated lotus on the interior surface of the ceiling in the semi-vaulted gallery. The process of the leaching out of clay from the sandstone has not only undermined the strength of the stone, but has also changed, sometimes entirely, the surface colour of the stone. Direct splashes of rain are not as much responsible for the malady of erosion as the continuous flow of water with a considerable force for a long time. Accumulation of water on the floor, as a result of percolation, has eroded the bottom-most part of almost all the pillars. The maximum effect of erosion can be observed on the four towers of the first enclosure and the high-rising central tower over the main shrine. In certain parts of the north-eastern tower the effect of erosion is to such a great extent that the ornamentation and the *apsaras* have been completely washed away. The higher plinths of the second and first enclosures have also suffered badly. The effect of erosion as a whole is evenly distributed over the outer pillars, lintels and tie-beams of the galleries, the bas-reliefs at various places and the lower portion of many *apsara* figures.

#### 8.2.4. *Percolation*

Once the entire make-up of the structure was disturbed by the rampant growth of vegetation, the regular and heavy percolation of water accelerated the deterioration of the monument, besides undermining its strength and durability. The percolated rain water accumulated on the floor, got into the joints along with the accumulated dust and ultimately acted like explosion in the form of expansion. As a sequel the stones used were completely dislodged and the masonry of the superstructure could not stand in their proper position, sometimes collapsing completely.

#### 8.2.5. *Seepage and Sinking*

Seepage of water and the resultant sinking of the earth filling of

foundation is not a general ailment of the monument. It is restricted to particular areas, specially the gallery of the third enclosure. It is the worst affected part of the monument. All the pillars in the gallery have sunk along with the horizontal slabs between them on account of regular seepage of water. With the sinking of the pillars of the main gallery the pillars of the semi-vaulted gallery in front have fallen out of plumb with their thrust outside. The fine joints of the stone slabs used in the floor of the gallery have developed yawning gaps.

#### 8.2.6. *Nuisance of Insects*

In addition to seepage, insects have also played a vital role in weakening the foundation of the pillars. They get into the joints and bring out in large quantities the earth filled in the foundation. At a number of places the insects have raised ant-hills by piling up the damp earth. The dampness in the earth must be giving birth to some bacteria on which the insects subsist.

### 8.3. **Bio-chemical**

Bio-chemical problems are another factor, which have accelerated the deterioration of the monument further. Growth of micro-organisms like moss, various types of lichens and algae played a vital role in weakening the structure of the monument. Besides disfiguring the monument badly, they hasten the weathering of sandstone by secretion of harmful chemical substances. The above-mentioned ailments can be observed all over the monument.

#### 8.3.1. *Heat*

Heat of the tropical country played a significant role in the deterioration of the monument. Exfoliation of the stone surface as a result of sharp variation in the day and night temperatures has badly affected the balustrades and the horizontal upper surfaces of the plinth.

#### 8.3.2. *Capillary action*

There does not appear to be any capillary action. It is corroborated by the absence of moisture in the lowest part of the



monument.

### 8.3.3. *Salt effect*

The examination of a large number of samples has shown that the damage to the monument by way of salt effect is negligible. Most of the samples yielded negative results. The restricted salt present in a limited number of samples may be a content of the stone itself.

### 8.3.4. *Bat droppings*

The excreta of the bats deposited on the top interior of the monument has been washed down at many places developing thick white patches. This is also one of the important causes of the decay of the monument.

## 8.4. Measures of Conservation

### 8.4.1. *Vegetation clearance*

Vegetation has always acted as the greatest enemy of any structure. The monument should, therefore, be completely eradicated of the vegetation followed by steps to arrest further growth.

### 8.4.2. *Stopping percolation of water*

The ceiling in every part of the monument should be carefully pointed so as to stop any percolation of water. Once this work is executed more than fifty per cent of the malady will be overcome.

### 8.4.3. *Grouting and Pointing*

Wide cracks observed almost in every part of the monument should be filled up by grouting and narrow cracks by pointing.

### 8.4.4. *Dismantling and Resetting*

The badly dislodged portions of the monument should be carefully dismantled and reset with the help of dowels and minimum use of cement mortar. Wherever the stones are not badly dislodged they can simply be reset. This measure will have to be adopted, particularly in case of high plinth and gable-ends of the ceiling.

#### 8.4.5. *Dismantling and providing slab below the sunken pillars*

The ceiling of the semi-vaulted gallery and half of the vaulted ceiling of the third enclosure, where the pillars have sunk, will have to be dismantled in the first instance. To strengthen the foundation of the pillars a stone slab above the laterite slab has to be provided to prevent any future sinking. Cement-concrete bedding in a similar manner above the laterite slabs is to be provided below the sunken sandstone slabs. These works are to be undertaken with great care by marking the stones systematically at the time of dismantling. In certain portions of the third enclosure, where the sinking is minor, dismantling may not be necessary. The above-mentioned works can be executed after giving full support to the vaulted ceiling of the main gallery with the help of jacks. The broken tie-beams of the semi-vaulted gallery are to be repaired.

#### 8.4.6. *Resetting the floor slabs of the gallery*

The floor slabs with wide gaps are to be taken out and reset in proper position. In certain areas some chiselling may also have to be done. Pointing should be taken up after resetting the slabs.

#### 8.4.7. *Restoration*

At a large number of places part of the masonry has collapsed weakening the adjoining structure. This has happened in almost all the porticos. Such parts should be restored with the help of available stones.

#### 8.4.8. *Chemical treatment*

After the structural repairs are completed, the work of eradication of moss, lichen and algae from the surface of the stone should be undertaken. Usually a 5% solution of ammonia with 1% solution of non-ironic detergent is used for surface cleaning. The surface of the stones, after cleaning, will have to be treated with a fungicide such as zinc silico flouride or sodium pentechlorophemate. Finally, the preservative solution of 1% Poly methyl Methacrylate in Toulene should be applied. The friable and weak stones rendered on account



of erosion will have to be consolidated by adopting a suitable impregnation technique. The solution to be used for consolidation is to be decided after conducting certain experiments. In certain parts of the monument like the balustrades, where no structural preservation is involved, the chemical treatment can be started simultaneously.

#### 8.4.9. *Dressing and Drainage*

The last measure of structural conditioning is dressing the open area with proper slopes against the structure for quick drainage of water, so that the same is not allowed to seep into the foundations. The drains within the monument have choked at a number of places. They should be cleaned properly for quick drainage of water. New drains can be constructed wherever necessary.

#### 8.5. **Lawn**

After dressing the open courtyards properly a suitable lawn may be laid out. This job should be attended to by the officials of the Government of Kampuchea.

## Structural Preservation

### 9.1. The Moat

**T**HE moat is now full of weeds, which diminishes the grandeur and beauty of the monument greatly. Water remains present in the moat throughout the year. Hence, the weeds should be completely eradicated to present the original setting of the monument casting its beautiful reflection in the water of the moat. The local authorities have been requested to undertake this work themselves.

### 9.2. Embankments of the Moat

Some repair work was done by the French experts between 1961 and 1965 by way of restoring the right arm of the steps to a limited distance of 246 metres. However, at several places the repair work has developed wide cracks. Taking into consideration the length of the steps restored by the French, it was decided to repair the left arm of the steps up to the same extent. The left arm was not touched at all by the French. The steps have at a large number of places sunk on account of heavy flow of water from the roadside and rampant growth of vegetation. They should be repaired by resetting the stones of the steps after eradicating the vegetation and watertightening them. The steps should be reset over a bed of concrete so as to arrest future sinking. The wide cracks developed on the right arm are to be filled up by pointing.

In order to prevent any further damage to the steps the area between the steps and the road-should be properly levelled by providing slope towards the road side, so that the water does not rush into the moat through the steps. It is also advisable to remove the five



live *peepal* trees by the side of the road because their roots penetrate long distances and damage the structure. A large number of pits between the steps and the road are to be filled up. The drainage already provided is to be cleared for free flow of water.

The steps of the eastern embankment to an extent of 133 metres on either side are to be dismantled, reset over a bed of concrete and pointed. There is not much work on the southern side, because the same was repaired by the French between 1961 and 1965. In the embankment two drains have been provided with the help of projections and steps in between. At the bottom of the steps laterite blocks have been provided in an offset fashion for a solid foundation. The offsets present a confusing picture of steps. A close study revealed that they were not steps. Had they been steps the measurements of the landing and the width of the steps would have been the same in every rise. The French people mistook the offset into steps and reconstructed them similarly by providing seven steps. The same mistake has been committed by them in restoring the southern arm of the western embankment. However, during the course of fresh work the original plan and design should be adhered to.

There are two huge trees at the northern end. They are to be removed. The area between the steps and the fourth enclosure is to be dressed up in such a fashion that the slope from both sides meet at the centre for draining out the water through the drains provided in the embankment.

Small trenches at frequent intervals were sunk by the side of the steps and the causeway to ascertain the nature and depth of foundation. During the course of restoration work the original plan and design as revealed by the trenches should be followed.

### 9.3. Causeway

The right hand (southern) half of the causeway was repaired by the French during the same period leaving the other half untouched. It has badly sunk. While repairing the half portion the French used new block of sandstone in addition to cement concrete blocks. It was, however, decided that during the course of fresh repair work on the other half new blocks of stone need not be used. The old ones should

be dismantled and reset after providing a solid foundation. The sequence of the causeway from top to bottom is as follows:

Sandstone block 40 to 50 cms.

Laterite block 40 cms.

Natural Sand 1.20 cms.

Laterite block 4 cms.

Rest      Natural sand.

While reconstructing the causeway the original pattern should be followed instead of adhering to that of the French. The length of the causeway is 208 metres.

#### 9.4. Fourth Enclosure

It was observed that water percolates from the ceiling in the entire gallery as a result of which the structure is deteriorating very quickly. The water on account of regular percolation accumulates on the floor damaging thereby the slabs used in it. The ceiling of the porticos of the gateways is missing at many places. There is rampant growth of vegetation also, particularly in and around the two elephant gates at either end. The stones of the plinth at the gateways are dislodged.

In the first instance the enclosure is to be completely eradicated of vegetation. This should be followed by pointing the entire ceiling. The plinth of the superstructure, wherever dislodged, should be reset. The missing ceiling of the porticos is to be restored with the available stones. Wide vertical cracks are to be grouted and narrower cracks to be pointed. At a limited number of places the ceiling stones, particularly in the gateways are badly dislodged. They are to be dismantled and reset on the original pattern. The plinth of the two elephant gates is to be protected by providing an apron. The flooring in certain areas of the gallery is to be repaired by resetting and pointing.

Wire-mesh should be provided in all the three towers to prevent the nuisance of bats.

##### 9.4.1. Compound Wall

The compound wall of the temple made entirely of laterite



blocks is in a good state of preservation. On the eastern side close to the gate a portion of it was demolished by the French to transport materials for preservation of the monument inside. At certain places other than the above opening the fallen portion of the compound wall has been restored with the help of sandstone blocks available at the site. A limited number of laterite blocks on the north-eastern and south-eastern corners of the compound wall have fallen. They should be reset in their position. The curator has been requested to keep the wall free from vegetation which had grown on the top of the compound wall.

#### 9.4.2. *South Gate*

Though the ceiling at certain places has completely disappeared, the structure as a whole is in a better state of preservation. It is not finished. The ceiling of the two portions on the north and the south has collapsed and the standing pillars are leaning in a precarious condition. In order to hold two vertical pillars in position on the northern side the French people have given support of R.C.C. slabs. There is rampant growth of vegetation all around. The plinth stones are dislodged. Similarly the stones of the ceiling in a limited area are dislodged. Water percolates from the ceiling in the entire structure.

A Buddha image was installed here at a later date. It has completely decomposed and the area has been blocked by means of stone slabs piled one above the other.

The following works are to be attended to in this gate:

1. Eradicating the vegetation completely.
2. Pointing the entire ceiling.
3. Dismantling and resetting the badly dislodged portions of ceiling.
4. Resetting the dislodged stones of the plinth.
5. Restoring the ceiling of the porticos with available stones.
6. Providing protection to the plinth by an apron all around.
7. Grouting the wide vertical cracks.
8. Pointing the narrow cracks.
9. Providing approach road to the gate.

10. Providing necessary drainage on either side of the approach road after dressing the area.
11. Pointing the flooring.

The blocks of stones closing the Buddha image as well as certain windows are to be removed.

#### 9.4.3. *North Gate*

It is in a far better state of preservation, though unfinished. The ceiling of the northern projection including the portico has completely collapsed. The carved stones *en block* are lying by the side of the gate on the northern side. The causes of deterioration of the structure are the same as observed in the South Gate. Hence, the same item of works as mentioned in South Gate above are to be repeated as a measure of protection.

#### 9.4.4. *East Gate*

A trench was laid towards the western side to see if the deterioration of the monument was on account of sinking of foundation. The foundation was found to be firm. Alternate layers of sand and sand with boulders were rammed in the foundation over the natural sand. On the top there was a laterite slab further capped by sandstone facing. The foundation was observed to be completely free of any moisture or sinking.

In order, therefore, to establish the actual cause of great deterioration of the monument the sandstone slab of the flooring inside the monument was removed. Below the massive block of sandstone a laterite block was observed and further below there were alternate layers of sand and sand mixed with boulders. The actual cause of the deterioration was determined at this place. All the courses in the flooring including the top sandstone slab were full of moisture and completely wet.

Wet earth was also observed to be sticking to the sides of the slabs. Roots were found throughout the foundation upto a depth of more than a metre.



The main reason for the decay of the monument was percolation of water from the top and its accumulation along with dust on the floor. Further, the accumulated water and dust gets into the joints leading both to expansion of the architectural members as well as growth of vegetation. The absorption of both water and dust dislodged all the blocks of stone set in dry masonry as a sequel to expansion.

The items of work to be undertaken at East Gate are the same as required at the other two gates.

#### 9.5. **Library** (northern side)

It is in a very bad state of preservation. The ceiling of the cruciform projections (portico) on all the four sides have collapsed. The pillars at certain places have also fallen. The architectural members which have collapsed have been stacked nearby. The ceiling of one of the galleries on the southern side has also collapsed. The stones of the plinth are dislodged at certain places. There is regular percolation of water from the ceiling which affects the entire structure. Stones of the walls are also dislodged at a restricted number of places. There are wide vertical cracks in the wall.

The following items of work are to be undertaken to protect the structure from further deterioration:

1. Eradicating the vegetation completely.
2. Pointing the entire ceiling.
3. Restoring the collapsed ceiling of the porticos with available stones.
4. Resetting the dislodged stones of the plinth and the wall.
5. Pointing the flooring.
6. Grouting the wide vertical cracks.
7. Providing approach road on all the four sides.
8. Dressing the premises and providing necessary drainage.
9. Protecting the plinth of the steps by an apron.

#### 9.6. **Library** (southern side)

It is in a better state of preservation than the northern one. The

works to be executed in this structure are the same as mentioned in the Library of the northern side.

#### 9.7. Causeway (leading to the main temple)

The inner causeway, though much longer than the outer one, is in a fairly good state of preservation and not much work by way of preservation is to be done. The open joints of the pavement slabs require pointing at a number of places. The pavement has sunk at several places developing pockets, where rain water easily accumulates and damages the structure. The stone slabs in these pockets are to be taken out and reset in such a fashion that water does not find a place to accumulate. The hollow below the sunken slabs may be filled up. The *naga*-hoods can be replaced in their position at certain places on the balustrades without much difficulty. It should be done.

#### 9.8. Dancing Platform (esplanade)

A few corners of the cruciform platform have developed wide cracks dislodging the stones completely. They are to be reset properly on the original pattern. The south-eastern corner of the plinth is to be protected by providing an apron. At certain places the flooring has sunk forming pits, where water easily accumulates and damages the structure. The stones at those places should be taken out and reset properly, so as to prevent any water accumulation. The open joints of the flooring require pointing at a number of places.

#### 9.9. Open Courtyard Between the Balustrades and the Third Enclosure

A wide rectangular area is enclosed between the balustrades and the third enclosure. It is open to the sky and the land formation is such that the water during the monsoons can easily accumulate in the area and remain standing for a long time. The accumulated water seeps into the foundations of the structure and this is one of the principal causes of the sinking of all the pillars in the third enclosure. The entire open area should, therefore, be properly dressed and necessary slope against the structure be provided. The slopes should be connected with the drains in a proper manner, so that the rain water is quickly



discharged and there is no accumulation of water near the structure. Some drainage system is already there but the same is to be made active and further strengthened by a few more drains on the slopes to connect the main drain.

#### 9.10. Third Enclosure

All the pillars of the third enclosure have sunk on account of regular percolation of water, which gets into the joints along with the accumulated dust. The sinking has been accelerated by the seepage of stagnated water from the open courtyard outside. Water gets accumulated in the open area very quickly during the monsoons. A damaging role has been played by the insects as well. They get into the joints easily and take out the filled-up earth of the foundations. The filled-up earth is also washed away by the water flowing through the open joints. As a sequel to the shifting of earth the structure settles down and develops cracks.

The sinking of the pillars in the vaulted gallery has shaken the pillars of the semi-vaulted ceiling of the corridor which have fallen out of plumb, the thrust being outside. The tie-beams connecting the two pillars have precariously cracked. Regular percolation of water from the ceiling has resulted in complete flaking of the inner surface of the ceiling of the semi-vaulted gallery. The accumulation of water in the galleries has also affected the pillars badly. They are completely worn off on account of erosion, particularly at the bottom. With the sinking of the pillars yawning gap can be observed in the joints of the slabs used in the floor. The wide cracks run from one end to the other. The crack in the western gallery is so wide that it looks like a small drain in the centre of the floor.

Setting of the sunken pillars and other connected architectural members in their original position is the most complicated work of conservation in the monument. For this purpose the ceiling of the semi-vaulted gallery and half of the vaulted ceiling are to be dismantled and the foundation of the pillars strengthened by providing stone slabs between the sandstone and laterite slabs. In the same manner cement concrete bedding is to be provided below the slabs, which have sunk along with the pillars. This work should be done with great care



by numbering the stones systematically at the time of dismantling. In certain portions of the third enclosure where the sinking is minor the vaulted ceiling need not be dismantled. The above-mentioned works can be executed by giving full support to the ceiling with the help of jacks. The tie-beams should be repaired and refixed as far as possible. In a limited number of cases, where they are completely worn off or damaged, they should be replaced by a new one. After executing the above-mentioned works the dismantled portion of the ceiling is to be rebuilt on the original pattern. While dismantling the ceiling adequate care should be taken to number the stones systematically so that there is no problem at the time of resetting. The position of each stone should also be properly documented with the help of drawing and photography.

The French experts dismantled the south-eastern part of the gallery to reset the same after taking necessary measures to strengthen the foundation as well as other architectural members. The work was left incomplete and the stones are lying within the open courtyard. They are also numbered systematically. In order to keep the vaulted ceiling in position, the French experts had made provision of a ring beam, which is partly damaged. The bas-relief in this portion of the gallery depicts the *Samudramanathan* (churning of the ocean) scene in a lively manner. The bas-relief will be badly damaged if it is left open to sky and rain. Hence, it is necessary to complete the work of resetting the ceiling of the gallery as well as semi-vaulted gallery in front with the stones available at the site after securing the ring beam. Wherever necessary the stones can be repaired. Missing stones can be replaced by new ones.

Once the ceiling of the galleries is dismantled there should not be any problem in resetting the dislodged stones at a number of places in the gallery as well as the porticos meant for entrance.

The following further items of work should be executed in the third enclosure:

1. Pointing the entire ceiling.
2. Resetting the plinth stones wherever they are badly dislodged.



It is much more conspicuous at the entrance, main as well as subsidiary.

3. Pointing the narrow vertical cracks.
4. Grouting the wide vertical cracks.
5. Dismantling and resetting the flooring wherever it is badly damaged.
6. Pointing and filling up of the joints where the flooring is not badly damaged.
7. Modelling of the worn out pillars.

#### 9.10.1. *Main Gate*

The ceiling of the main gate is to be restored with the available stones. A part of the gabled roof projecting towards the west is also to be reconstructed.

#### 9.10.2. *North Gate*

The vaulted gable roof projecting towards the north is to be reconstructed. The ceiling of the portico facing west is also to be reconstructed with the available stones.

#### 9.10.3. *Thousand Buddha Gate*

The semi-vaulted roof on the northern side which has developed wide opening is to be reset.

#### 9.10.4. *South-western Gate*

In this gate wide cracks have developed diagonally on the walls. The repairs carried out by the French experts are also giving way. Hence, the stones should be properly reset in order to arrest any further deterioration. Vertical cracks should be pointed and grouted.

#### 9.10.5. *Central Gate (north side)*

The semi-vaulted roof of the northern projection is in a very bad state of preservation. The stones used in it are completely dislodged. The French experts gave support to it with R.C.C., pillars, which are of no use now. The useless pillars are, therefore, to be removed and

the dislodged stones reset with the available stones as far as possible. Wherever necessary new stones may be used.

The semi-vaulted roof of the same projection on the eastern side is also badly damaged. The dislodged stones of the ceiling are to be dismantled and properly reset.

The ceiling of the projection behind the portico on the northern side has collapsed. It is to be restored with the available stones.

#### 9.10.6. *North-east Gate*

The ceiling of the portico on the eastern side has collapsed. One of the pillars (S.E.) has fallen out of plumb. It has been fixed in position with the help of clamps. The lintels above have been given support by R.C.C. pillars. The R.C.C. pillars are to be removed and a new pillar is to be replaced. The lintels are to be reset in position. The entire flooring is to be taken out and reset because it is badly damaged and eroded.

#### 9.10.7. *Mid-Gateway* (eastern gallery-northern arm)

The ceiling of a portion of the portico projecting towards the east is to be reset. The western portico is also to be attended to in a similar manner, but in this case dismantling is necessary before resetting.

#### 9.10.8. *Central Gate* (eastern gallery)

The portico on the eastern side has been supported on R.C.C. pillars. They are to be removed after resetting the ceiling properly. In the portico on the western side the stones are badly dislodged. They are to be reset. The semi-vaulted roof outside the southern side is to be dismantled and reset. In the same way the northern side is also to be attended to.

#### 9.10.9. *Southern Gallery*

Repairs on a large scale were undertaken in this gallery by the French experts and as such minimum necessary work is to be executed here. The following works are necessary:



1. Pointing the entire flooring.
2. Filling up the vertical gaps in the central gateway.
3. Pillars which are clamped should be changed by modelling new ones.
4. One lintel badly damaged is also to be replaced.

The central gate on the northern projection has developed wide cracks looking from one side to the other. They are to be suitably filled up by grouting.

#### 9.10.10. *Central Gate*

The badly damaged pillars and lintels of the portico are to be changed. In the portico on the northern side the flooring is to be reset and lintels and pillars fastened with the help of dowels. The flooring of the projection towards the west is to be reset.

#### 9.10.11. *Western Half*

Four bays of pillar which have been badly damaged, even after the works executed by the French experts, are to be completely repaired with the help of R.C.C. The wooden supports should be removed thereafter.

The entire flooring is to be pointed.

#### 9.11. **Open Courtyard between the Third and Second Enclosures**

The area is full of wild tall grass making it impossible to move. It is also uneven with ups and downs allowing water to accumulate easily at a number of places. The water stagnated into the pits can easily seep into the foundation of the structure and damage it. The wild grass, therefore, should be completely removed from the area. Thereafter the area should be properly levelled providing slope against the structure and connecting the same with suitable drains for quick discharge of water.

#### 9.12. **Library** (northern side between the two enclosures)

Like other structures the library is also a victim of the same ailment i.e., heavy percolation of water from the ceiling and its

accumulation on the floor. However, but for the high plinth, it is in a good state of preservation.

The following works are to be executed to preserve the structure:

1. Dismantling and resetting those portions of the plinth where the stones are completely dislodged.
2. Pointing the entire ceiling.
3. Protecting the plinth all around by an apron.
4. Pointing the narrow vertical joints.
5. Grouting the wide vertical cracks.
6. The portions of the flooring which are badly eroded are to be reset.
7. R.C.C. support in the form of a pillar has been given to the damaged lintel in the portico on the western side. It is to be removed after repairing the lintel by pinning.
8. After resetting the plinth the leaning pillars and the portico on the western side are to be set in position.
9. Base of all the eroded pillars are to be repaired by modelling. Since the pillars are plain the work is not at all difficult.
10. Resetting the dislodged ceiling of the portico both on the west as well as on the east.
11. Providing drainage in the flooring.

#### 9.13. Library (southern side)

This is in a much better state of preservation as compared to the northern one. Adequate measures of protection were taken by the French experts to prevent it from deterioration. However, the following works by way of protection are necessary:

1. Resetting the dislodged stones of the plinth.
2. Pointing the entire ceiling.
3. Pointing and grouting the narrow and wide vertical cracks.
4. Restoration of the ceiling of the portico on the eastern side with available stones.
5. Pointing the flooring of the cruciform hall wherever necessary.



6. Modelling the base of eroded pillars.
7. Providing drainage in the flooring.

#### 9.14. Cruciform Galleries between the Third and Second Enclosures

The galleries are in a fairly good state of preservation. As a whole the following works should be executed to prevent them from further deterioration:

1. The plinth of the opening leading to the Library, both on the north and the south, is to be reset because the stones are badly dislodged.
2. Pointing the entire ceiling.
3. Pointing and grouting the vertical open joints.
4. The collapsed portions of the ceiling of the semi-vaulted gallery are to be restored with available stones. The shabby supports provided at certain places by the French experts are to be removed.
5. Repairing the damaged pillars.
6. Providing proper drainage in the four tanks.
7. Pointing the flooring of the tank wherever necessary.

#### 9.15. Library (northern side between the Second and First Enclosures)

The ceiling of the hall and the portico on the two sides has completely collapsed. It is not advisable to restore the entire ceiling on account of non-availability of stones. The following measures will be adequate to save it from further deterioration:

1. Resetting the plinth wherever the stones are dislodged.
2. Pointing the vertical cracks.
3. Grouting the wide vertical cracks particularly those in the door jambs.
4. Grouting the wide vertical cracks on the exterior above the plinth.
5. Pointing the plinth on the top, particularly those supporting the four porticos on four sides.
6. Resetting a portion of the ceiling of the hall with the available stones.

7. Badly damaged pillars are to be repaired.
8. Pointing the flooring.

9.16. **Library**—(southern side between the Second and First Enclosures)

It is in a bad state of preservation. The ceiling of the hall and the two porticos on the east and west has completely collapsed. The eaves portion above the lintel on the southern opening is hanging precariously and may collapse any time. Wide cracks have developed right from the semi-vaulted roof above.

The following works are to be executed to preserve the structure:

1. Resetting the dislodged stones of the plinth.
2. Dismantling and resetting the eaves portion on the southern side right from the semi-vaulted roof.
3. Restoring the ceiling of the central hall with available stones. Thereafter pointing the entire ceiling.
4. Pointing the vertical cracks.
5. Grouting the wide vertical cracks.
6. Pointing the flooring both inside and outside.
7. Door jambs are to be repaired.

9.17. **Cross Pathway** (connecting the two libraries and the Second and First Enclosures)

The flooring is to be pointed.

9.18. **Second Enclosure**

The construction of the second enclosure is similar to that of the third but for the absence of bas-reliefs on the back solid wall. The ailment of the structure is also more or less the same. There is constant percolation of water from the ceiling which undermines the strength of the monument. In the first instance, the entire ceiling should be suitably pointed, so as to stop the percolation of water completely. The vertical cracks in the wall should be pointed and grouted. The flooring, wherever it is badly damaged, should be taken out and reset upside down after dressing the stone slabs properly. The wall at the base in the north-eastern and north-western corner has



been affected by erosion very badly. The sandstone slabs are falling in layers like pages of a book. The entire eroded portion needs remodelling. There are four towers, one at each corner of the gallery. The stones used in them have dislodged badly. They should be reset properly and pointed. Wire-mesh is also to be provided to prevent nuisance of bats.

#### 9.18.1. *Plinth on the Exterior and the Porticos*

The stones used in the plinth are very much displaced. They are to be reset for which badly affected portions will have to be dismantled in the first instance. The worst affected portions are the openings and the porticos. The cracks in the plinth and porticos are to be pointed and grouted. The ceiling of almost all the porticos has collapsed. It should be restored wherever the stones are available. The topmost course of the moulded plinth is in a very bad shape. The huge stones used in it go below the wall as well. They have all risen up on account of the sinking of the wall, creating a wide gap. The wide gap is to be filled up wherever the stones have cracked. The gap between the top course of the stone and the next below is also to be properly filled up. The base of the wall is to be strengthened by grouting, so as to prevent further sinking.

#### 9.19. **First Enclosure**

From a distance the first enclosure appeared to be in a very good state of preservation. A close study, however, revealed that it is not in a sound condition. The facing sandstone slabs of the high plinth are missing from a large number of places exposing the core of laterite block. A large number of stones are badly dislodged as well. The topmost course of the moulded plinth has sunk at a large number of places. Decorations in many places have completely disappeared on account of erosion. The binding material of the sandstone i.e. clay, has been washed away.

The following works are to be executed in the First Enclosure:

- (1) Dismantling the badly affected plinth and resetting the same along with the facing sandstone slabs wherever available.

- (2) The stones in the top course of the first and second plinth have badly sunk rather caved in at a large number of places on account of regular seepage of water. The gaps are to be properly filled up and the stones reset. The base of the walls is also to be suitably strengthened.
- (3) Pointing and grouting the cracks.

#### 9.19.1. Gallery

The gallery of the First Enclosure, unlike other enclosures is square on plan, one side being 57.60 metres. The causes of the deterioration of the vaulted gallery are, however, the same, the principal being percolation of water from the ceiling. The following works are essential to keep the gallery in proper shape and save it from further deterioration:

1. Pointing the entire ceiling, so as to stop percolation of water completely.
2. Pointing and grouting the vertical cracks.
3. Pointing the flooring.
4. Dismantling and resetting the flooring wherever it is badly eroded.
5. Pillars, which are very badly affected, are to be repaired or replaced whichever desirable.
6. The bottom portion of the eroded pillars are to modelled. In the same manner the window sills and the basement of the porticos are to be repaired.
7. The fallen portion of the ceiling of the porticos is to be reset with the available stones.
8. On the southern side the cracked lintel of the door jamb has been given support by a net-work of wooden posts placed vertically and diagonally. They are to be removed after repairing the lintel suitably with the help of pins.

#### 9.20. Semi-Vaulted Gallery on the interior of First Enclosure and the Porticos including the Cruciform Galleries.

The works to be executed in the above-mentioned portions of



monument are almost of the same nature. They are as follows:

1. Pointing the entire ceiling to stop percolation of water.
2. Resetting the partly collapsed ceiling with the available stones.
3. Dismantling and resetting the badly dislodged stones of the ceiling, particularly in the porticos.
4. The damaged tie-beams are to be repaired.
5. The damaged pillars are to be repaired both by modelling the eroded bases and pinning the damaged portions.

#### 9.20.1. *Plinth on the interior*

As a whole it is in a good state of preservation though the porticos are badly damaged. The damaged portions are to be reset properly and pointed.

#### 9.21. **Four towers, one at each corner of the First Enclosure**

The corner towers are made up of four receding tiers crowned by a lotus. They are in a bad state of preservation primarily because of water erosion. The main works to be executed on the towers before undertaking chemical preservation are pointing and grouting the cracks. The stones of the top portion of the tower are dislodged. They should be reset and suitably strengthened. Wire-mesh should be provided in the interior of each tower at the false ceiling level, so as to prevent the nuisance of bats.

#### 9.22. **Main Shrine**

The ceiling of the galleries (cruciform) is to be pointed to stop percolation of water. The dislodged stones of the ceiling are to be reset. The eroded pillars should be repaired by modelling. The support of wooden posts to the cracked lintels on the southern side must be removed after strengthening the lintels by pinning. The dislodged stones of the plinth of the main shrine are to be reset and pointed.

The vertical cracks need pointing and grouting.

### 9.22.1. *Central Tower*

The central tower rising above the main shrine is 35 metres from the bed of the tank at the level of first enclosure. It is the tallest of all the towers and has seven receding tiers below the representation of lotus on the top. The central tower has developed many cracks in each tier. At several places the stones used in the tower are not in their original position. All the cracks should be grouted and pointed. Similarly, the joints as a whole are to be pointed. The stones, which have been shaken from their position, should be reset and strengthened.

The shrine below the tower has been closed from all sides and the original image of Vishnu replaced. Now a standing figure of Buddha with a unique *mudra* graces the entrance on the four sides. A wire-mesh is also to be provided at the false ceiling level to stop the nuisance of bats.

### 9.23. **Laying out of a Lawn**

In order to make the monument much more presentable and also in the interest of better preservation, a lawn accompanied by an informal garden should be laid out in the open areas of the monument. This job should be attended to by the officials of the Government of Kampuchea.



## Chemical Conservation

### *Problems of stone decay and recommended conservation measures at the Temple of Angkor Wat*

A detailed study of Angkor Wat was carried out for the purpose of: (i) assessing the nature and extent of the deterioration in the stone and its causes, and (ii) suggesting suitable conservation measures.

During the period of study of the gigantic monument, all relevant data, having a bearing on stone weathering, such as atmospheric temperature and humidity, rock temperature and rock moisture etc., were collected. The rainfall data for Siem Reap for the preceding four years were obtained from the local Department of Agriculture.

Samples of sound and decayed rock as well as rock samples containing different kinds of micro-vegetational growth were collected for the purpose of study in the laboratories of the Archaeological Survey of India. Samples of the various cryptogamous organisms found in the monument were also collected with a view to their identification and study of their bio-chemical characteristics.

#### 10.1. Building Material

This monument is built of a medium-grained sandstone of grey colour obtained from quarries in Mount Kulen, which is about 45 kms from the site. A finer-grained stone has been used for the walls of the galleries carrying the bas-reliefs than for the pillars and plinth etc.

Petrological study of stone samples from nine different locations in the temple was carried out with the help of the Geological Survey of India, Southern Region, Hyderabad. The study showed that the same type of stone has been used throughout the monument. The rock has been identified as Wacke, belonging to the group of sandstones. It

is a moderately sorted rock with matrix ranging from 25 to 30%. The framework constituents are quartz (25 to 40%), felspar (25 to 30%) and rock fragments (5 to 15%). The matrix consists of mica and chlorite along with a few grains of calcite. Quartz-mica, schist, chert, quartzite etc. constitute the rock fragments. Zircon, sphene, epidote, tourmaline, spatite and garnet are the other accessories.

## 10.2 Climate

Being situated between 10° and 15°N latitude, Kampuchea is in the tropical zone, but the climate is moderate on account of the rich forest wealth. April is normally the hottest month and the highest temperature recorded by us during April this year (1982) was 36°C.

Relative humidity, however, is uniformly high. The average R.H. during the period of study was 75%, but on some days it was as high as 92%.

### 10.2.1 Surface Temperature

The surface temperature of the rock at twenty selected places in the monument was recorded at 7 A.M. and 3 P.M. each day. By 3 P.M. the rock surface was found to have attained its maximum temperature for the day. Among the selected spots studied, the *Naga balustrade* between the third and fourth enclosures recorded the maximum temperature of 52°C and also the maximum divergence between morning and afternoon temperature viz. 23°C. The highest temperature attained by the roof of the fourth enclosure was only 43°C.

## 10.3. Deterioration of the Stone and its Causes

### 10.3.1. Chemical Weathering

Usually this form of weathering is not a major problem in the case of sandstones, since the major constituent is quartz. In the present instance, however, appreciable quantities of alkali silicates viz. feldspars are present which break down on hydrolysis to yield clay minerals. Further, micro-organisms that are present induce chemical changes in the rock leading to its deterioration. Rain water seeping through the



stone carries harmful by-products of such chemical changes to other areas producing further changes.

### 10.3.2. *Physical Weathering*

#### 10.3.2.1. *Superficial or Surface Weathering*

Exfoliation of the rock surface, on account of contraction and expansion as a result of sharp variation in temperature, is extensively present on the *Naga* balustrades of the first and second causeways, on the *Naga* railing around the third enclosure and on the horizontal top surface of the plinths in all the four enclosures. Thin cracks, probably caused by sudden contraction are present on the lion figures of the first causeway.

#### 10.3.2.2. *Erosion of the Stone*

The areas which are most exposed to the rain have suffered the maximum damage. The clayey matter in the rock is leached away by the mechanical force of rain water, carrying with it the quartz and other mineral grains, causing erosion of the rock. This process, continuing for a very long period of time, can even lead to collapse of structures. The entire verandah in both the wings of the West gallery of the fourth enclosure has disappeared on this account.

The five lotus bud towers of the first enclosure and the towers at the corners of the second enclosure are found to have undergone the maximum degree of erosion. The coating of stucco applied in the sixteenth century must have afforded some protection to the towers till it lasted but now, except for a few fragments here and there, the stucco layer has completely disappeared and the stone is exposed to the erosive action of rain water. On the upper parts of the towers, the stone is in a highly eroded state and all carvings have entirely been destroyed. In the lower portions of the towers, however, carvings and sculptures of *apsara* figures in relief have still survived. On the lotus bud towers, at higher levels carved stone blocks that have partly been eroded are precariously perched at the edges. At the corners of the towers, where rain water has been flowing down with force, the stone is deeply eroded and the carvings and *apsara* figures have been badly damaged.

On all towers there are large brown patches of clayey matter resulting from the disintegration of the rock. This clay is washed down by the rain water and has formed peculiar honeycomb shaped deposits on some of the carvings and sculptures below the towers and even on the plinths in some places.

#### 10.3.2.3. *Soluble Salts*

In order to test the presence of the two salts viz., chloride and sulphate, that are commonly present in rocks and cause problems, small quantities of weathered rock were collected from as many as hundred different locations from all parts of the monument. Out of the 100 samples examined, 61 samples answered 'nil' for chloride, 5 samples gave a positive result and 34 samples were found to contain only faint traces of chloride. As for sulphate, 60 samples gave negative result, 18 samples were found to contain sulphate and 22 samples only small traces of it.

Samples of the natural soil below the fourth enclosure of the temple and samples of the filled in earth of the other three enclosures were also tested for chloride and sulphate and all the samples gave negative results. Further, moisture readings at various levels confirmed that moisture is not passing from the soil into the stone. The presence of chloride in 5% of the samples and of sulphate in 18% of the samples and their presence in traces in 34% and 22% of the samples respectively should, therefore, be attributed to the fact that sandstone itself usually contains small quantities of salts.

The fact of the insignificant percentage of soluble salts in the samples indicates that these are not playing a major role in the deterioration of the rock in the monument.

#### 10.3.3. **Bio-deterioration**

##### 10.3.3.1. *Vegetational growth*

All around the monument copious and rapid vegetational growth occurs due to the tropical climate. Constant attention has to be paid to their eradication.



### 10.3.3.2. *Micro-vegetational growth*

The entire surface of the monument on the exterior, including the outer pillars of galleries, is covered with thick growths of a variety of cryptogamous organisms such as mosses, lichens, algae and Fungi. In the interior, there are patches of dark and greenish moss in some places on the walls of the first and third galleries, due to seepage of moisture.

Actinomycetes, which particularly attack sandstone monuments, have been identified at Angkor by earlier workers. Several streptomycetes species have been isolated and their bio-chemical characteristics identified.\* The frequency of occurrence of these micro-organisms on weathered stones would seem to indicate that they play a part in the complex process of deterioration of such materials. They are capable of transforming nitrates into nitrites and sulphates into sulphide, and are often associated with thio-bacteria and particularly with nitrifying bacteria.

Stone samples, collected by the team, were examined in the Department of Microbiology of Osmania University, Hyderabad, and the presence of Actinomycetes has been again confirmed.

Another organism identified by previous workers at Angkor is a fungus, *Penicillium Lilacnum*. It consists of woolly colonies, lilac to wine-pink in colour, and is found to occur extensively at Angkor Wat, particularly on the horizontal surface of plinths.

A study of the distribution of these growth on the monument shows that mosses occur extensively over surfaces that are directly exposed to rain or water flow and remain damp for appreciable periods.

Lichen growth of two types have been observed at the monument. One is a crustaceous type occurring in large round patches. It is powdery and white outside but light green in colour inside. It is found to be tenaciously adhering to the rock surface. Another type of lichen is a foliaceous type of light blue colour occurring in needle-like colonies. Both types of lichens are of equally wide occurrence in the monument.

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\*By G. Hyvert (See page 51 of "The Conservation of Cultural Property" UNESCO, 1968).

Even while collecting samples of the cryptogams, it could be noticed that the rock surface has been rendered quite friable. Undoubtedly these organisms, in combination with the various physico-chemical factors present, are contributing to the deterioration of stone.

#### 10.3.3.3. *Bat droppings*

As in the case of many old buildings and monuments, the nuisance of bats is another serious problem present in Angkor Wat. The urine and excreta deposited by them on the ceilings and upper parts of walls have formed large patches of whitish deposit. This deposit has been washed down to the lower levels of the walls by rain water in many places. The white patches are not only disfiguring but, the salts contained in them may have an adverse effect on the stone in the long run.

#### 10.4. Wall Paintings

Remains of wall painting executed in sixteenth century have been observed on the walls of the fourth gallery, in the entrance hall of the third gallery and on the walls, pillars and beams of the cruciform between the second and third enclosures and on the same portions inside the Main shrine of the first enclosure. The painting on the pillars and beams consists of floral designs. The pattern on the walls has been obliterated due to water seepage and is also covered with large patches of bat droppings.

The painting has been done mainly in red ochre on a very thin lime plaster, hardly 1 to 2 mm in thickness, applied over the stone surface. Patches of orange and brown colours are also found in some places. The lime plaster on the walls of the cruciform are thicker, i.e. 5 to 6 mm, and is found to be peeling off from the stone surface in some places.

#### 10.5. Polychrome Sculptures

Thirty Buddha statues, mostly of wood, in the south gallery of the cruciform, are painted. There is also a large 'Buddha *pada*' painted in red and gold colours. Red, orange and blue colours applied on the



Buddha figures have peeled off in places. The wood has also been affected by dampness and insect attack. The statues need preservative treatment.

#### 10.6. Old Wood Work

A few carved wooden beams found in the interior of the towers of the first and second enclosures have been rendered fragile by moisture, fungus etc. These beams are remnants of the original wood work used at the time of the construction of the temple and therefore need to be treated and preserved.

#### 10.7. Conservation Measures Recommended

The measures to be adopted for the proper conservation of monuments have two aspects: (i) ameliorative, (ii) preventive. In making the following recommendations for the conservation of Angkor Wat, both the aspects have been kept in view.

##### 10.7.1. *Cleaning*

###### 10.7.1.1. *Clearing of the Exterior*

The first step to be taken is the cleaning of the stone surface with a view to the complete removal of the micro-vegetational growth and any accretion of dust and dirt.

The growth of mosses, lichens and algae is first softened with a 5% solution of ammonia (prepared by suitably diluting liquor ammonia of specific gravity 0.88 with distilled water) and then removed by scrubbing with a coir or nylon brush of the requisite hardness. This is followed by a thorough rinsing of the stone surface with plain water. A non-ionic surface active re-agent like Lissopol-N may be used in 1 to 2% solution in water, for further facilitating the removal of the growth and accretion. While scrubbing, care must be taken to see that the friable stone surface is not damaged.

###### 10.7.1.2a. *Cleaning of the Interior: Stone Surface*

The interior portions of the monument need cleaning for the removal of dust, dirt and deposits of bat droppings. For the removal

of dust and dirt, the use of a detergent solution like Lissopol-N (1 to 2%), followed by scrubbing and rinsing, would suffice.

The deposits of bat droppings do not yield to any of the normal solvents and the use of strong acids is, of course, ruled out. The deposits should therefore be removed by careful mechanical means after first softening them with water or a 5% solution of Acetic Acid. Bamboo sticks or wooden scrapers may be used for the mechanical cleaning.

The patches of moss growth found in several places in the interior may be removed by the same method as suggested for the exterior.

Patches of tarry and oily matter found in some places are to be removed by using Benzene and Carbon tetra chloride.

#### 10.7.1.2b. *Cleaning of the interior Wall-paintings and Polychrome Sculptures*

They need only general cleaning for the removal of dust and dirt and this can be achieved with the help of organic solvents like Isopropyl alcohol and Iso butyl alcohol. Whitish deposits of bats' excreta overlying the paintings may be removed by mechanical means, taking care not to spoil the paintings underneath.

The cleaning of the polychrome sculptures can also be carried out with the help of the organic solvents mentioned above.

#### 10.7.2. *Fungicidal Treatment*

After cleaning is completed, the stone surface in the exterior of the monument is to be treated with a Fungicide/Herbicide for preventing further growth of micro-vegetation and the application has to be repeated every few years, as required. For this purpose either a 5% aqueous solution of Zinc Silico Fluoride or a 2% solution of Sodium Penta chloro phenate may be used. It would be convenient to spray the fungicidal solution on to the stone surface.

#### 10.7.3. *Extraction of Soluble Salts*

In the few places where soluble salts are found to be present in the stone, they need to be extracted completely, using either Sepiolite pack or paper pulp.



#### 10.7.4. Consolidation of Friable Rock

Taking into consideration all relevant aspects, Epoxy resin is recommended for the consolidation work. Araldite CY 212 with Hardner HY 951, suitably diluted to the required consistency with Methyl Ethyle Ketone, may be used.

It would be best if a suitable *in situ* vacuum impregnation technique could be devised for the consolidation. If such a method is not available, the next best alternative may be to warm up the stone surface with the help of infra-red lamps before each application of the consolidant liquid so that the rock pores get expanded allowing the liquid to go deep inside.

#### 10.7.5. Application of Preservative

The final step in the treatment is the application of preservative. The use of 1% solution of Polymethyl methacrylate in Toluene is recommended. The solution may be applied either by spraying or with a brush. It leaves a thin, colourless and perfectly transparent film on the stone surface. The film has toughness as well as resilience.

#### 10.7.6. Application of Water Repellant

Since rain water is playing such a major role in the weathering of the stone in this monument, it would be advisable to apply a coat of some water repellant formulation on the stone surface as a final measure so that the impinging rain water would slip off the surface and would have no chance of remaining in contact with it and getting absorbed into the rock. One of the Silicone compounds can be used for the purpose.

The cost involved would be enormous in view of the huge size of the monument, but at least the outer surfaces of the towers of the first and second enclosures, which have suffered such heavy erosion and which are subject to the maximum degree of exposure to rain, may be given water repellant treatment.

## 10.8. Break-up of the Conservation Measures to be Adopted

### 10.8.1. *First Causeway*

Thick moss and lichen growth with a few patches of algae on the *Naga* balustrades, *Naga* heads and the lion figures and also the patches of ochre colour on the *Naga* heads near the entrance are to be cleaned. The cleaning should be followed by application of fungicide and preservative.

The few thin cracks found in some of the Lion figures may be filled up with Epoxy resin.

### 10.8.2. *Fourth Enclosure*

Both the west and east outer faces are covered with thick moss growth and smaller patches of lichens all over the surface. There are very few patches of algae.

Deeply eroded surface of the rock, particularly on the entrance towers, plinths, lower portions of pillars and walls and the inner surface of the semi-vaulted roofs need consolidation. While the area requiring consolidation on the inner surface of the semi-vaulted roof has been estimated as 20% of the total area, that on the other areas mentioned above comes to 10% of the total area.

After cleaning and consolidation fungicide and preservative solutions are to be applied.

In the interior, general cleaning for the removal of dust, dirt and bat droppings has to be carried out, besides removal of patches of moss growth wherever found. Areas covered with moss growth may be given fungicidal treatment after cleaning.

### 10.8.3. *Second Causeway and the two Libraries*

The *Naga* balustrades of the second causeway are also covered with thick micro-vegetational growth in addition to exfoliation of stone because of temperature changes. Cleaning, consolidation of the edges of exfoliated stone with Epoxy resin and application of fungicide and preservative are to be carried out.

Besides severe rock erosion on the pillars, doorways and lintels



the porches of the two libraries on either side of the causeway have suffered badly with their ceilings having collapsed.

Mosses, lichens and algae have grown in patches on account of water seepage in the interior. The exterior, of course, is covered with thick growth of these organisms; patches of ochre colour are present on the pillars in the interior.

The work consists of cleaning, consolidation of fragile rock, fungicidal treatment and preservation.

#### 10.8.4. *Naga Railing*

The problems and the conservation measures to be adopted are similar to those of the *Naga* balustrades of the first and second causeways.

#### 10.8.5. *Dancing Platform* (Esplanade)

The undulating, carved, vertical surface of the platform is covered with a thick growth of dark moss and patches of lichen. Consolidation of the weakened rock, cleaning, fungicidal and preservative treatments are to be carried out.

#### 10.8.6. *Third Enclosure*

The entire outer surface including the outer pillars of the galleries are covered with thick, dark moss growth. Lichens occur in large patches on the western and southern wings, whereas they cover almost the whole surface of the northern and eastern wings. Patches of algae are also present.

Extensive rock erosion can be observed on all the entrance towers and the plinths. The carved panels, depicting mythological scenes, above the various entrances along with the lintels and lower portions of doorways are badly eroded. On the vaulted and semi-vaulted roofs, on the outside, rock erosion has occurred on a few small areas.

The interior surface of the semi-vaulted roofs has also suffered severe erosion. The lower portions of all the inner pillars of the galleries, the lower portions of walls including *apsara* figures and the areas below the grilled windows, besides many of the grills, are all eroded.

In some places, surface erosion of the rock has occurred on the gallery walls, carrying the bas reliefs, due to water seepage. Patches of dark and greenish moss growth also occur on the walls and on the inner surface of the vaulted roofs, due to the same reason.

Large whitish patches of bat droppings are present on the ceiling and upper parts of the walls. These have been washed down to lower levels, even to the bottom of the wall, in some places.

In the western and northern entrance halls, there are some patches of painted plaster, obliterated by bat droppings, dust and dirt.

Careful cleaning, of the exterior surface for the removal of moss, lichen and algae growths and in the interior for removing the moss patches, has to be carried out. In the interior general cleaning is to be done for removing the patches of bat droppings and of dust, dirt etc. Special care has to be exercised in removing these patches from the painted areas. The paintings should subsequently be cleaned with organic solvents for bringing out the details and colour values to the maximum extent possible.

After cleaning, consolidation of the fragile rock, extraction of soluble salts wherever found to be present, application of fungicide and preservative, are to be carried out. The cleaned painted areas are also to be preserved with a 2.5% solution of Poly Vinyl Acetate in Toluene.

#### 10.8.7. *Cruciform and Galleries*

The exposed surface *viz.* those of the vaulted and semi-vaulted roofs of the four quadrangles, the pillars skirting them and their plinths, are all covered with thick moss and lichen growth and small patches of algae.

All the inner pillars and the walls, including *apsara* figures, are eroded at their lower portion. The roof is also eroded in places. The roof as well as the carved panels just below the roof are covered with thick deposit of bat droppings.

The walls of the northern and southern galleries have patches of painted plaster, which is peeling off in some places. The colours have



been washed off in places due to water seepage. The paintings are covered with large patches of bat droppings.

On the beams and upper parts of pillars, floral designs painted in red ochre on a thin plaster, still survive in large patches.

There are thirty polychrome Buddha statues, most of them of wood and some of stone, in the south gallery.

The work consists of cleaning for the eradication of the moss, lichen and algae; consolidation of all fragile portions of rock; extraction of soluble salts, that may be present, application of fungicide and preservative.

The wall surfaces and roof are to be given general cleaning for the removal of dust, dirt, bat excreta etc., taking care not to damage the paintings in any way.

The paintings and polychrome sculptures are to be cleaned with organic solvents such as Isopropyl alcohol, Isobutyl alcohol, n-butyl alcohol etc. and preserved with a 2.5% solution of Poly Vinyl Acetate in Toluene.

#### 10.8.8. *Two Libraries between the Third and Second Enclosures*

In both the libraries, severe rock erosion is in evidence on the exterior. There has also been much water seepage and rock erosion in the interiors. The rock is peeling off in a thin layer on the eastern pilaster of the North Library.

The whole outer surface is covered with thick moss and lichen growth besides patches of algal growth.

Cleaning, consolidation, fungicidal application and preservation are to be carried out.

#### 10.8.9 *Second Enclosure*

The towers at the four corners are very badly eroded, carvings at the upper portions having completely disappeared. At the lower levels, groups of *apsara* figures are severely damaged, particularly at the north-east and south-east corners, due to prolonged flow of rain water. In the former case some *apsara* figures are obliterated, only their outlines being seen. On one of the remaining figures, the top layer of rock is peeling off on the face, illustrating the mode of the erosion.

There is also rock erosion on all the entrance towers, porches, the upper and lower plinths. On the windows many of the carved columns have completely disappeared. The carved panels on the entrance towers are severely eroded.

There is a thick growth of moss and lichen, along with some patches of algae on the entire outer surface, the growth of lichen being more pronounced on the northern and eastern sides.

In the interior of the galleries, there are thick deposits of bat droppings on the roof and upper portions of walls. There is also rock erosion at the lower levels of the walls. In the interior of the towers, there are patches of moss growth.

The rock that has been rendered weak and friable by water erosion is to be consolidated with Epoxy resin on the lines suggested. Cleaning of all affected areas for the removal of the micro-vegetational growth, application of fungicide and preservative and general cleaning of the interior of the galleries, besides consolidation of the weakened portions of rock are to be carried out.

There are a few old carved wooden beams in the interior parts of the towers. They may be cleaned with organic solvents and preserved with a 2% solution of Beechwood Creosote.

#### 10.8.10. *The Libraries between the Second and First Enclosures*

The problems are the same as in other libraries and consist mainly of severe rock erosion and profuse growth of moss, lichen and algae on the exterior. There has been water seepage, resulting in rock erosion in parts of the interior also. There are patches of moss growth in the interior.

The treatment to be carried out is the same as that suggested above for the other libraries.

#### 10.8.11. *First Enclosure*

The four lotus bud towers at the corners and the one above the main shrine at the centre have been heavily eroded. The carvings on the upper portions of the tower have completely disappeared while those at the lower levels, including the *apsara* figures, still survive



except at places which have been subjected to water flow. Fragments of stucco are found on the towers.

The porches of the entrances and the upper as well as lower plinths have suffered erosion. The doorways and lintels of various entrances have also been badly eroded.

The entire exterior is covered with thick growth of mosses and lichens along with patches of algae. The stairways on the northern and eastern sides are covered with thick algal growth.

In the interior, the lower portions of all pillars, walls and the doorways including carvings and *apsara* figures are eroded. The inner surface of the semi-vaulted roofs is highly eroded. All the exposed surfaces including the roofs of the quadrangles and outer pillars are covered with thick moss and lichen growth. There are patches of dark and greenish moss in other areas of the interior also. There are large patches of moss growth in the interior of the towers.

There are patches of painted plaster containing floral designs in ochre colour on the beams and in a few places on the walls.

The work here consists of cleaning for the complete removal of moss, lichen and algal growth, consolidation of all portions, where the rock has become weak and friable, extraction of soluble salts, that may be present, and finally application of fungicide and preservative.

The painted fragments need cleaning with organic solvents and preservation with Poly Vinyl Acetate solution.

## Recommendations

SINCE the temple of Angkor Wat is spread over an extensive area, the execution of the proposed conservation works will take a minimum period of six years, the work in each year restricted to six months. The team required for undertaking the execution of the work should comprise an archaeologist experienced in conservation as the leader of the team besides the following:

- |   |                                  |
|---|----------------------------------|
| —Archaeologist (Leader of the team)               |                                  |
| —Deputy Superintending Archaeological Engineer    | Engineering Experts              |
| —Assistant Superintending Archaeological Engineer |                                  |
| —Senior Conservation Assistant                    |                                  |
| —Conservation Assistant                           |                                  |
| —Deputy Superintending Archaeological Chemist     | Archaeological Chemistry Experts |
| —Assistant Superintending Archaeological Chemist  |                                  |
| —Senior Chemical Assistant/Chemical Assistant     |                                  |
| —Photographer                                     | Technical hands                  |
| —Surveyor/Draftsman                               |                                  |
| —Modeller   | Restoration hands                |
| —Mason  |                                  |
| —Assistant  | Office helper                    |



It is a universally well known fact that the temple of Angkor Wat is a monument of international importance and the people of Kampuchea feel proud of it. Hence, the Government of Kampuchea may be requested to participate in the work by sharing the responsibility to whatever extent it may be possible.

A statement of the works to be undertaken in each year along-with the expenditure involved is enclosed as appendices. Most of the equipment and even materials required in the conservation works will have to be drawn from India. If some minor works remain incomplete after six years they will be attended to by the officials of the Department of Conservation in Kampuchea, who will have developed adequate expertise during six years of work by Indian experts.

# Report on Recommendation for Soil Classification

## 1. Introduction

The Archaeological Survey of India requested the Head, Soil Engineering Laboratory, Indian Institute of Technology, Madras, to classify the soils taken at Angkor Wat site, Kampuchea.

This report deals with the soil classification, observations and recommendations.

## 2. Background Material

The stupendous temple of Angkor Wat was erected approximately in the twelfth century. It has been gathered that, with the shifting of the capital in the fifteenth century, the water works system and consequently the temple, for lack of maintenance, was disturbed. After the French took over this part of the world in 1863, as a protectorate the temple got some maintenance.

It should be remembered that, inspite of neglect from sixteenth century to nineteenth century, Angkor Wat remained as a monument with some distress in corridors. The corridors consist of an end wall and a row of interior columns and exterior columns. The wall and exterior columns have been supported by stone foundation. The interior columns which carry more load than the exterior columns had relatively less stone foundation than the exterior columns. The area between the third corridor and second corridor was not paved whereas the area between second and first corridors was paved. The distress in the third corridor had been maximum, that too on the southern wing (where Samudramanthan panel was there). The third corridor had been distressed perhaps due to appreciable settlement of the intermediate columns and had led to the failure of the beams between two sets of columns. It should be appreciated that the first and second corridors had relatively less distress than the third corridor inspite of nearly approximately 800 years old construction.

The Archaeological Department of India had collected two bed soil samples (not undisturbed samples) in the Angkor Wat area. (One dark brown gravelly soil taken at a depth of 0.5 m and the second soil, buff colour soil taken at a depth of



1.5 m. from ground level.) The Department requested Indian Institute of Technology, Madras to classify these two soils based on the Laboratory Test.

During the discussion Professor Sankaran had with Mr. Kanade of the Archaeological Survey of India during 13th, 16th, 23rd and 30th August 1982 the following facts have been brought out and this forms the basis of the analysis and recommendations.

The dark brown soil is a natural soil and it occurs approximately upto 0.7 m. depth; perhaps it is a transported soil for nearly 500 years old. Below the soil one obtains brown colour (buff colour) soil. It has been gathered that this soil occurs for a great depth, and rock was not available for many metres depth.

### **3. Laboratory Test**

The two soil samples have been tested in Laboratory for various tests and the results are presented in Table 1 to 5. Grain size distribution curves are presented in Figures 1 and 2.

### **4. Discussion**

The Laboratory Test clearly indicates that both the top soil (Dark Brown Soil) and the soil below (Buff Colour Soil) do not contain even a trace of clay. Both are silty soils.

Assuming there is settlement of the interior columns, it had taken place very long back. Also the distress of the superstructure should have taken place long back. There is no question of time dependent settlement of the buff colour soil which is for greater depth. It can be concluded that the structure with the present deformation is in a new equilibrium for a long time. The cracks are old and not of recent origin. There can not be further settlement of the soil and hence there cannot be further distress in the superstructure due to foundation.

Therefore it is recommended that foundation should not be disturbed in the process of renovations and maintenance of Angkor Wat. It is recommended to point the top of all the galleries and to provide proper drainage so that no water is stagnated around the temple and the monument will be better preserved.

In the southern portion of the third corridor the French had removed the columns, dome, slab etc. They had also provided at the foundation level a raft to support the interior row of columns. It is not clear how exactly they have carried out the repairs in the foundation. If the Archaeological Department of India is going to reconstruct the corridor by the assemblage of stones of the twelfth century a new stress field will be generated in the superstructure and the distress in the foundation and superstructure will be developed. A new pattern of cracks will appear depending upon the foundation treatment given by the French.

**5. Summary**

Professor K.S. Sankaran has been requested by the Archaeological Department for soil classification, observations and recommendations. He has classified the two soils as silts. He is of the opinion that Angkor Wat is in a new equilibrium over a period of years and any monumental preservation programme should not disturb the existing foundation in as much there is no trace of clay. The French have given foundation treating to the southern end of the third corridor. If the Archaeological Department is going to reconstruct this portion of corridor they may create a new stress field which may lead to the distress in the superstructure of the newly constructed portion of the third corridor.

K.S. SANKARAN



**Abstracts of Costs on Conservation  
Structural Preservation**

<i>Sl. Details of Sub-estimate No.</i>	<i>Estimated amount</i>	<i>Provision for</i>	
		<i>Labour</i>	<i>Materials</i>
	Rs.	Rs.	Rs.
1. Causeway No. 1. . . (between Main road and fourth Enclosure)	19,20,955	15,59,600	3,61,355
2. Fourth Enclosure	21,89,103	18,38,445	3,50,658
3. Causeway No. 2 including Esplanade	7,59,005	6,28,250	1,30,755
4. Library between Third and Fourth Enclosures	5,61,693	4,60,450	1,01,243
5. Third Enclosure	13,04,469	9,95,495	3,08,974
5a. East Corridor of Third Enclosure South Wing—Rebuilding only	5,80,844	4,84,533	96,311
5b. Third Enclosure Corridors (To be dismantled and re-built)	28,87,635	24,86,800	4,181,835
6. Library between Second and Third Enclosure	3,38,390	2,76,181	62,209
7. Cruciform Gallery	2,26,923	1,55,890	71,033
8. Library between First and Second Enclosures	1,57,541	1,24,412	33,129
9. Second Enclosure	8,90,072	6,81,487	2,08,585
10. First Enclosure including Main Shrine	12,65,592	10,20,974	2,44,618
11. Drainage inside	42,594	13,987	28,607
<b>Total Rs. 1,31,24,816</b>			
<b>Or Say Rs. 1,31,25,000</b>			
<b>(Rupees One crore thirtyone lakhs twentyfive thousand only)</b>			

*Appendix C*

**Abstracts of Costs on Conservation  
Chemical Preservation**

<i>Sl. No.</i>	<i>Details of Sub-estimate</i>	<i>Estimated amount</i>	<i>Provision for</i>	
			<i>Labour</i>	<i>Materials</i>
		Rs.	Rs.	Rs.
1.	Causeway No. 1 (between Main Road and 4th Enclosure)	2,42,174	1,40,873	1,01,301
2.	Fourth Enclosure (including North, East and South gates)	31,75,455	15,73,391	16,02,064
3.	Causeway No. 2 and two libraries between Fourth and Third Enclosures	8,90,037	5,46,089	3,43,948
4.	Naga railing around Third Enclosure	4,93,986	3,05,085	1,88,901
5.	Dancing platform (Esplanade)	1,62,313	1,00,118	62,195
6.	Third Enclosure (West, North, East and South galleries)	49,45,222	27,18,621	22,26,601
7.	Cruciform Gallery	15,79,290	7,99,165	7,80,125
8.	Libraries between Third and Second Enclosures	7,86,588	2,94,061	4,92,527
9.	Second Enclosure (West, North, East and South galleries)	41,23,658	18,02,161	23,21,497
10.	Libraries between Second and First Enclosures	1,92,882	73,661	1,19,221
11.	First Enclosure including Main Shrine	61,77,127	21,79,272	39,97,885
12.	Extraction of soluble salts from the stone (entire monument).	20,17,814	18,63,235	1,54,579
Total Rs.		2,47,86,546	1,23,95,732	1,23,90,814
Or Say Rs. 2,47,87,000				
(Rupees two crore, fortyseven lakh, eighty-seven thousand only)				



## Works Programme—Structural Conservations

Year	Details of Work	Estimated amount		
		In Rupees	Foreign Currency (Rs.)	Total*
1	2	3	4	5
I year	1. Dismantling and rebuilding of Western Corridor (South) of Third Enclosure 2. Library between Third and Fourth Enclosures 3. Causeway 2 and Esplanade 4. Drainage inside	1,85,074	16,50,863	18,35,937
II year	1. Dismantling and Rebuilding of Western Corridor (North) of Third Enclosure 2. Fourth Enclosure	2,75,581	23,86,167	26,61,748
III year	1. Dismantling and Rebuilding of North Corridor (East) of Third Enclosure 2. Library between Second/Third Enclosures 3. Third Enclosure (other than Corridors which are to be Dismantled and Rebuilt)	2,97,665	19,52,827	22,50,492
IV year	1. Dismantling and rebuilding of North Corridor (West) of Third Enclosure 2. Cruciform Gallery 3. Second Enclosure	2,39,998	17,39,064	19,79,062

1	2	3	5	6
V year	1. Dismantling and Rebuilding East Corridor (North) of Third Enclosure	2,17,113	16,78,665	18,95,778
	2. Library between First and Second Enclosures			
	3. First Enclosure and Main Shrine			
VI year	1. Rebuilding of East Corridor (South) of Third Enclosure	2,88,898	22,12,901	25,01,799
	2. Causeway 1			
Total		15,04,329	1,16,20,487	1,31,24,816

\* At Exchange rate of 1 US \$ equals to Rs. 9.30



## Works Programme—Chemical Conservation

Year	Details of Work	Estimated Amount		
		In Rupees	Foreign Currency (Rs.)	Total* (Rs.)
1	2	3	4	5
I Year	(1) Fourth Enclosure including North, East and South Gates			
	(2) Second Causeway and Two libraries between Third and Fourth Enclosures	19,71,775	24,30,019	44,01,794
	(3) Cleaning, salt extraction consolidation, fungicidal and preservative treatment			
II Year	(1) <i>Naga</i> railing around Third Enclosure			
	(2) Cruciform Galleries			
	(3) Libraries between Second and Third Enclosures	16,06,537	17,82,511	33,89,048
	(4) Libraries between first and Second Enclosures			
III Year	(1) Second Enclosure exterior and interior of Galleries	23,47,260	21,12,700	44,59,960
	(2) Cleaning, salt extraction, consolidation, fungicidal and preservative treatment			

	1	2	3	4	5
IV Year	(1) First Enclosure				
	(2) Third Enclosure South Gallery				
	(3) Cleaning, salt extraction, consolidation, fungicidal, preservative and water repellent treatment		25,81,340	20,79,831	46,61,171
V Year	(1) First enclosure				
	(2) Third Enclosure, west Gallery				
	(3) Cleaning, salt extraction, consolidation, fungicidal and preservative treatment		25,81,340	20,79,831	46,61,171
VI Year	(1) Esplanade.				
	(2) First causeway				
	(3) Third Enclosure, north and east Galleries				
	(4) Cleaning, salt extraction, consolidation, fungicidal treatment and preservative		13,02,562	19,10,840	32,13,402
Total Rs.			1,23,90,814	1,23,95,732	2,47,86,546

\* At Exchange rate of 1 US \$ equals to Rs. 9.30



**Tools and Plant, Photographic and Drawing Materials and other Equipments,  
required for works at Angkor Wat**

	Rs.
1. Chain Pulley block:	
2 Ton—2 nos at Rs. 800/- each	... 1,600/-
5 Ton—1 No. at Rs. 1600/- each	... 1,600/-
5 Ton—1 No. at Rs. 400/- each	... 400/-
2. Overhead travelling trolley (Tool) with hand gear etc.	
3 Ton capacity—2 Nos. at Rs. 2500/-	... 5,000/-
3. Air Compressor with diesel engine (big) 1 number at Rs. 55,000/-	... 55,000/-
4. Generating set 10 KW. 1 No. at Rs. 45,000/-	... 45,000/-
Generating set 1.5 KW 2 Nos. at Rs. 4,000/- each	... 8,000/-
5. Pneumatic drilling machine (light duty) 1 number at Rs. 3,000/-	... 3,000/-
6. Hydraulic Jack 1 Number at Rs. 4,000/- each	... 4,000/-
7. Mechanical Jack 2 Nos. at Rs. 600/- each	... 1,200/-
8. G.I. Wire rope 11/16 mm dia-100 metres or 250 kg. at Rs. 4,600/- per M.T.	... 1,150/-
9. Manilla rope 1" to 1 $\frac{1}{4}$ " dia-200 metres each variety	... 1,000/-
10. Hand drill with bits	... 500/-
11. Hammer (Tata):	
10 lb—4 Nos. at Rs. 40/- each	... 160/-
5 lb—2 Nos. at Rs. 30/- each	... 60/-
2 lb—2 Nos. at Rs. 25/- each	... 50/-
1 lb—10 Nos. at Rs. 15/- each	... 150/-
12. Set of Ring spanners—1 set at Rs. 200/-	... 200/-
13. Chisels of different sizes	... 400/-
14. Hose pipe (rubber) $\frac{1}{4}$ " to 1" dia 600 m at Rs. 4/- per metre	... 2,400/-
15. Coupling for hose pipes	... 200/-
16. Pipe wrench (assorted) 2 sets at Rs. 40/-	... 80/-
Screw wrench (assorted) 2 sets at Rs. 40/-	... 80/-
17. Bench vice—2 Nos. at Rs. 75/- each	... 150/-
18. Hand saw (wood) big size 2 Nos. at Rs. 100/- each	... 200/-
-do- small 6 Nos. at Rs. 50/- each	... 300/-





**Cost of Deputation of 13 member Archaeological Survey of India team to Kampuchea  
for a period of 6 months in one working season for carrying out Preservation to  
Angkor Wat**

**A. Indian Currency**

(1) Air Fare (Economy) Delhi—Phnom Penh and back Rs. $13 \times 7248$	94,224.00
(2) Excess baggage on personal effects (at 15 kg) either way. . $2 \times 15 \text{ KG} \times 13 \times \text{Rs. } 47.00$	18,330.00
(3) Embarkation charges at Palam $13 \times \text{Rs. } 100$	1,300.00
	<hr/>
	Total Rs. 1,13,854,00
	<hr/>

**B. Foreign Currency**

Daily allowances of 2 First grade officers at 20 \$ (US) for 180 days stay in Kampuchea	7200 \$ or Rs. 66,960/-
Daily allowances of 11 Nos. of IInd grade officers at 15 \$ for 180 days stay in Kampuchea	29,700 \$ or Rs. 2,76,210/-
Tips at 1.2 \$ per day for 180 days for 13 persons at 10% of Hotel accommodation charges.	2,808 \$ or Rs. 26,114/-
Embarkation charges at Bangkok and Hanoi (both ways) at 6 \$ per person for 13 persons	78 \$ or Rs. 725/-
	<hr/>
	Total : 39,786 \$ or Rs. 3,70,009
	<hr/>

at Exchange Rate of Rs. 9.30 = 1 US \$

Total A + B = Rs. 4,83,863

Or Say Rs. 4,84,000

(Rupees four lakhs eightyfour thousand only)

## Details of Yearwise Expenditure (Proposed)

Year	Structural Preservation		Chemical Preservation		Tools & Plant		Transportation of materials		Deputation of the Team		Total	
	Indian <sup>1</sup> Currency Rs.	Foreign <sup>2</sup> Currency Rs.	Indian <sup>3</sup> Currency Rs.	Foreign <sup>4</sup> Currency Rs.	Indian Currency Rs.	Foreign Currency Rs.	Indian Currency Rs.	Foreign Currency Rs.	Indian Currency Rs.	Foreign Currency Rs.	Indian Currency Rs.	Foreign Currency Rs.
1	2	3	4	5	6	7	8	9	10	11	12	13
1982-83	1,85,074	8,25,432	19,71,775	12,15,009	4,00,000	—	1,00,000	—	1,13,854	1,85,005	27,70,703	22,25,446
1983-84	2,75,581	20,18,516	16,06,537	21,06,265	2,90,000	—	1,00,000	—	1,13,854	3,70,009	23,85,972	44,94,790
1984-85	2,97,665	21,69,498	23,47,260	19,47,606	—	—	1,00,000	—	1,13,854	3,70,009	28,58,779	44,87,113
1985-86	2,39,998	18,45,946	25,81,340	20,96,266	10,000	—	1,00,000	—	1,13,854	3,70,009	30,45,192	43,12,221
1986-87	2,17,113	17,08,865	25,81,340	20,79,832	—	—	1,00,000	—	1,13,854	3,70,009	30,12,307	41,58,706
1987-88	2,88,898	19,45,784	13,02,562	19,95,336	—	—	1,00,000	—	1,13,854	3,70,009	18,05,314	43,11,129
1988-89	—	11,06,451	—	9,55,420	—	—	—	—	—	1,85,005	—	22,46,876
<b>TOTAL</b>	<b>15,04,329</b>	<b>1,16,20,492</b>	<b>1,23,90,814</b>	<b>1,23,95,734</b>	<b>7,00,000</b>	<b>—</b>	<b>6,00,000</b>	<b>—</b>	<b>6,83,124</b>	<b>22,20,055</b>	<b>1,58,78,267</b>	<b>2,62,36,281</b>

\*1. Cost of cement, steel and copper rods to be sent from India.

\*2. Towards cost of labour, stone aggregate, sand, lime etc.

\*3. Cost of chemicals, solvents, fungicides, sepiolite Pack/Paper pulp and preservatives to be sent from India.

\*4. Towards cost of labour.

(At Exchange Rate of 1 US \$ = Rs. 9.30)





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## List of Photographs

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2. General view through the entrance of fourth enclosure.
3. General view of the third enclosure.
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5. Ramayana scene—war with Ravana.
6. *Naga-hood*.
7. Southern Gate.
8. Library between the fourth and third enclosures.
9. Decorated wall of a window.
10. Dancing female figures (*apsaras*)—fourth enclosure.
11. Palace scene with *apsaras*—western corridor of the third enclosure.
12. Dancing female figures (*apsaras*)—western corridor of the third enclosure.
13. Palace scene with *apsaras*—third enclosure.
14. An *apsara*.
15. Ravana shaking the Kailash.
16. Mahabharata scene—death of Bhishma.
17. War scene—third enclosure.
18. Exploits of Vishnu—third enclosure.
19. War scene—third enclosure.
20. Heaven and Hell scene—third enclosure.
21. Palace scene with the king and attendants.
22. South Library between third and second enclosures.



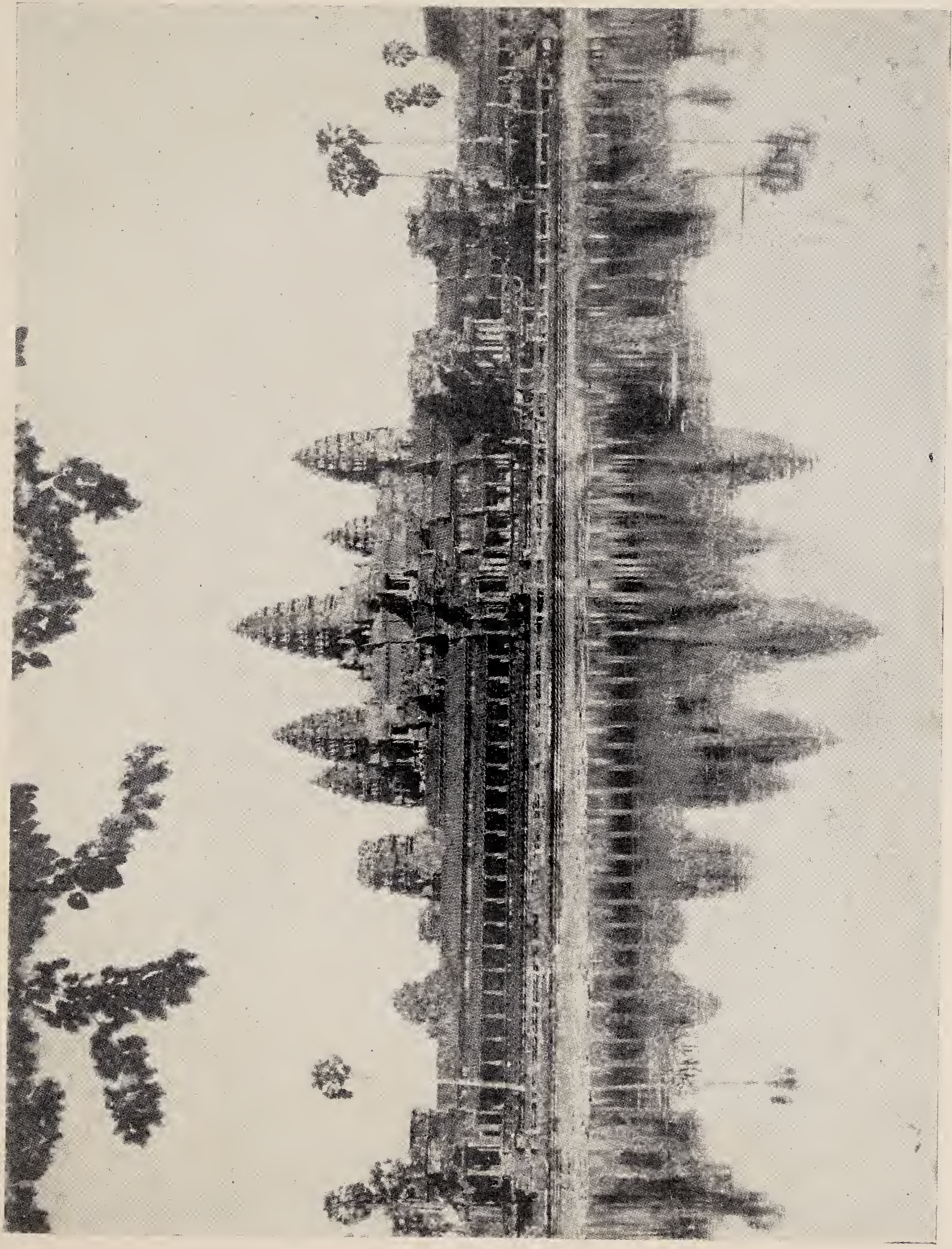
23. Second enclosure, facing south.
24. Water tank in the second enclosure.
25. Steps to the main shrine.
26. Buddha image in the main shrine.
27. Moat—collapsed steps of the embankment.
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29. Fourth enclosure—vegetation.
30. Fourth enclosure—sinking.
31. Fourth enclosure—collapsed porch of the Grandmother Gate.
32. Library (north)—between fourth and third enclosures—out of plumb pillars in porch.
33. Library (north) between fourth and third enclosures—collapsed porch.
34. Library (north) between fourth and third enclosures—widened joints in wall.
35. Third enclosure (west)—widened joints in the floor.
36. Library (south) between fourth and third enclosures—damaged porch and ceiling.
37. Third enclosure (west)—cracked tie-beams of semi-vaulted corridor.
38. Third enclosure main entrance (west)—missing roof of the porch.
39. Third enclosure (west)—cracks in the vaulted ceiling of south gate.
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42. Third enclosure (south)—widened joints in floor.
43. Third enclosure (south)—R.C.C. support to semi-vaulted ceiling.
44. Third enclosure (east)—ceiling dismantled by the French.
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46. Library (north) between third and second enclosures—collapsed porch (west).

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49. Cruciform gallery—damaged pillar with bullet marks.
50. Cruciform gallery—damaged semi-vaulted ceiling.
51. Cruciform gallery—eroded pillars.
52. Cruciform gallery—damaged semi-vaulted ceiling.
53. Cruciform gallery—sunken plinth of porch.
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59. First enclosure (cruciform gallery, east)—damaged porch.
60. First enclosure (north corridor)—eroded flooring and window grills.
61. First enclosure—dislodged plinth (outside).
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64. Main shrine (tower)—cracks in the vaulted roof.
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66. Main shrine (tower, south-face)—vertical cracks.
67. Causeway No. 1—Moss and lichen on *naga* and lion.
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73. Fourth enclosure (main entrance)—growth of moss and lichen.
74. Third enclosure (main entrance)—sealing of *apsara* figure.



75. Third enclosure (north)—thick growth of lichen.
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77. Second enclosure—decayed *apsara* panels.
78. Second enclosure—decayed *apsara* panels.
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81. Second enclosure (southeast tower)—exfoliated pillars of porh.
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89. *Apsara* shown in a niche amidst thick floral decoration.
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91. Banteay Srei—*apsara* in niche with floral decoration.
92. *Apsara* with a typical head-dress and pierced ears.
93. Four *apsaras* in different poses holding various objects in hands.
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95. Two *apsaras* in different poses.
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97. Two *apsaras* with hands intertwined and a locket dangling against the bosom of one.
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99. *Apsaras* with parted head-dress and fan in the raised left hand.
100. *Apsara* holding a play object in the raised right hand.
101. *Apsara* with cap-like head-dress and flower-stalk emerging out.
102. *Apsaras* touching breasts.





























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8





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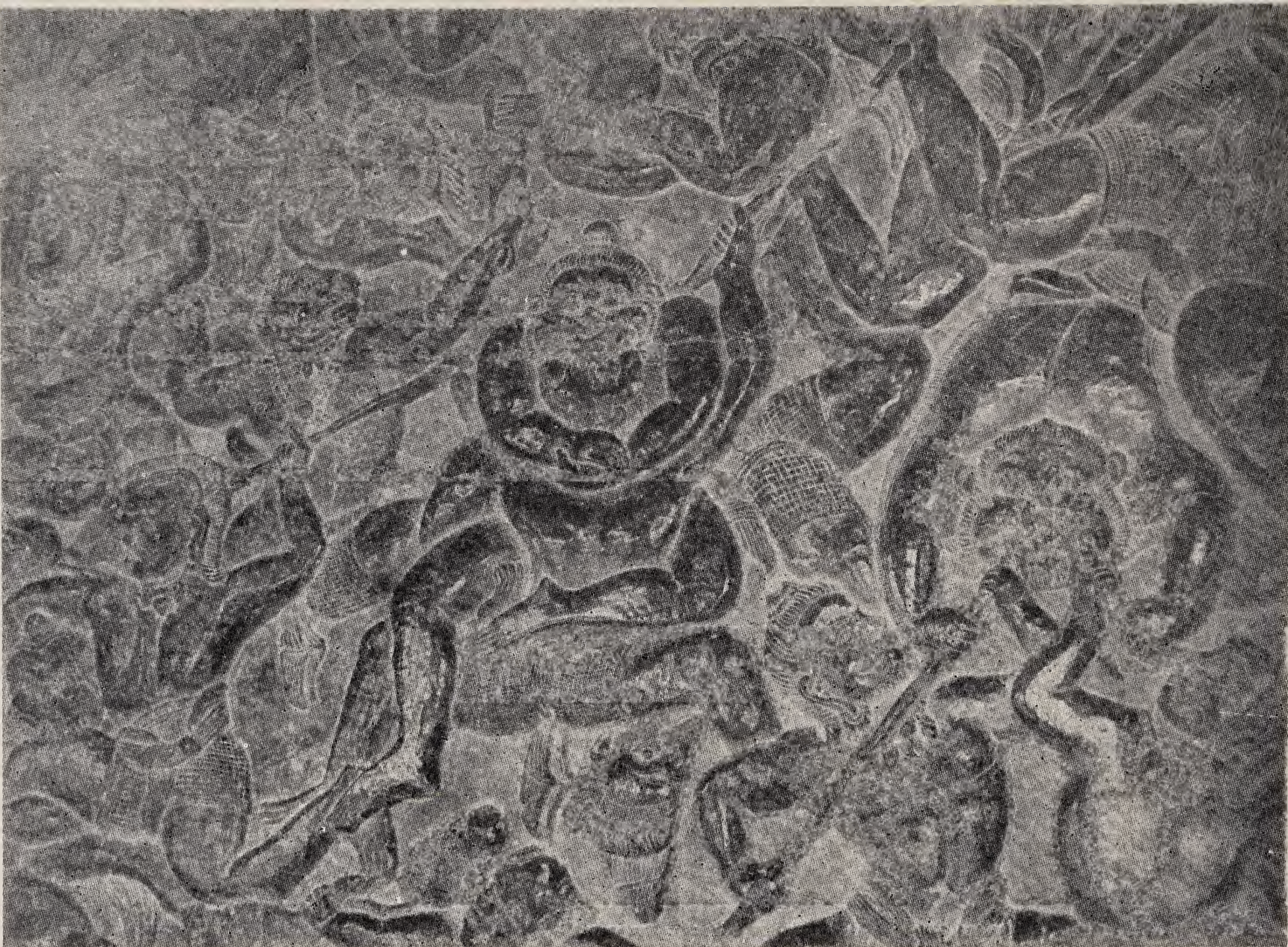


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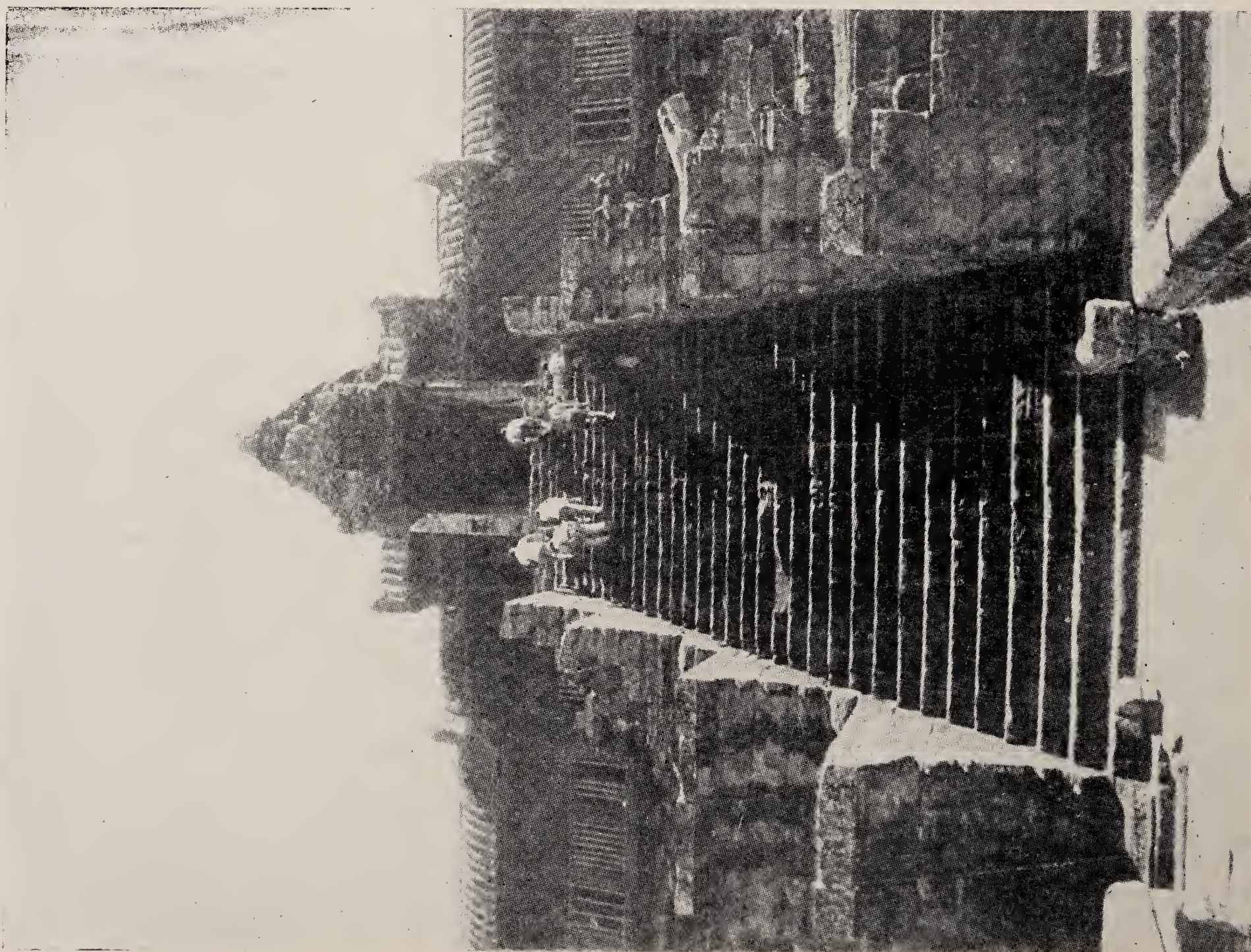


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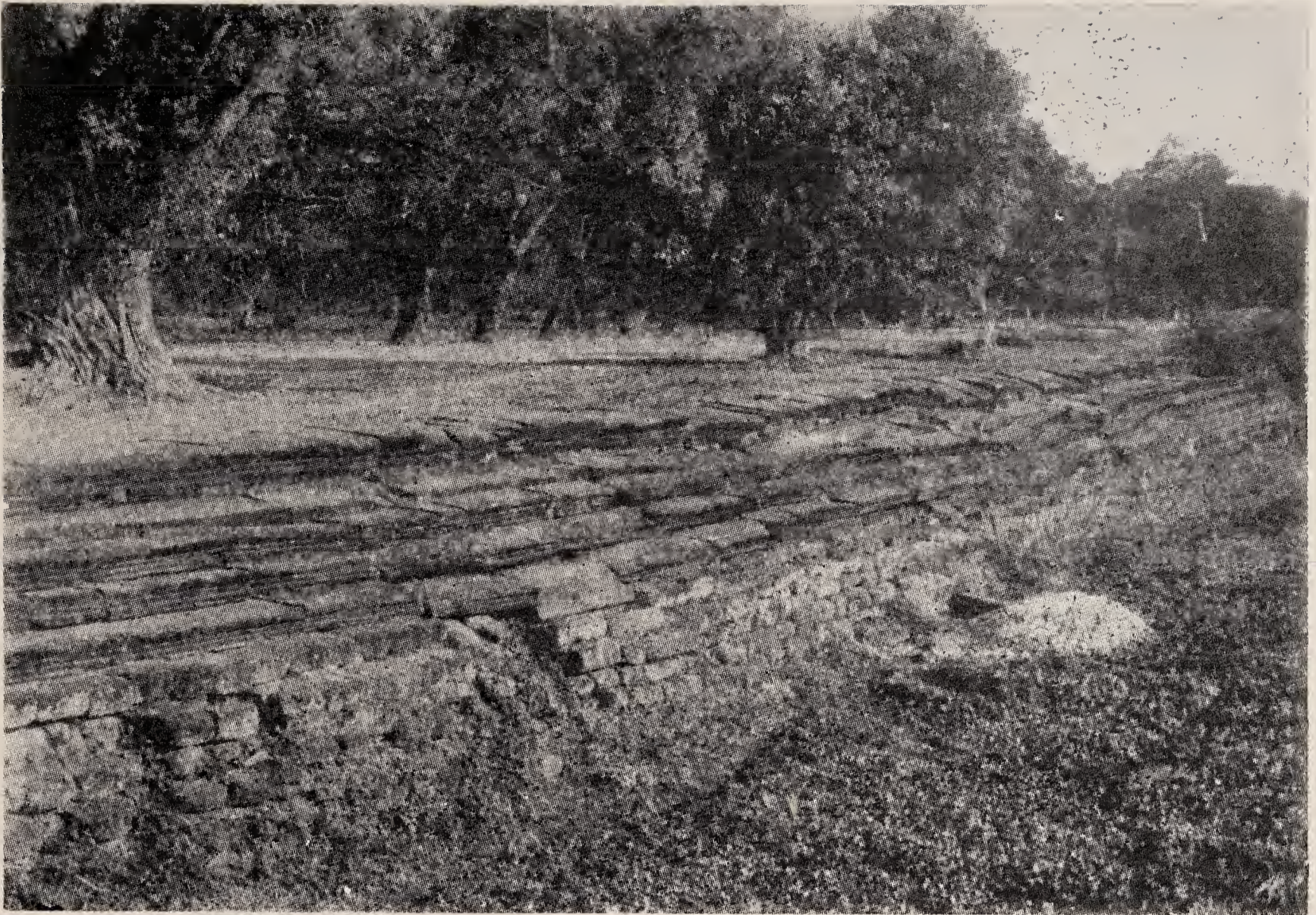










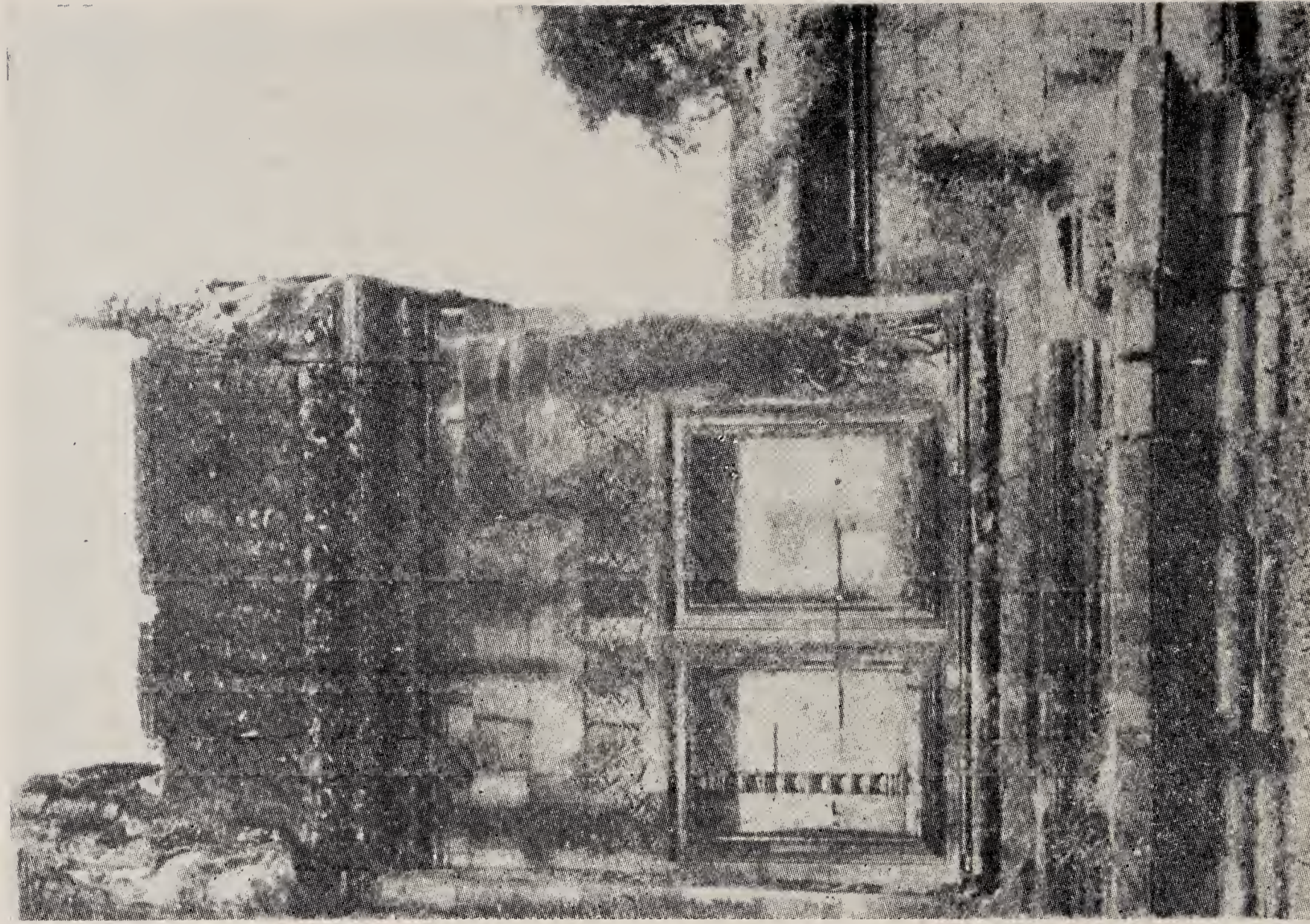
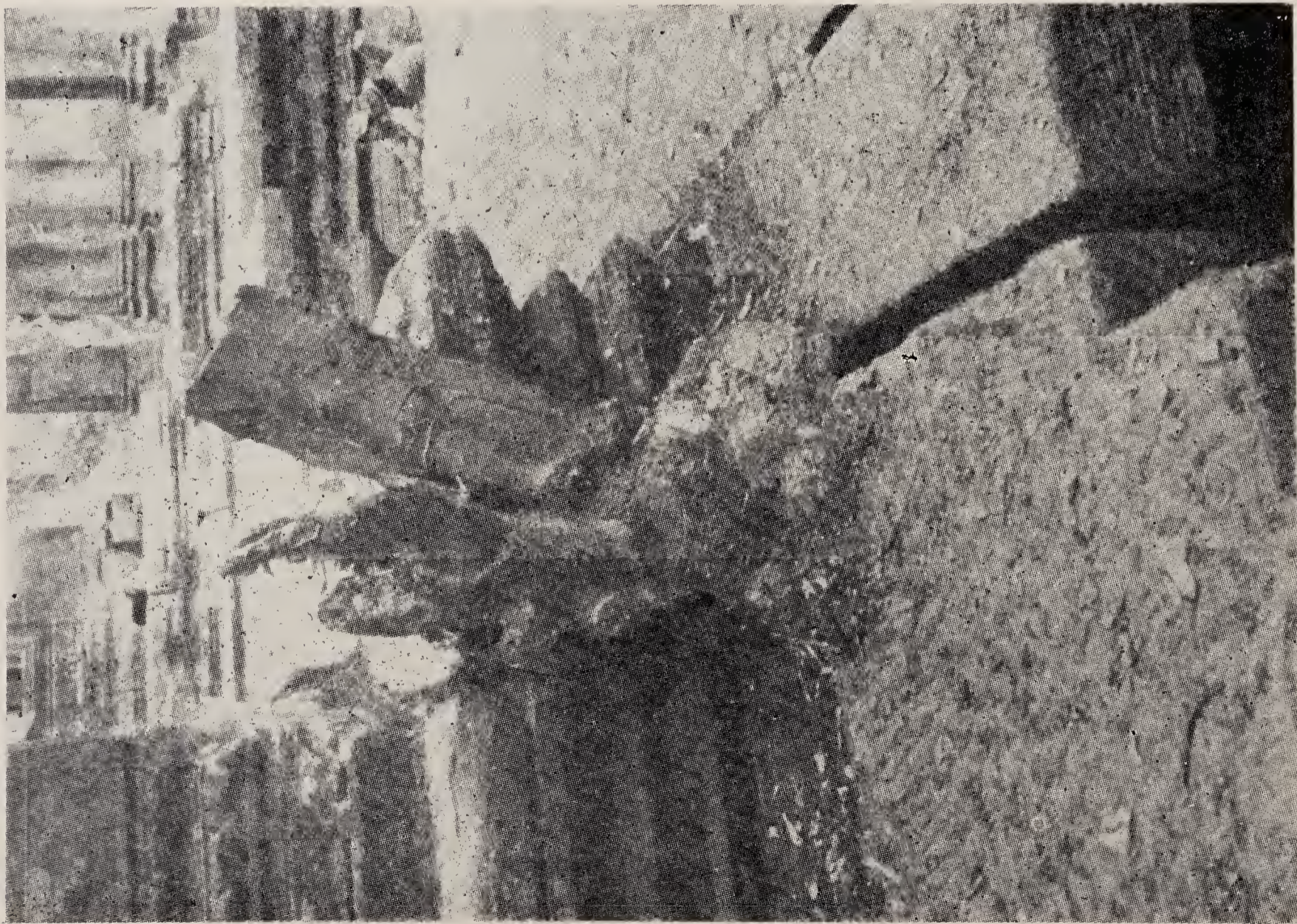


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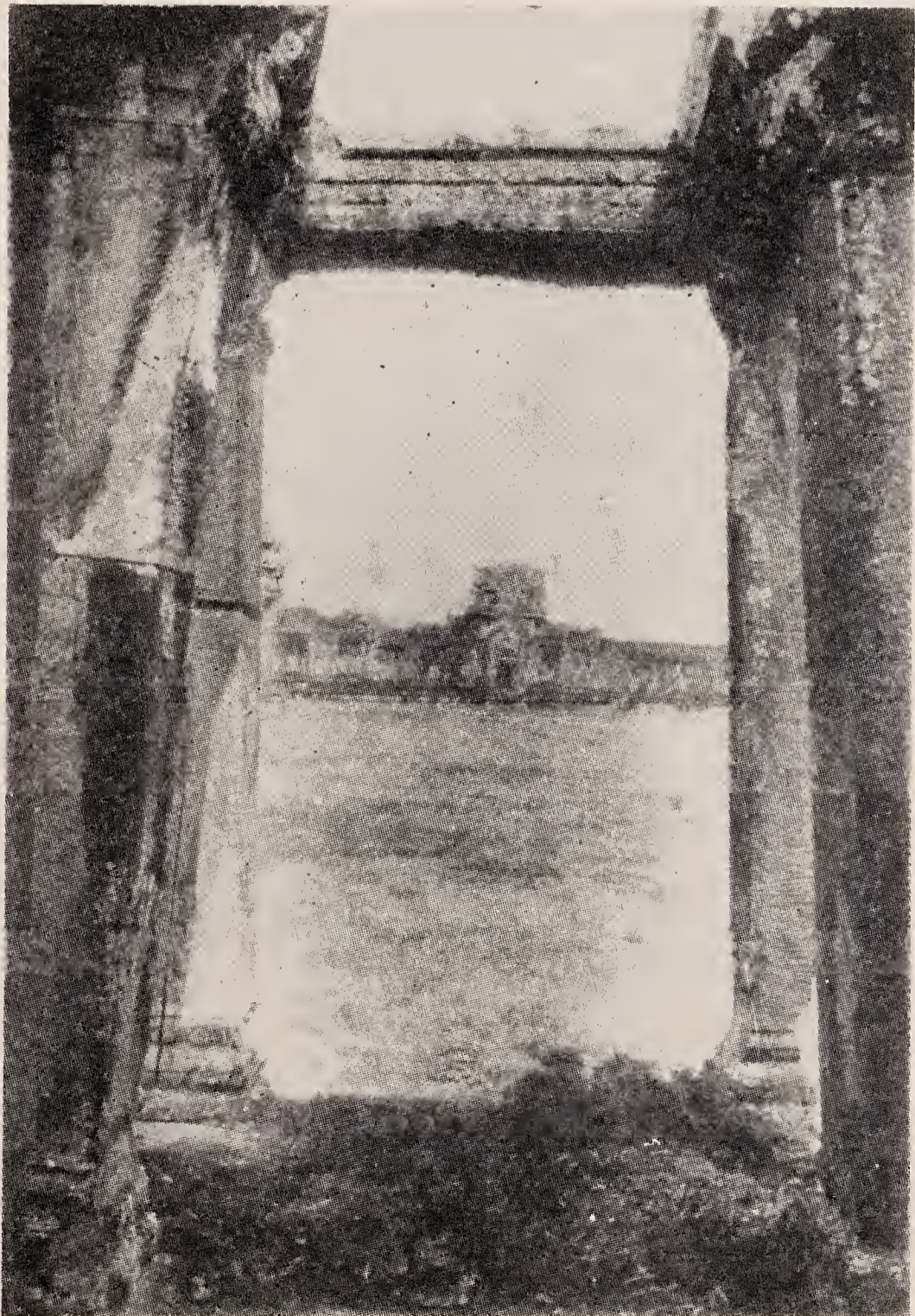








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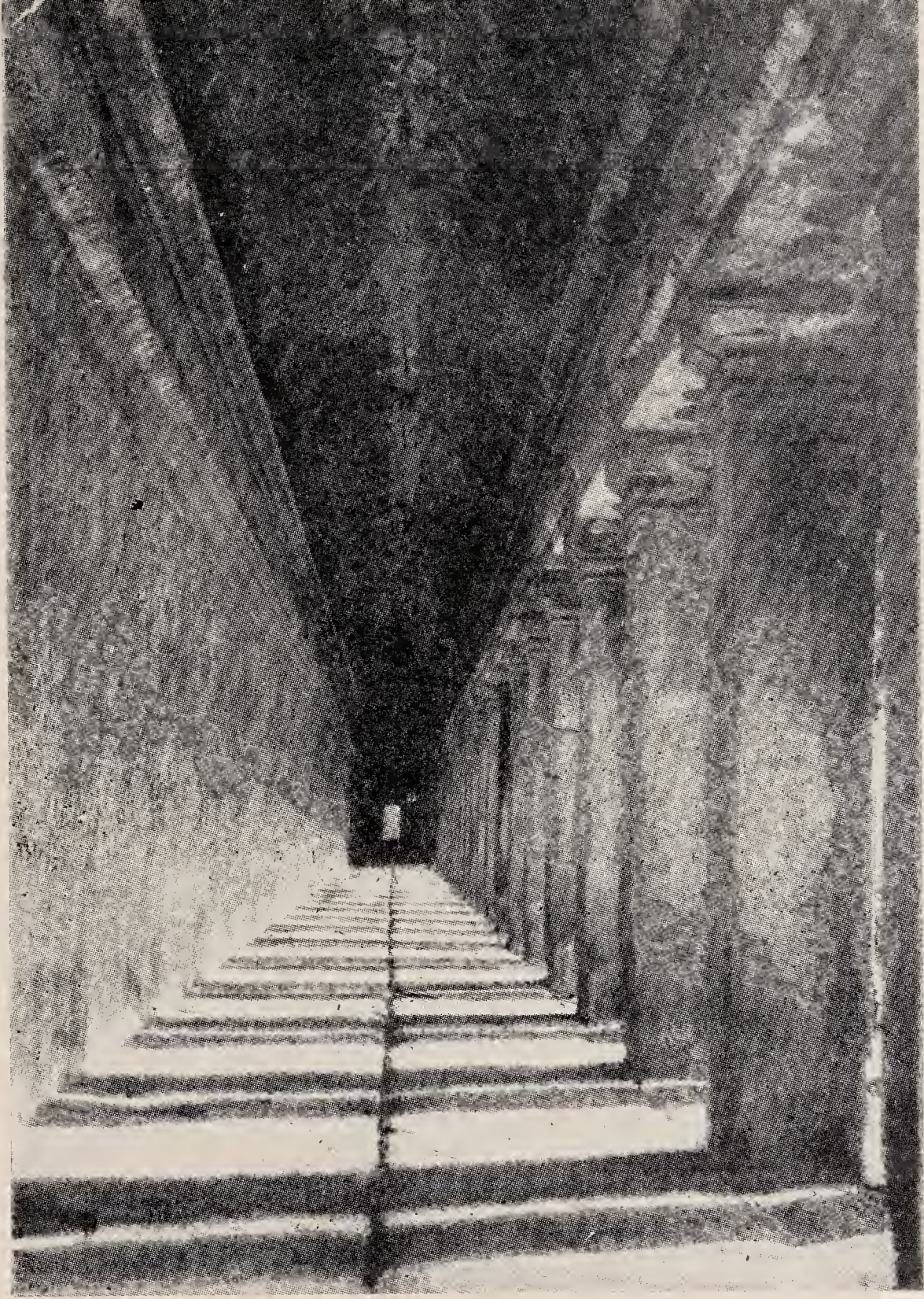


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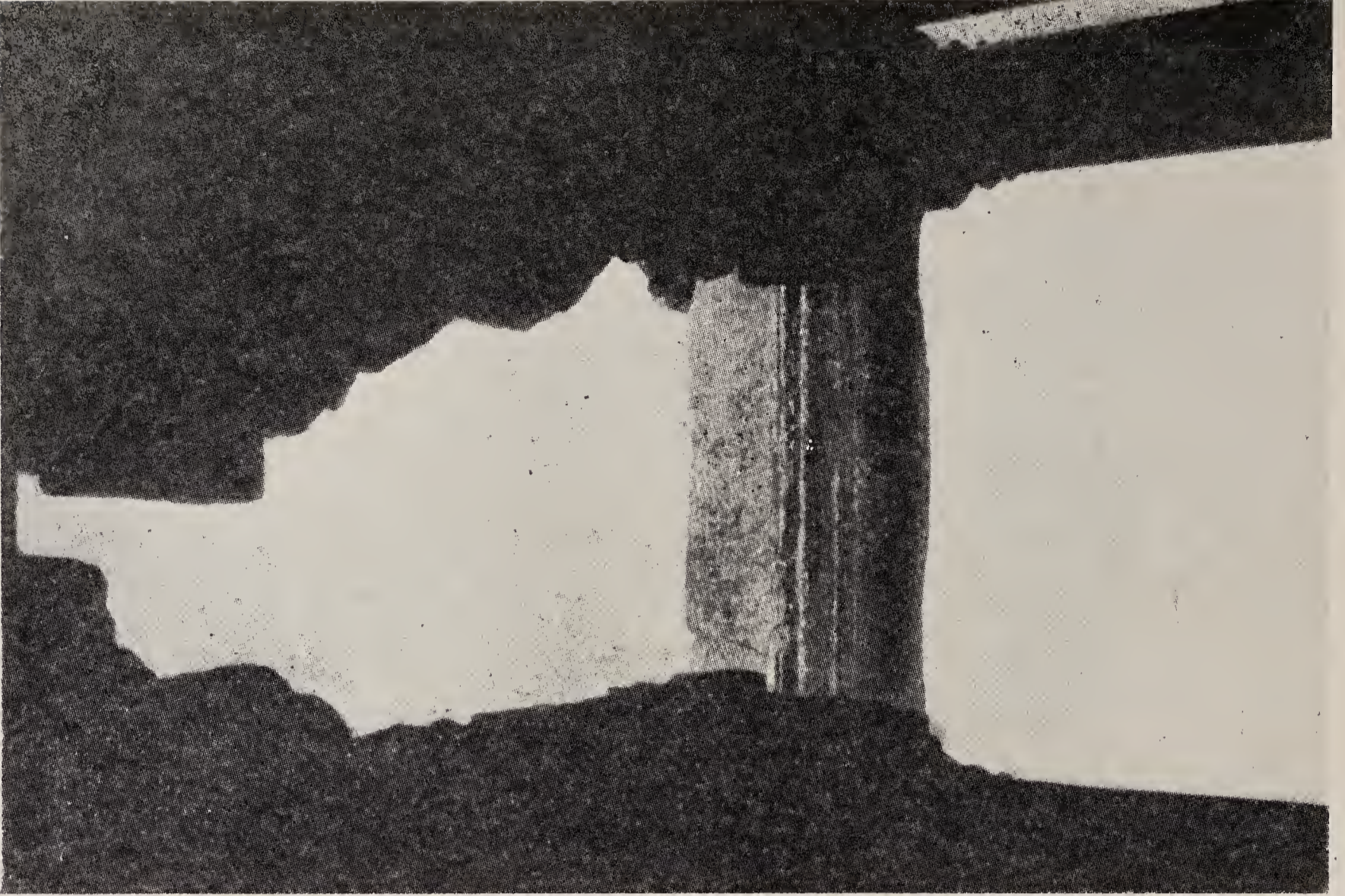
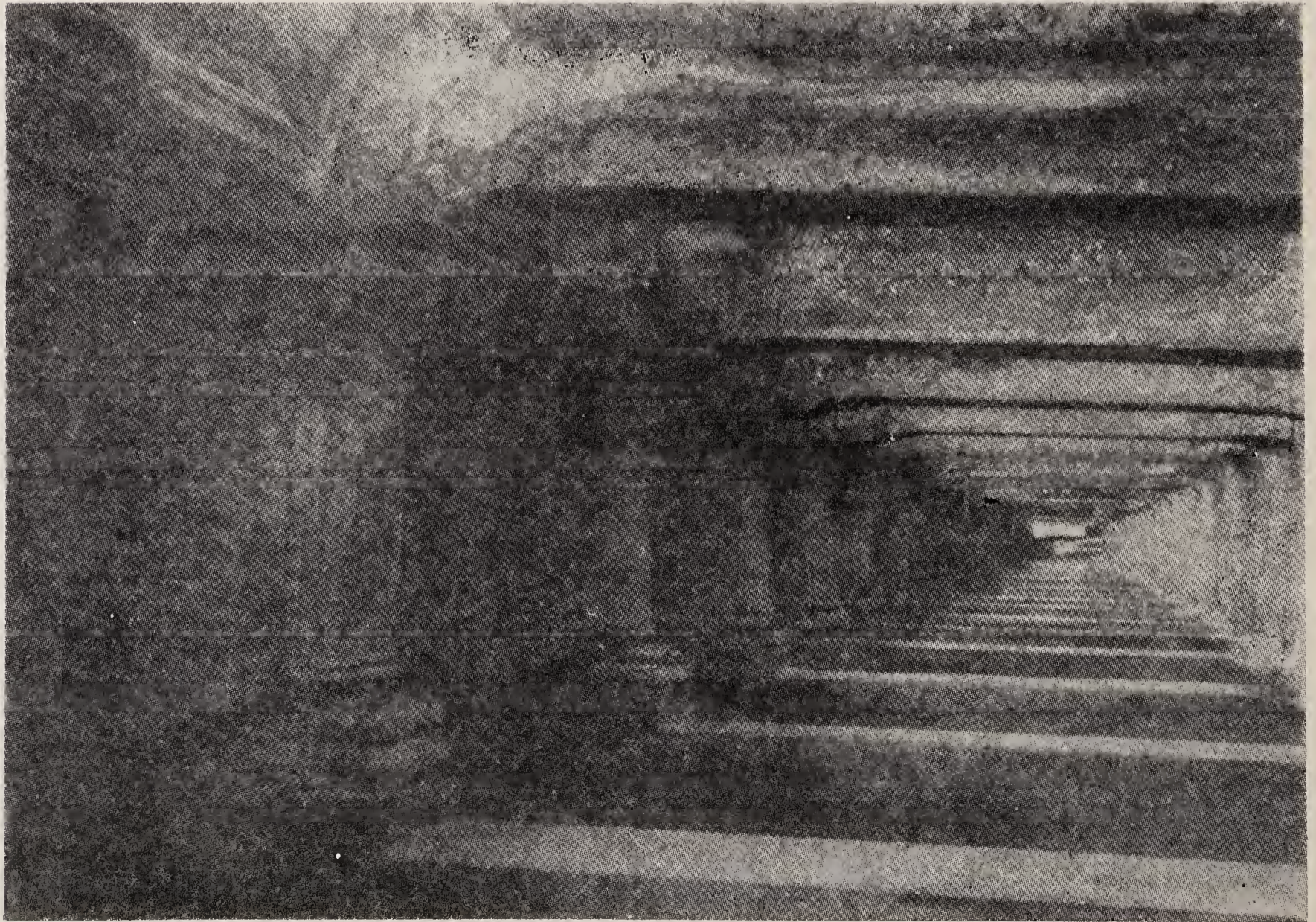


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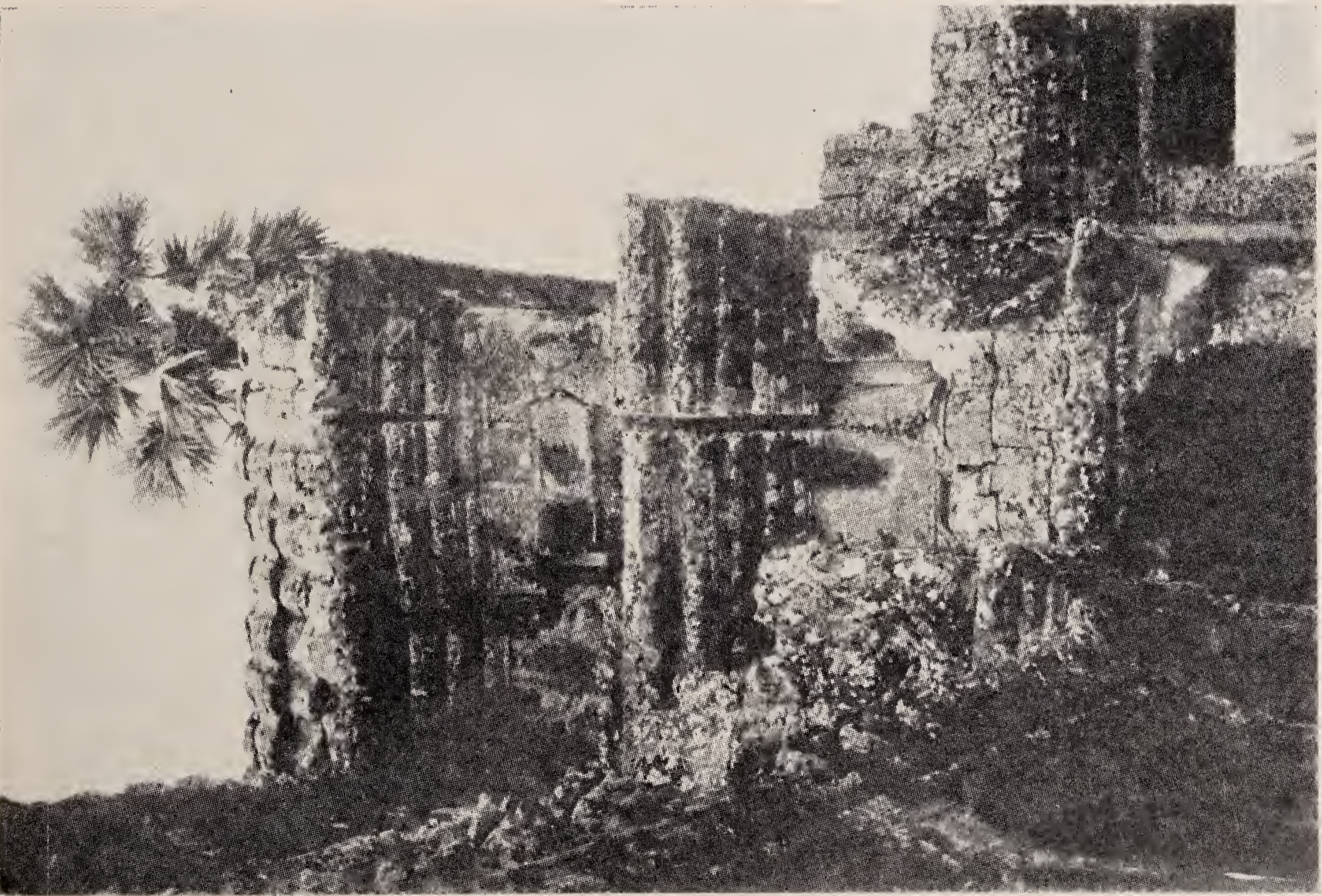
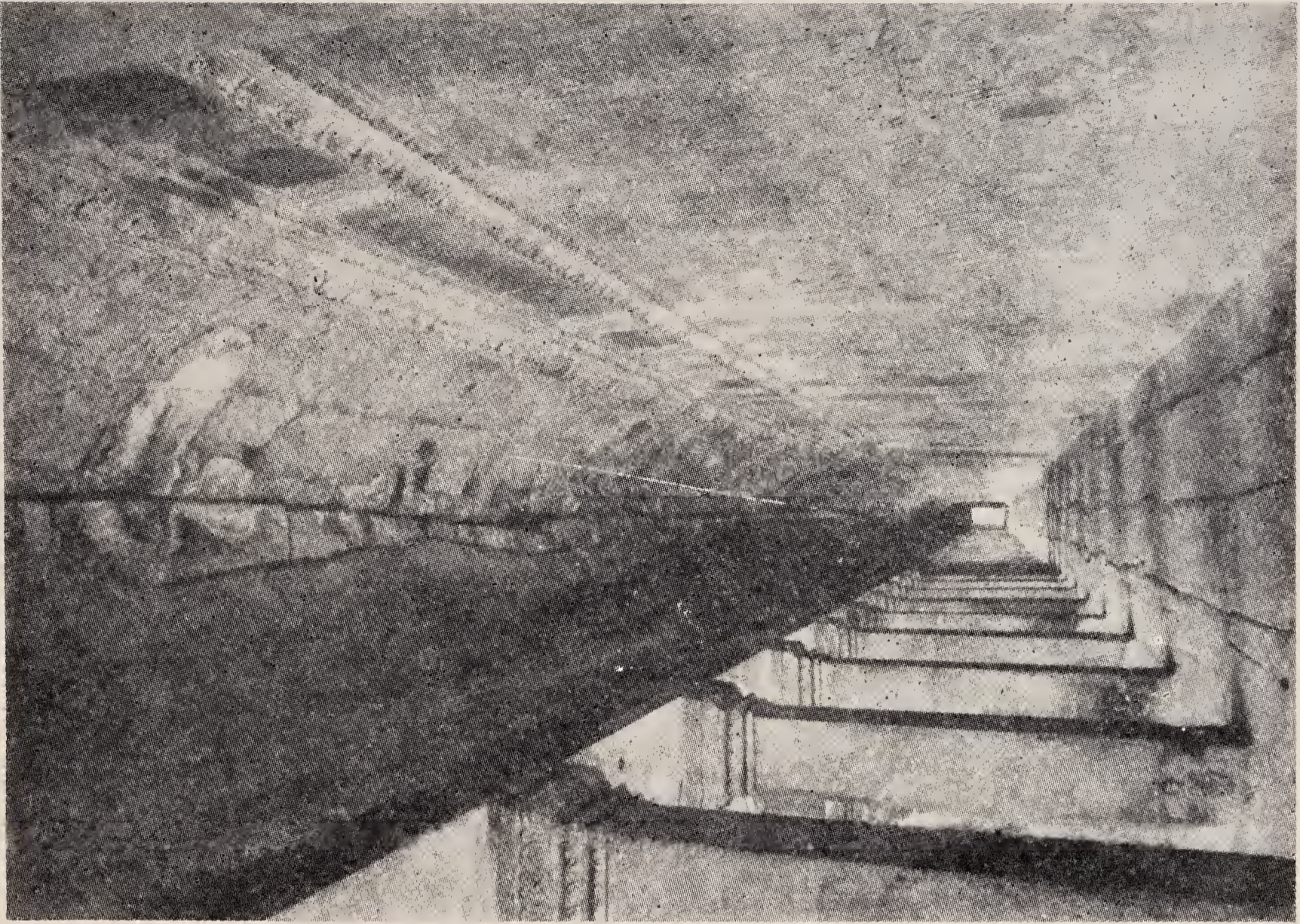


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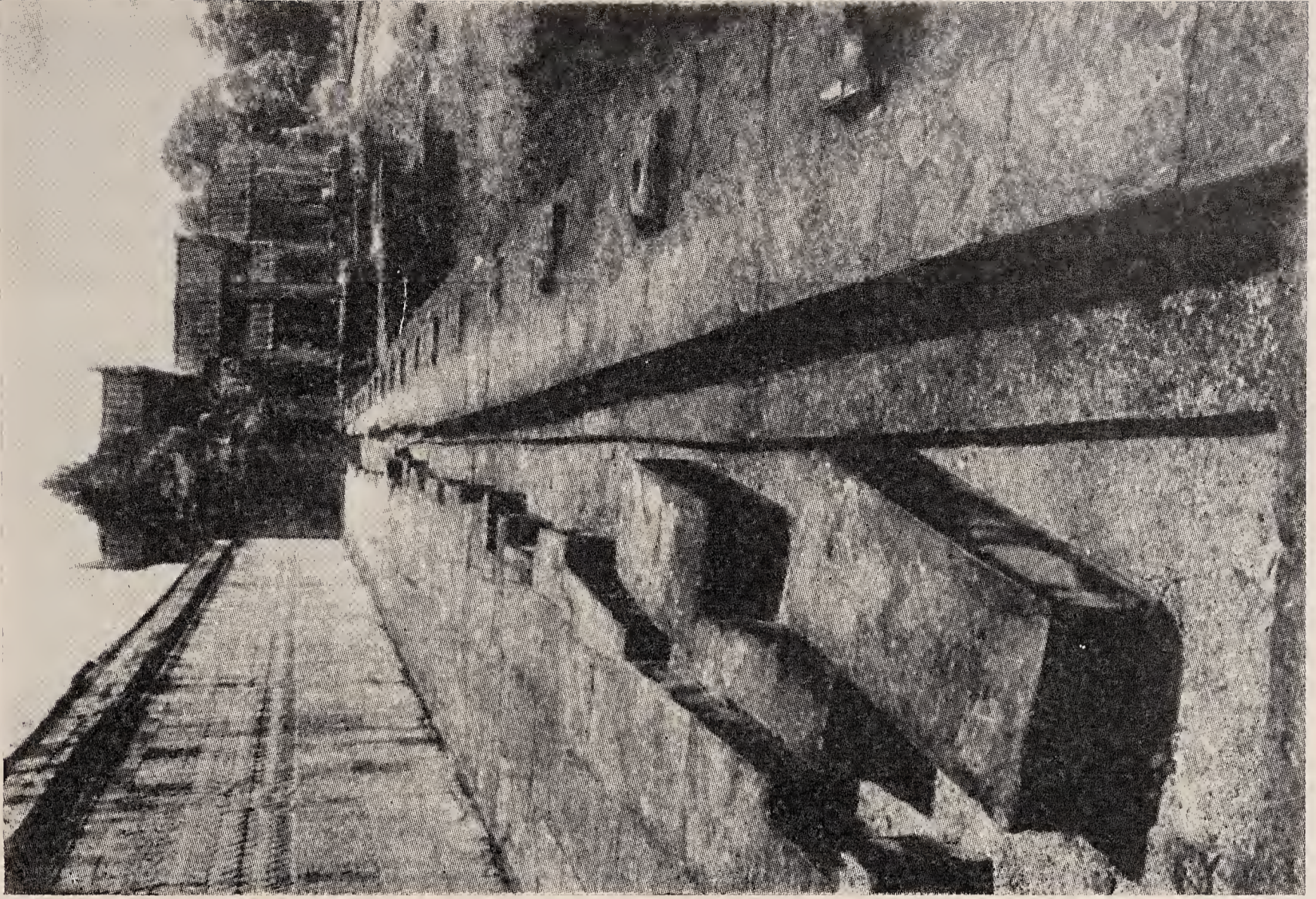
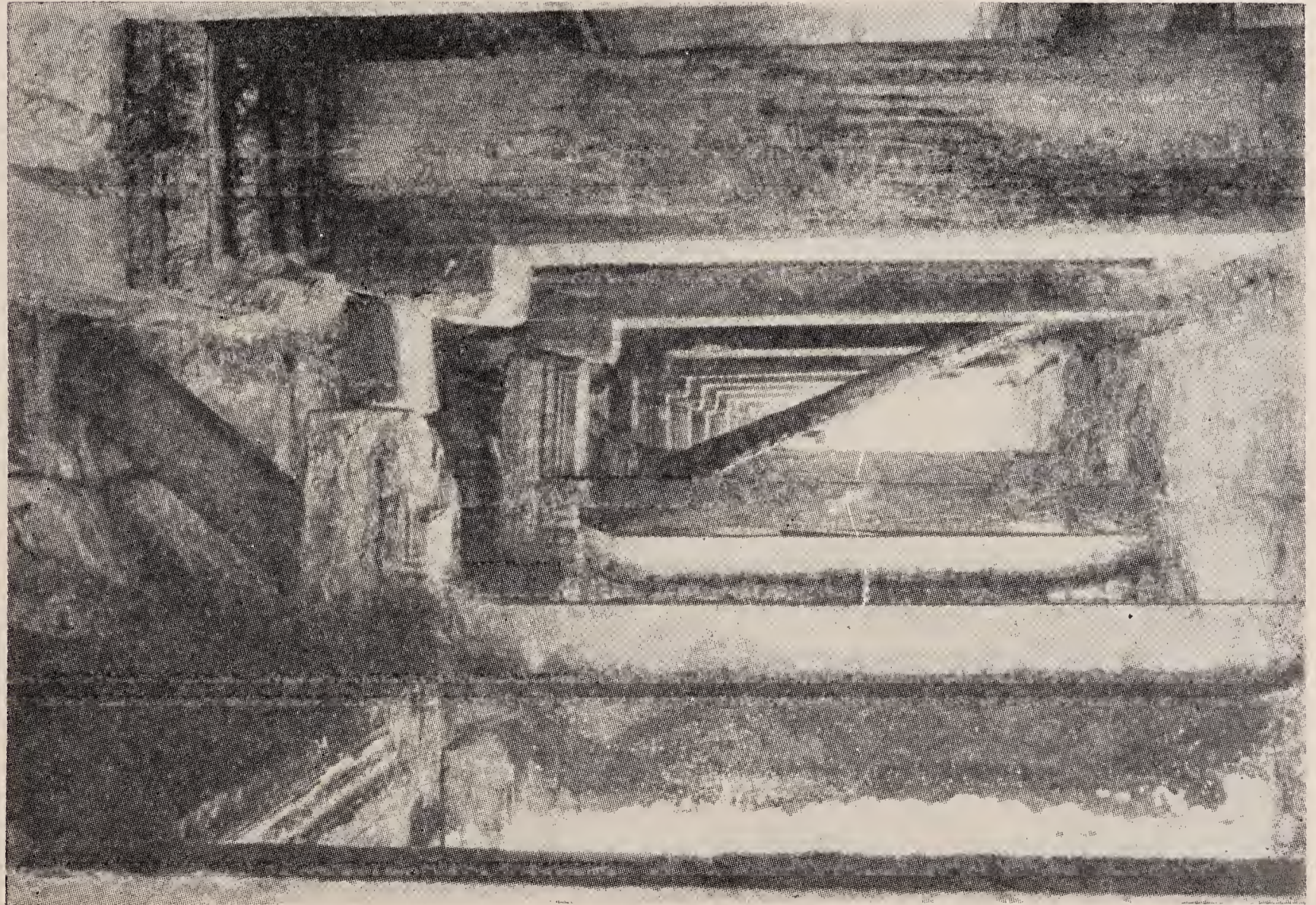


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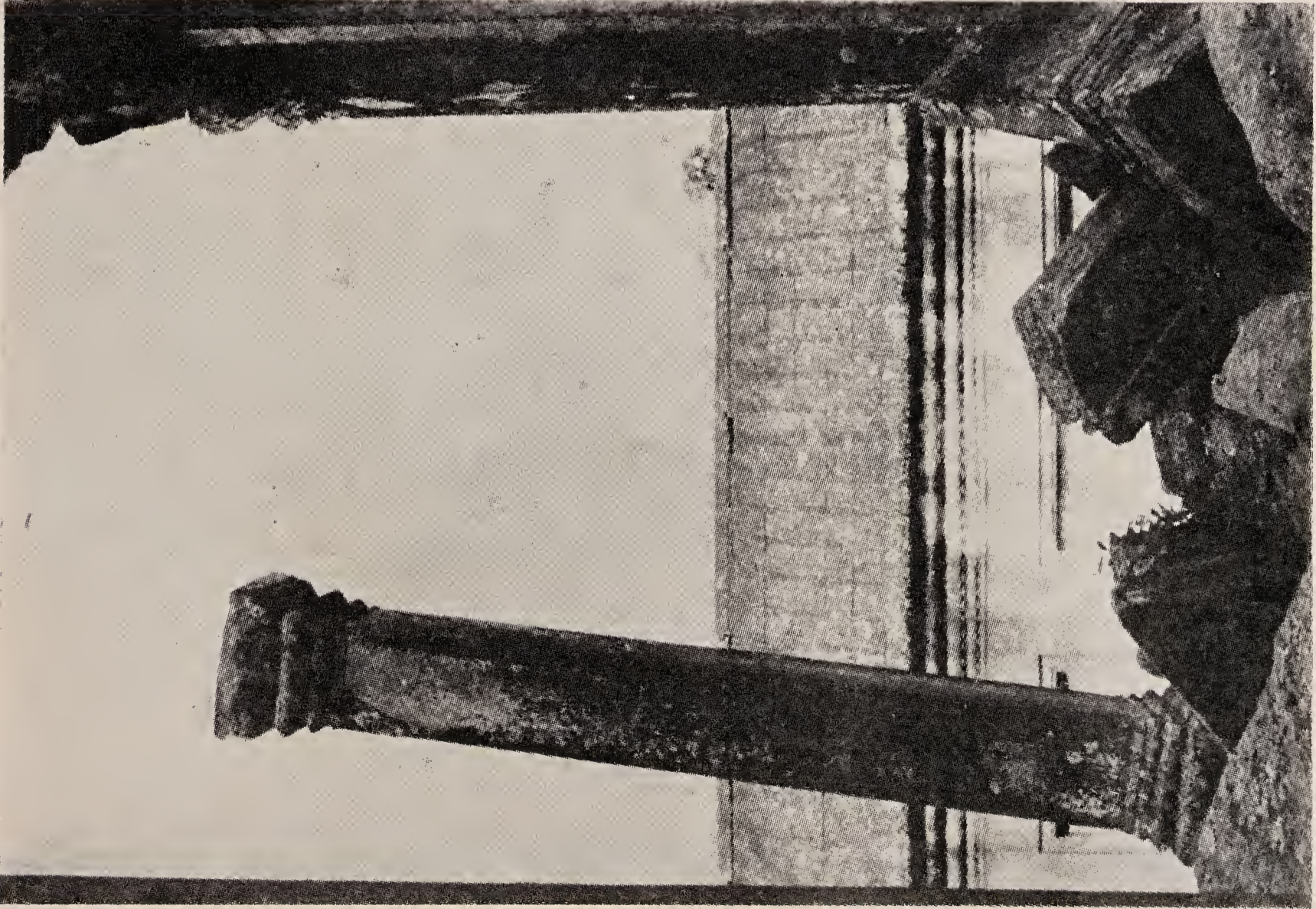
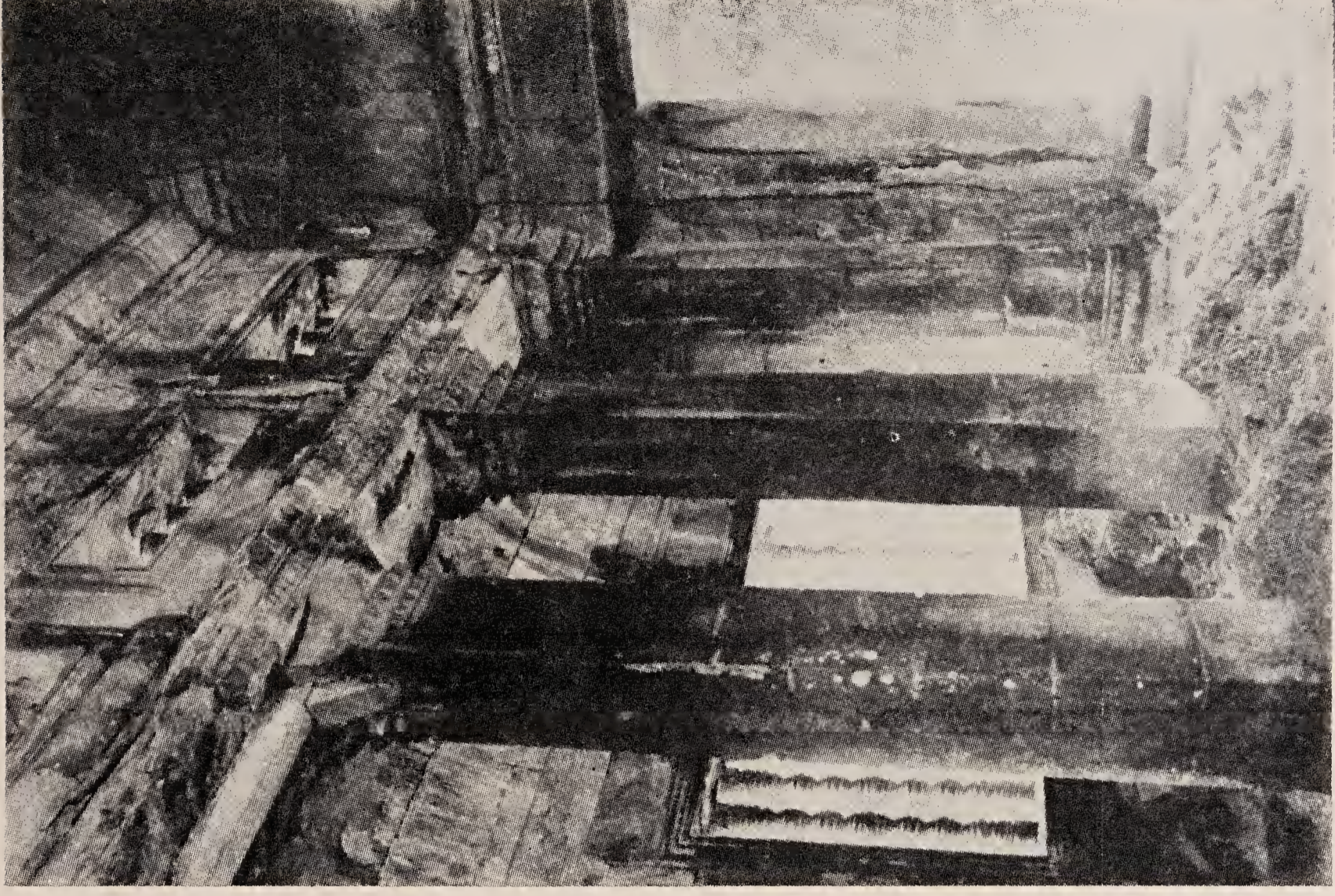


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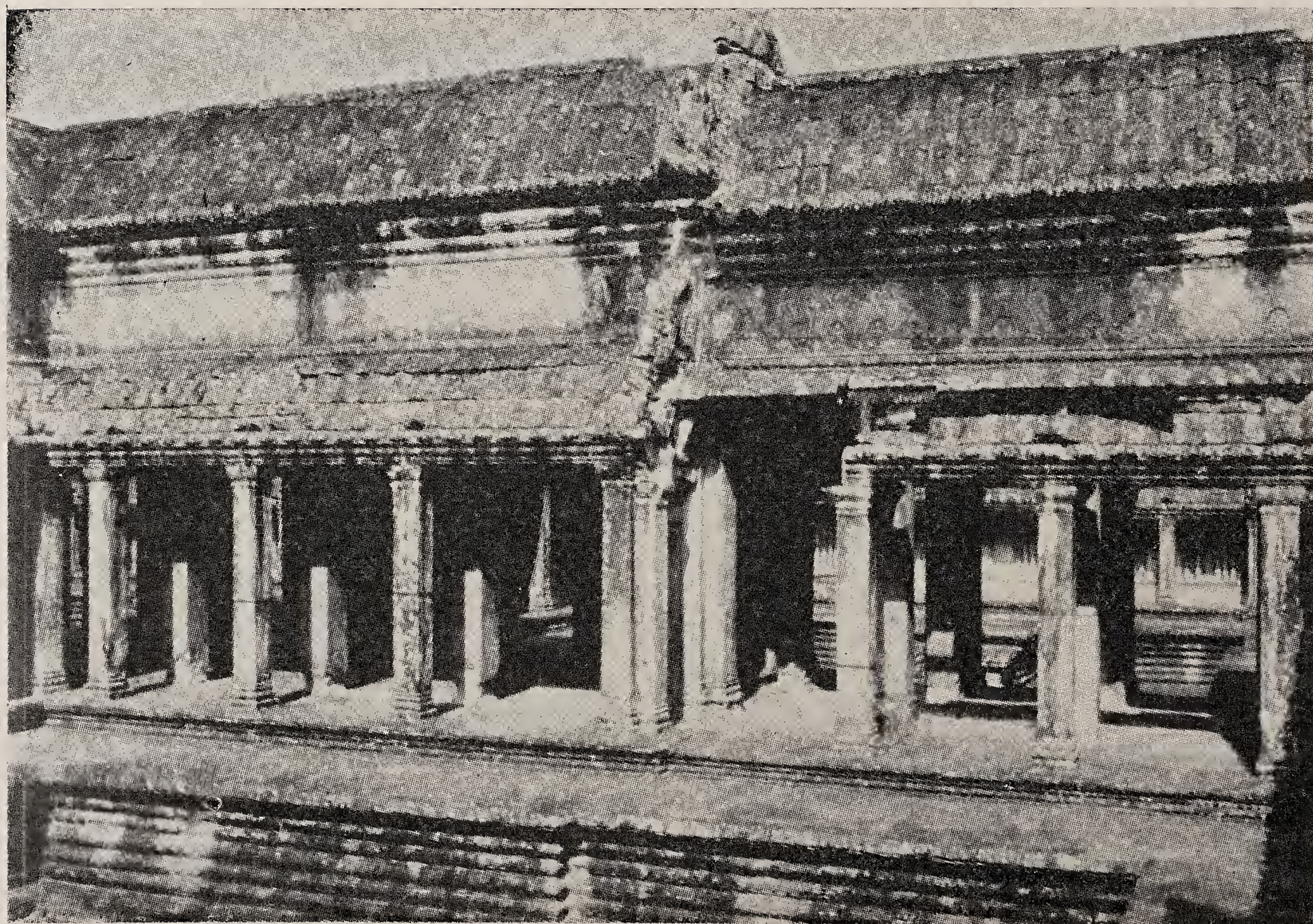








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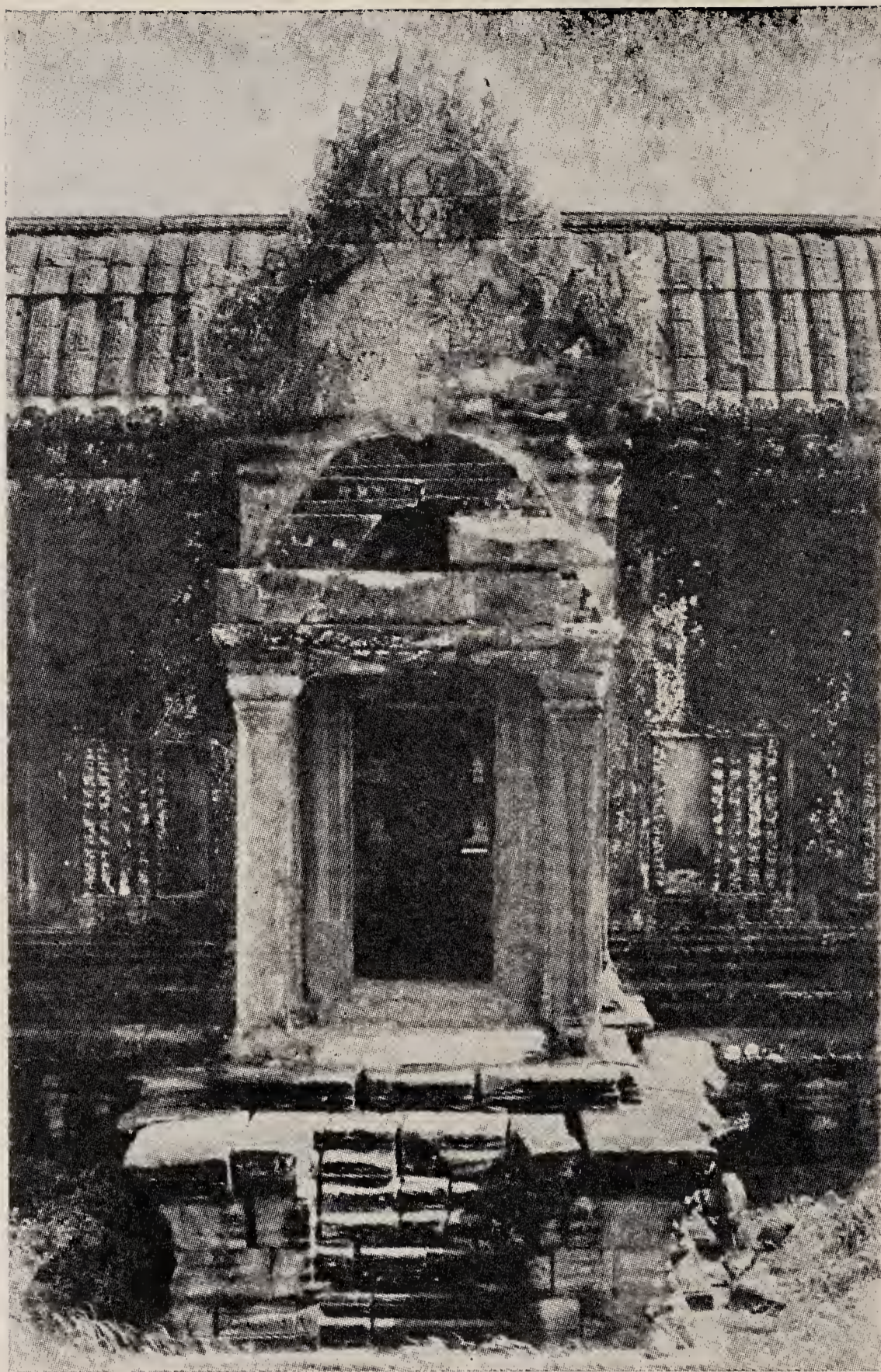


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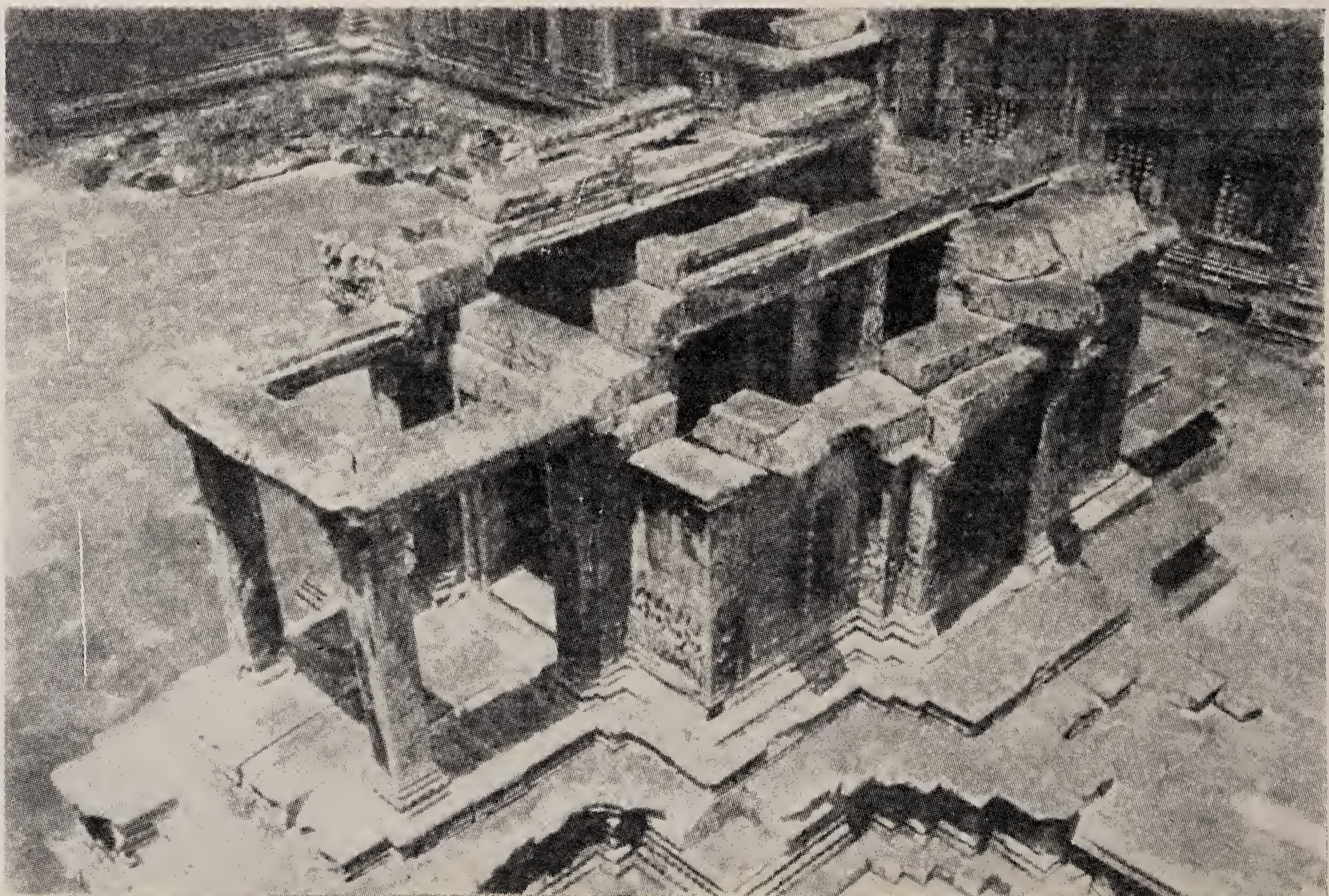


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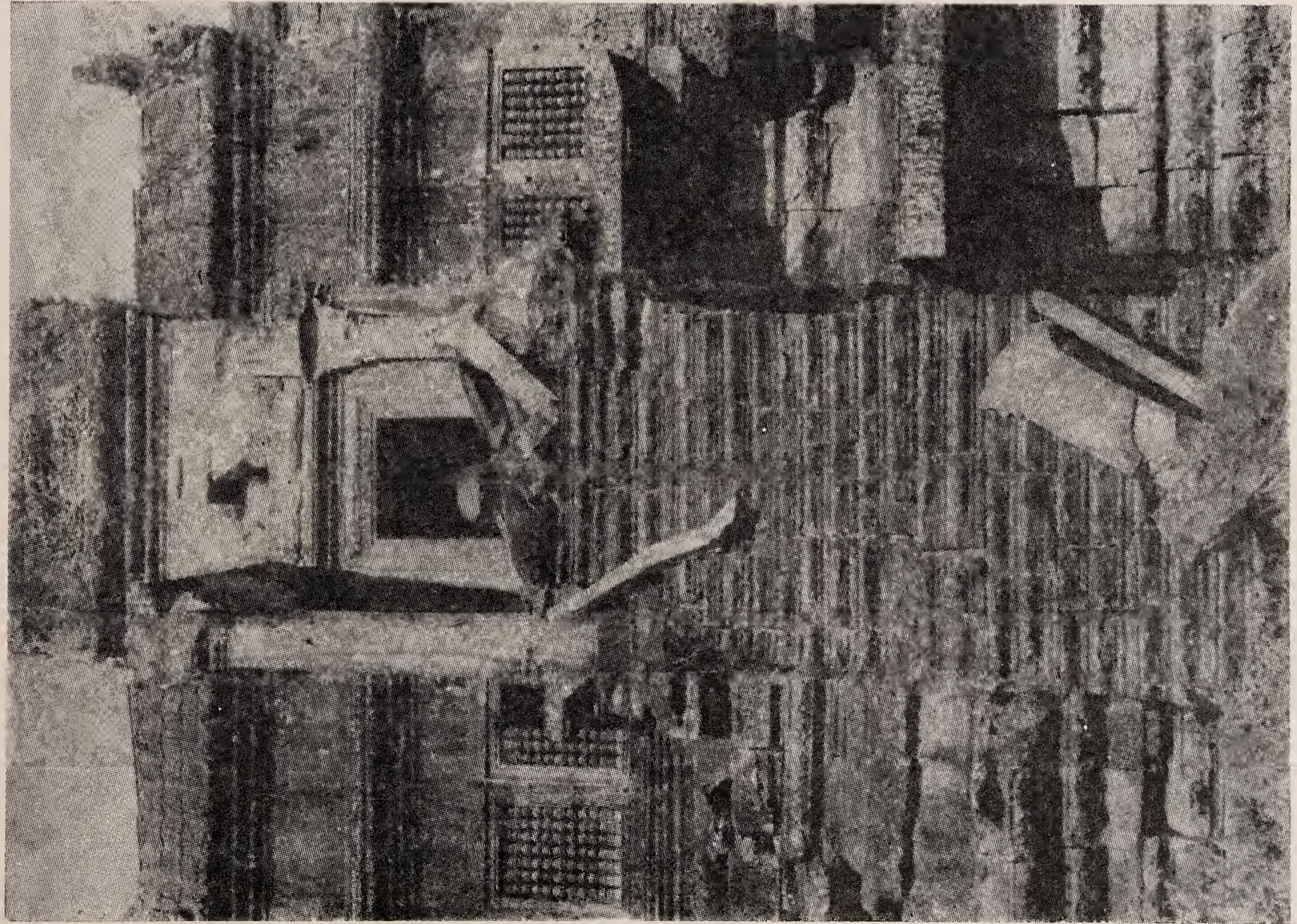


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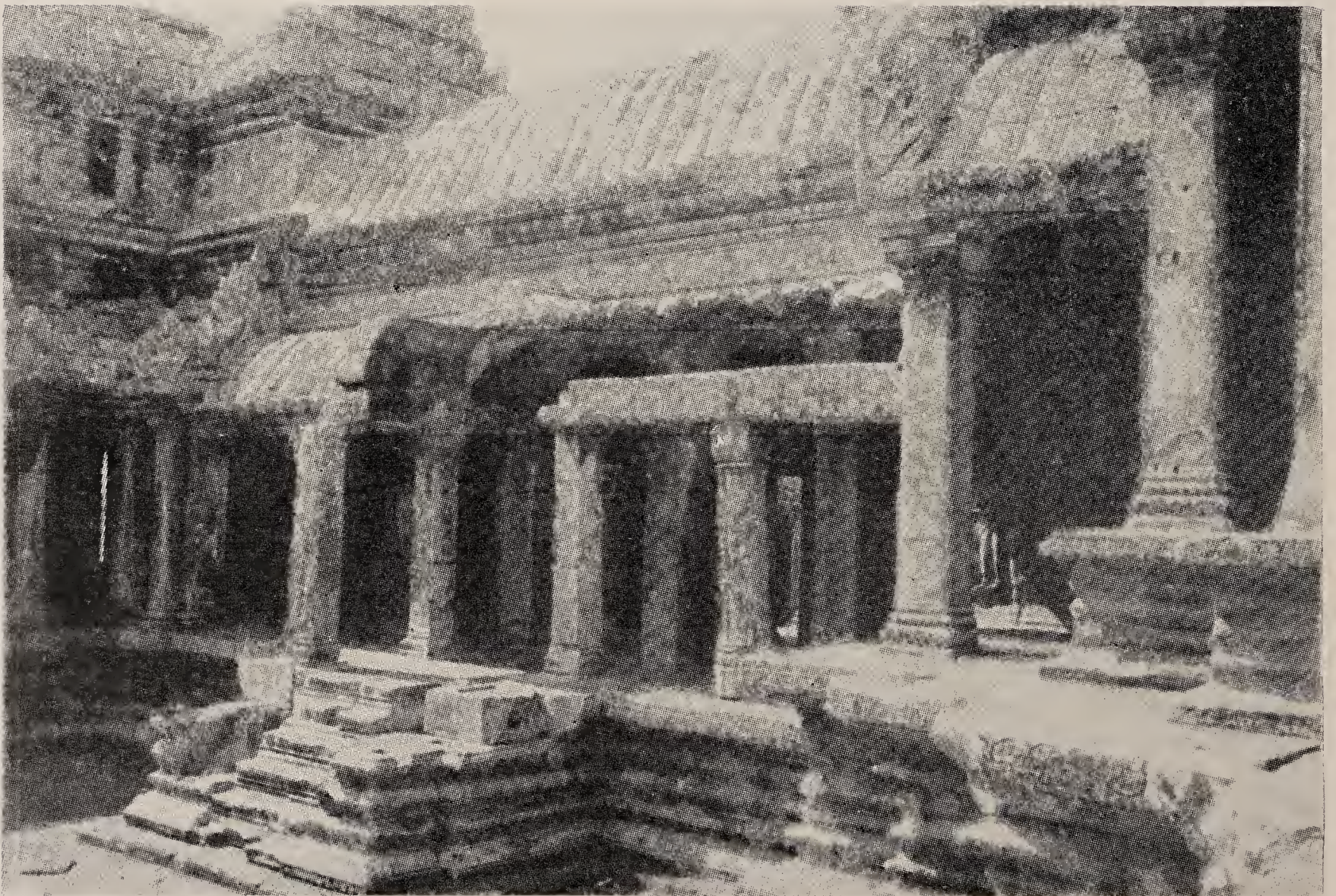






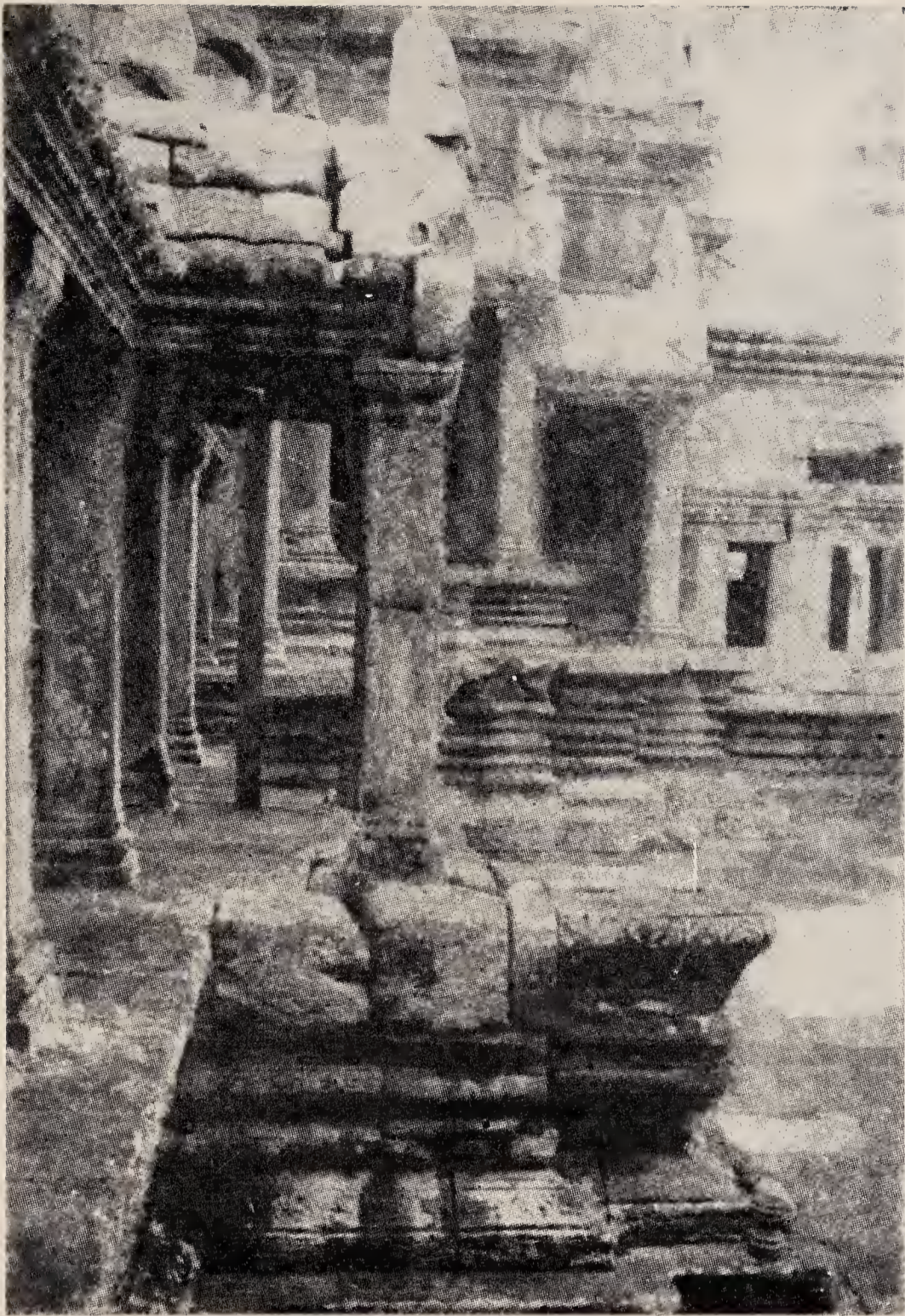


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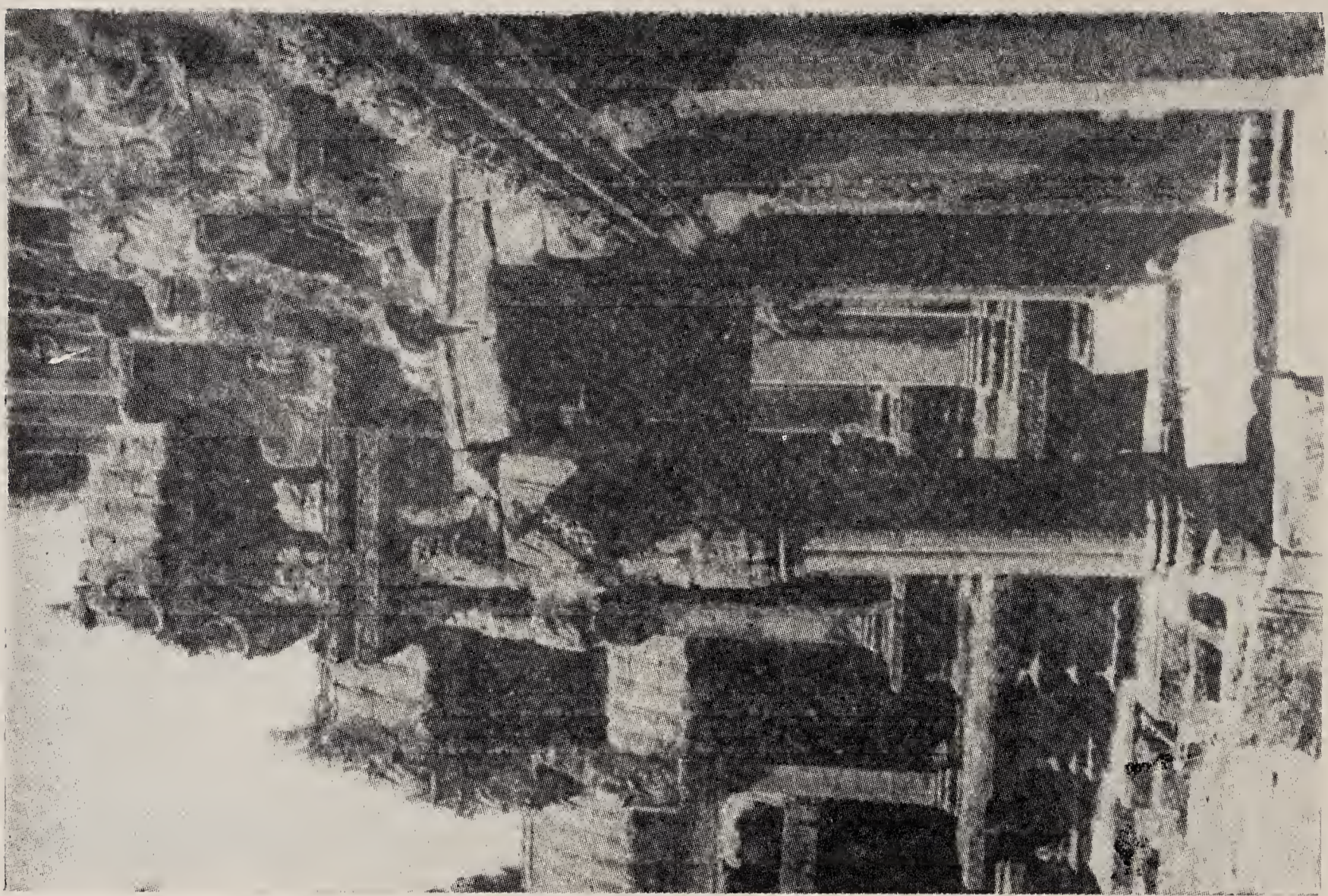
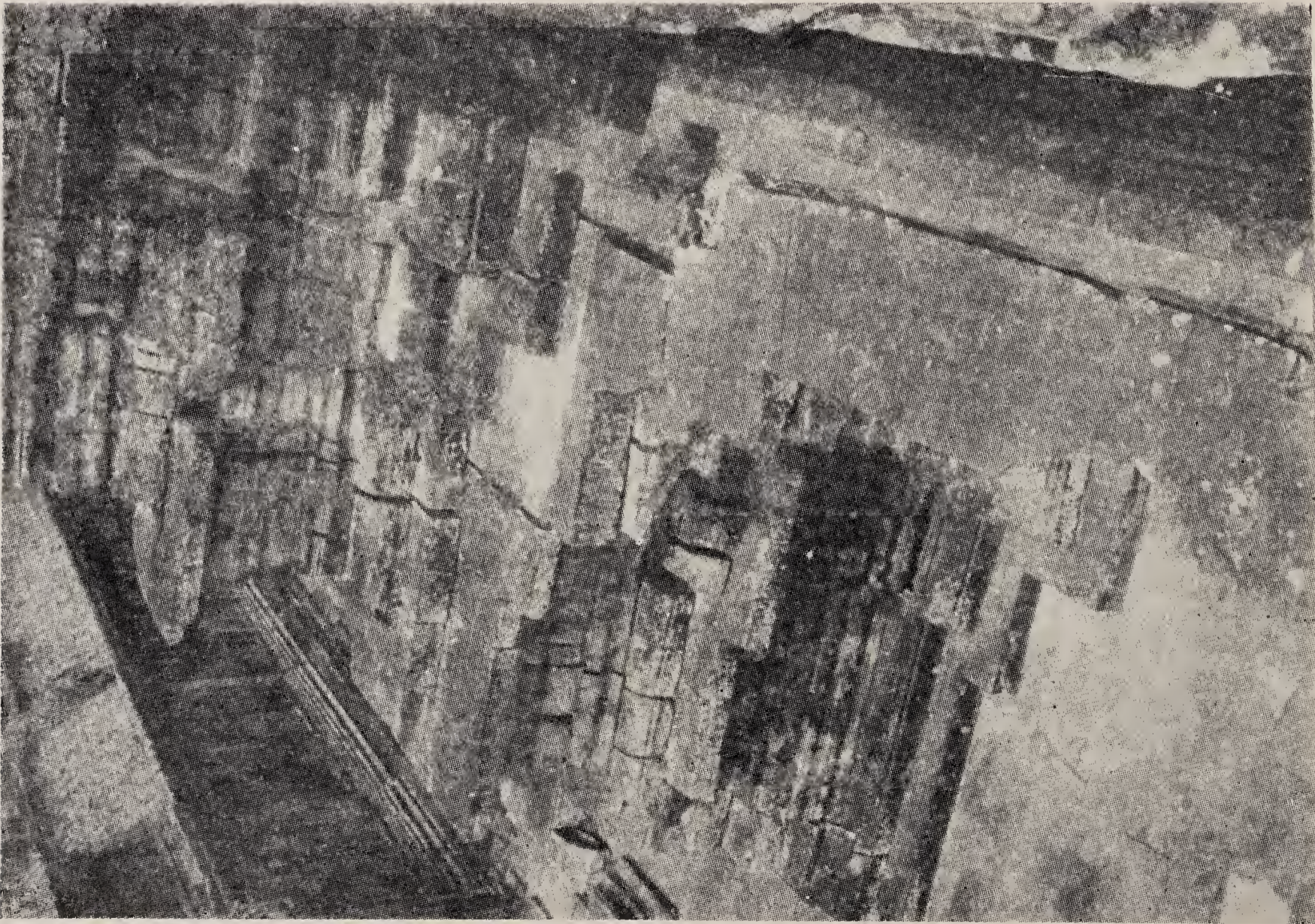


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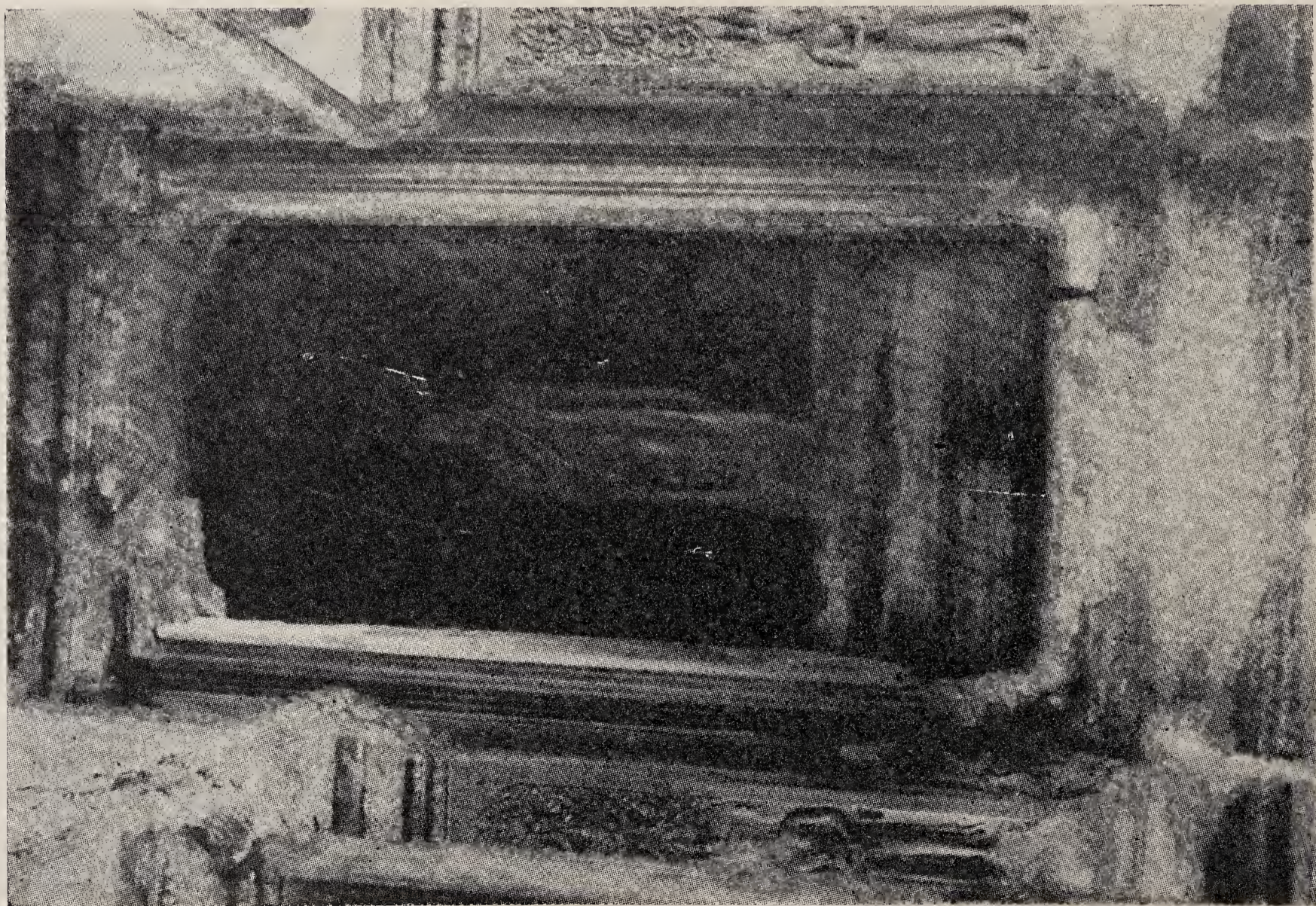
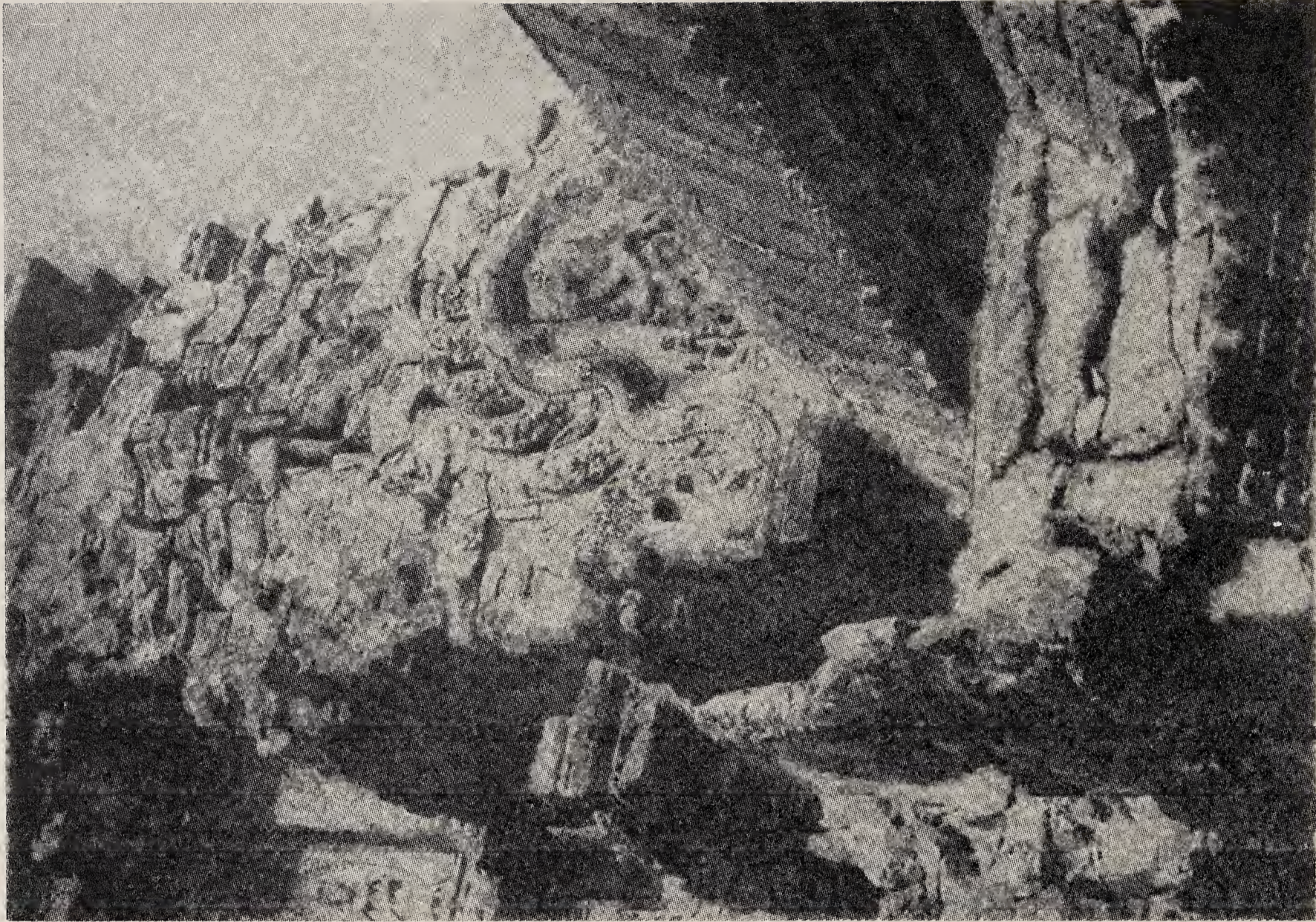


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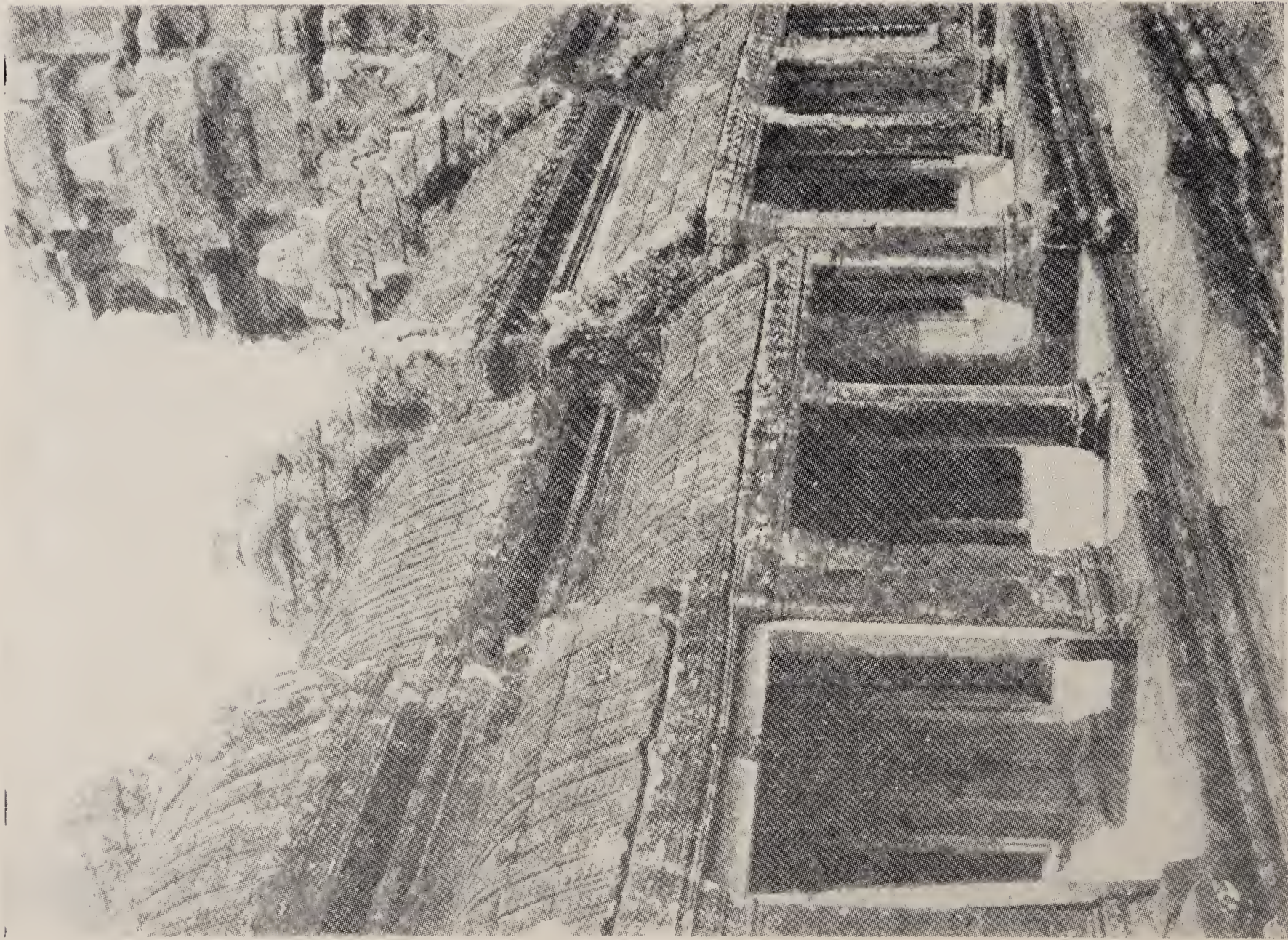


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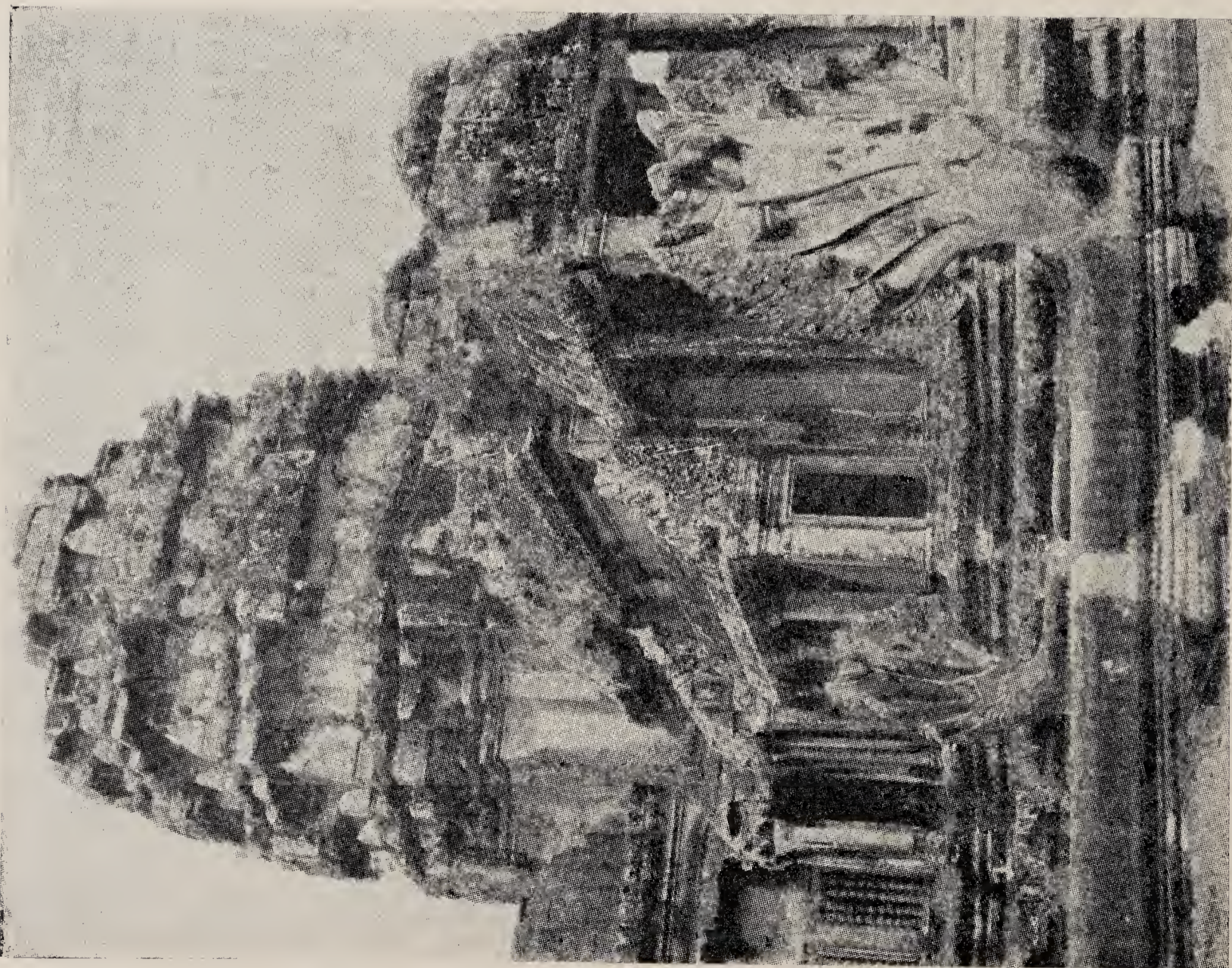














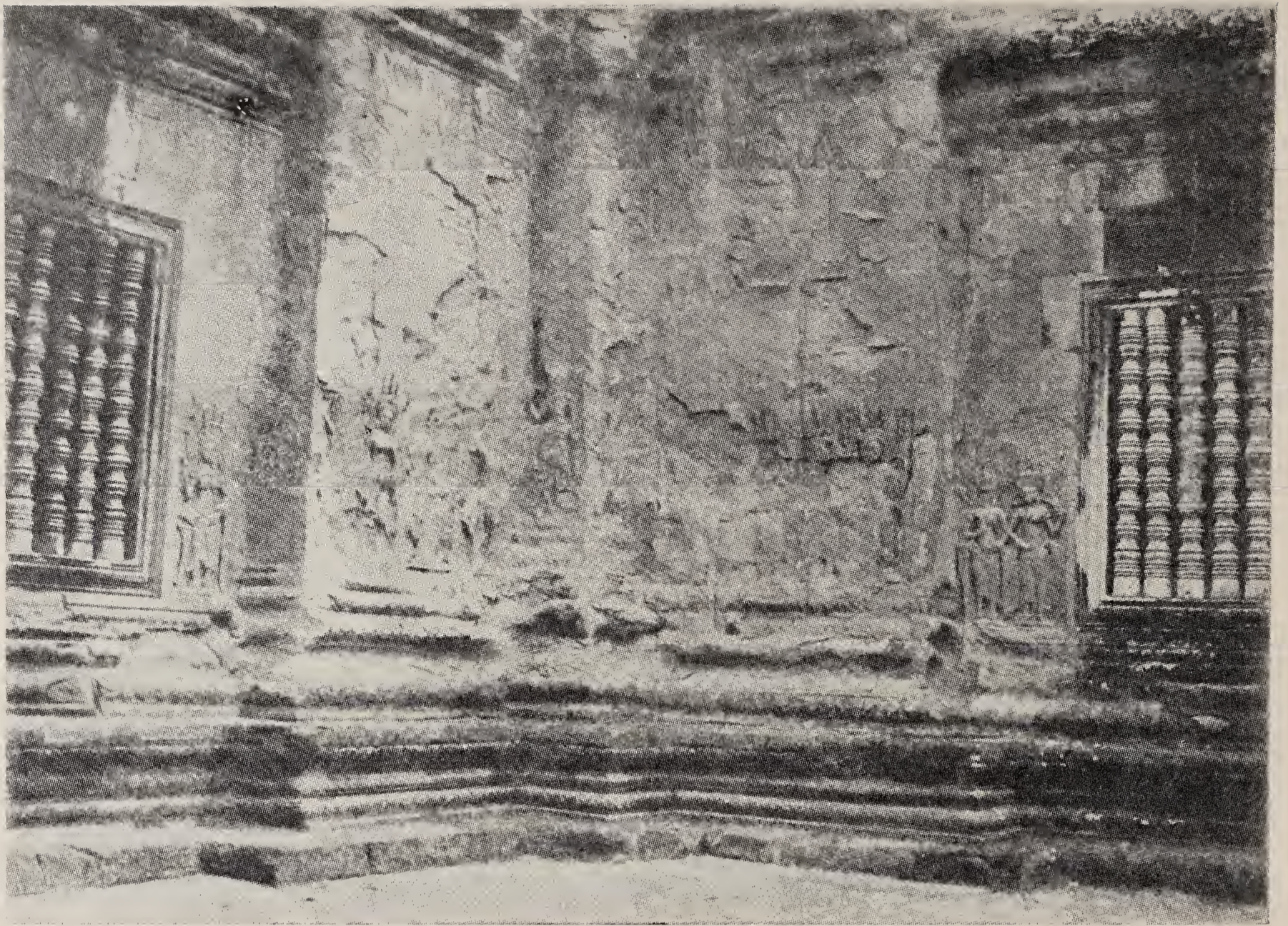


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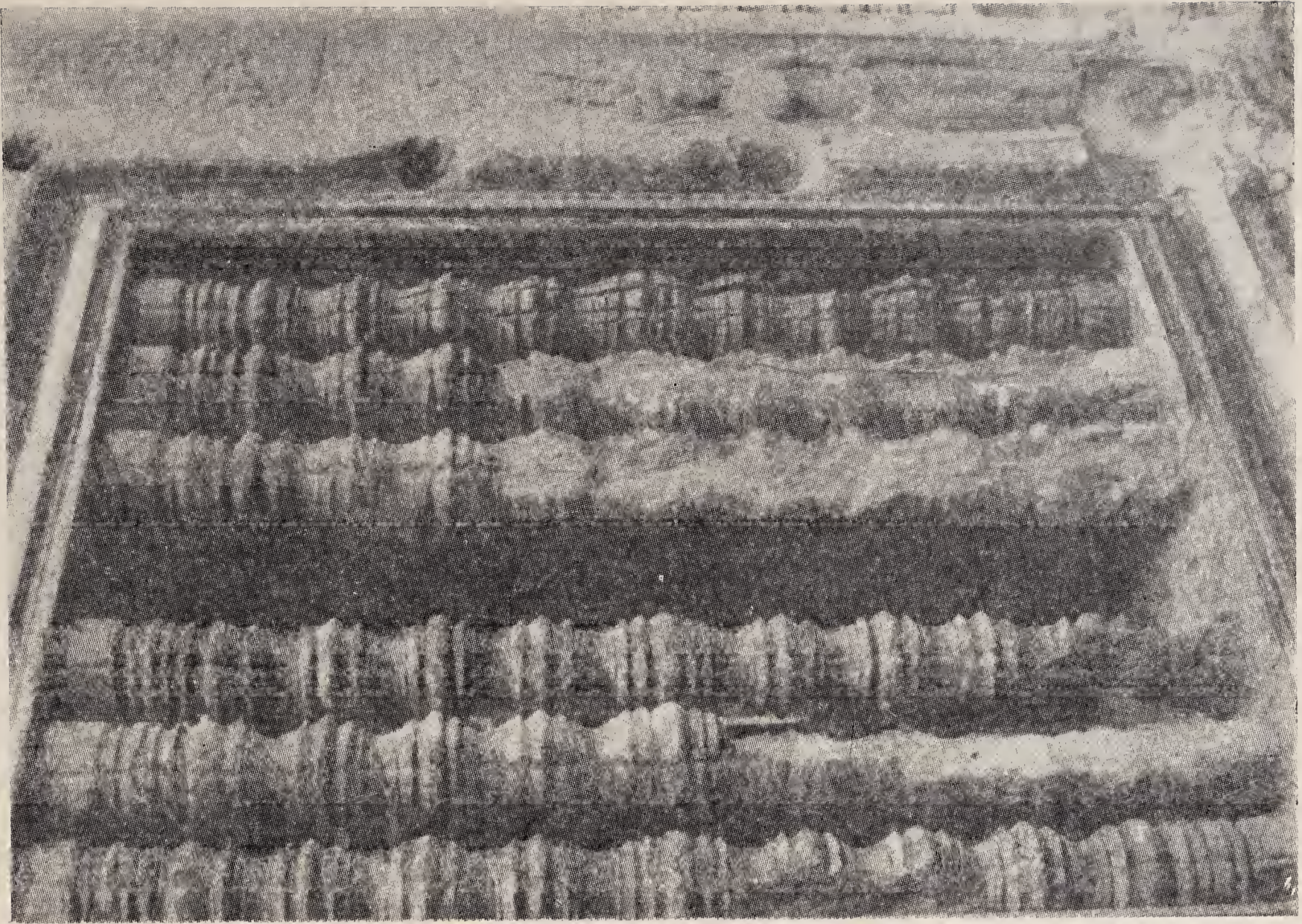


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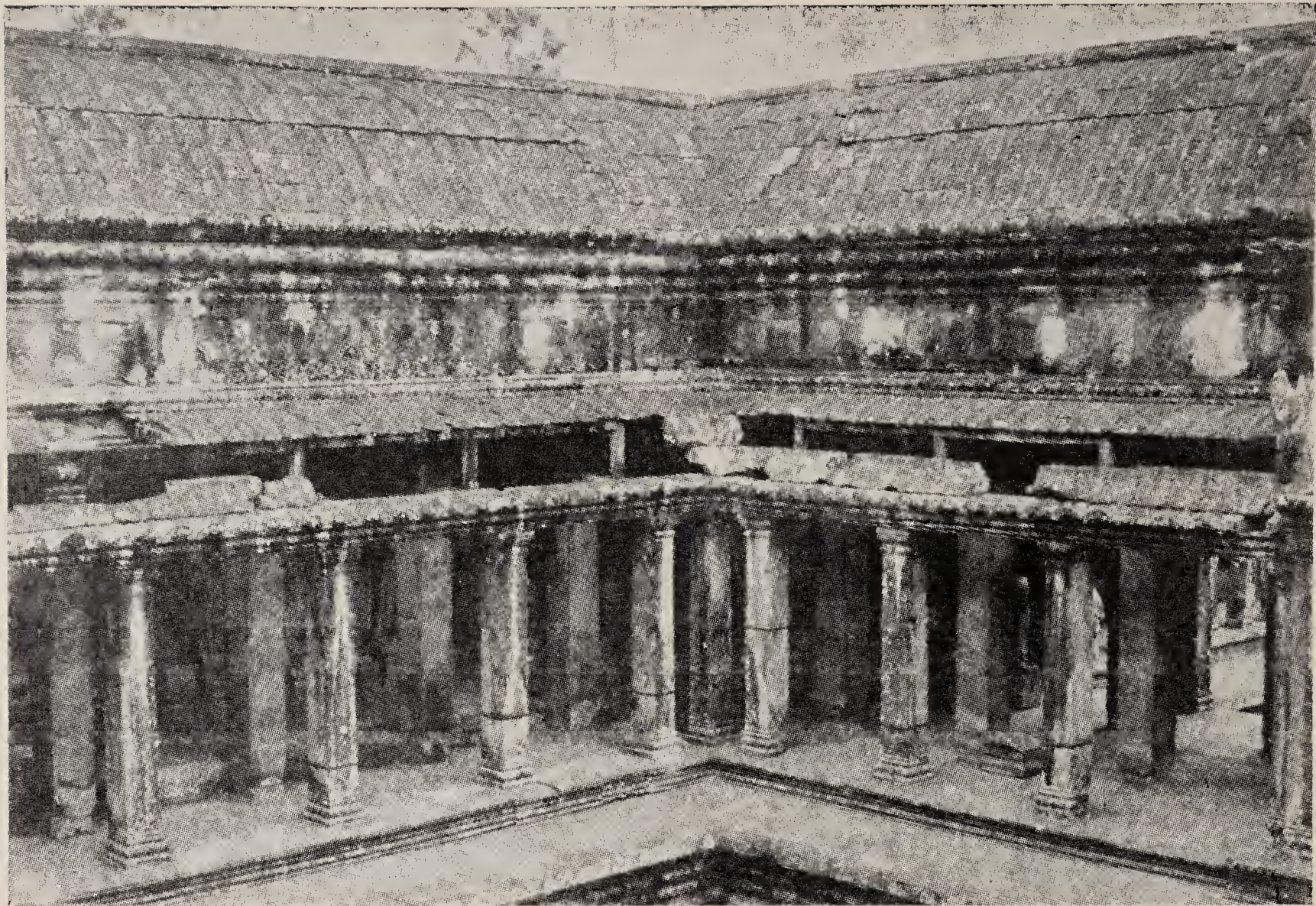


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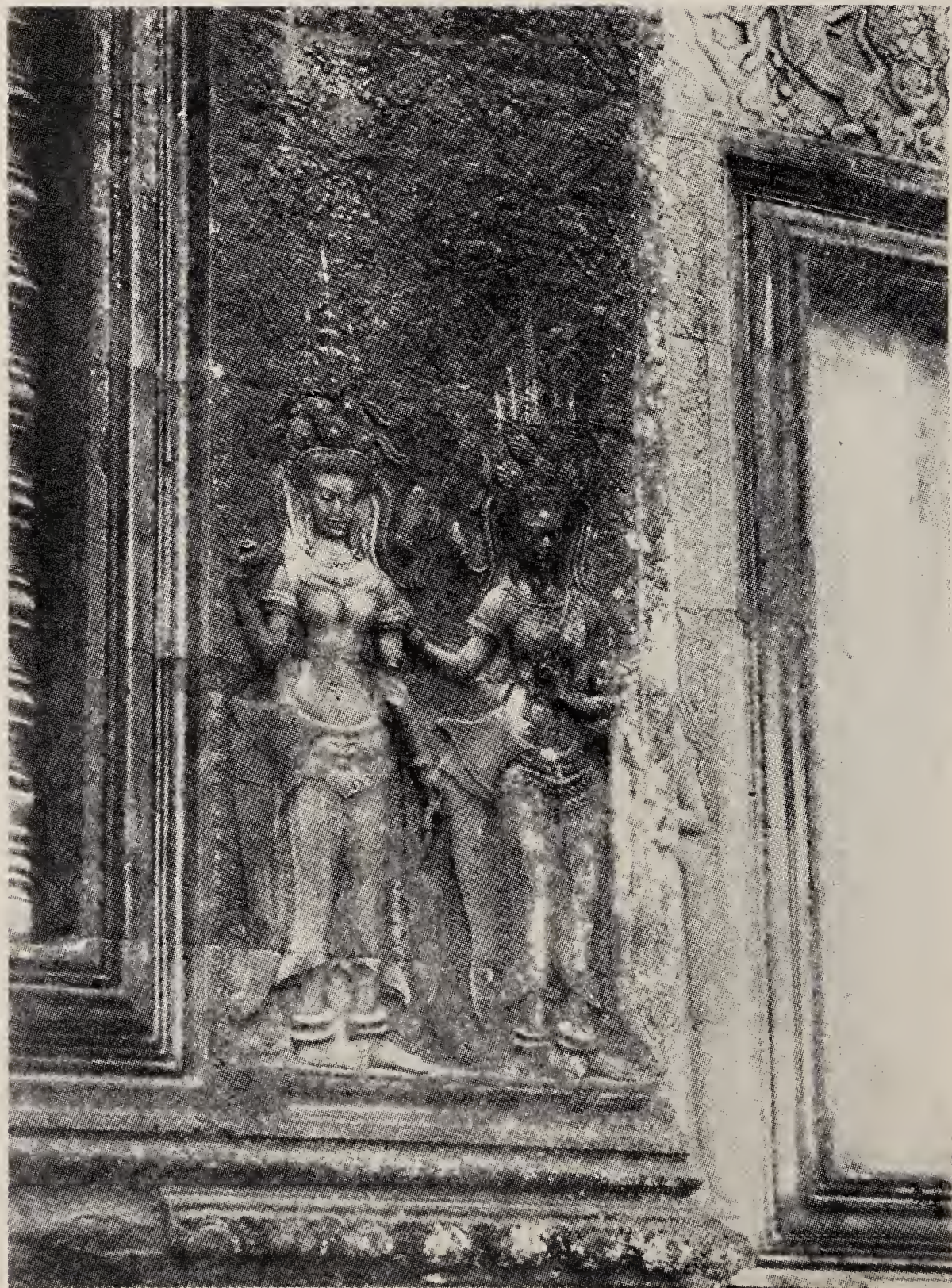








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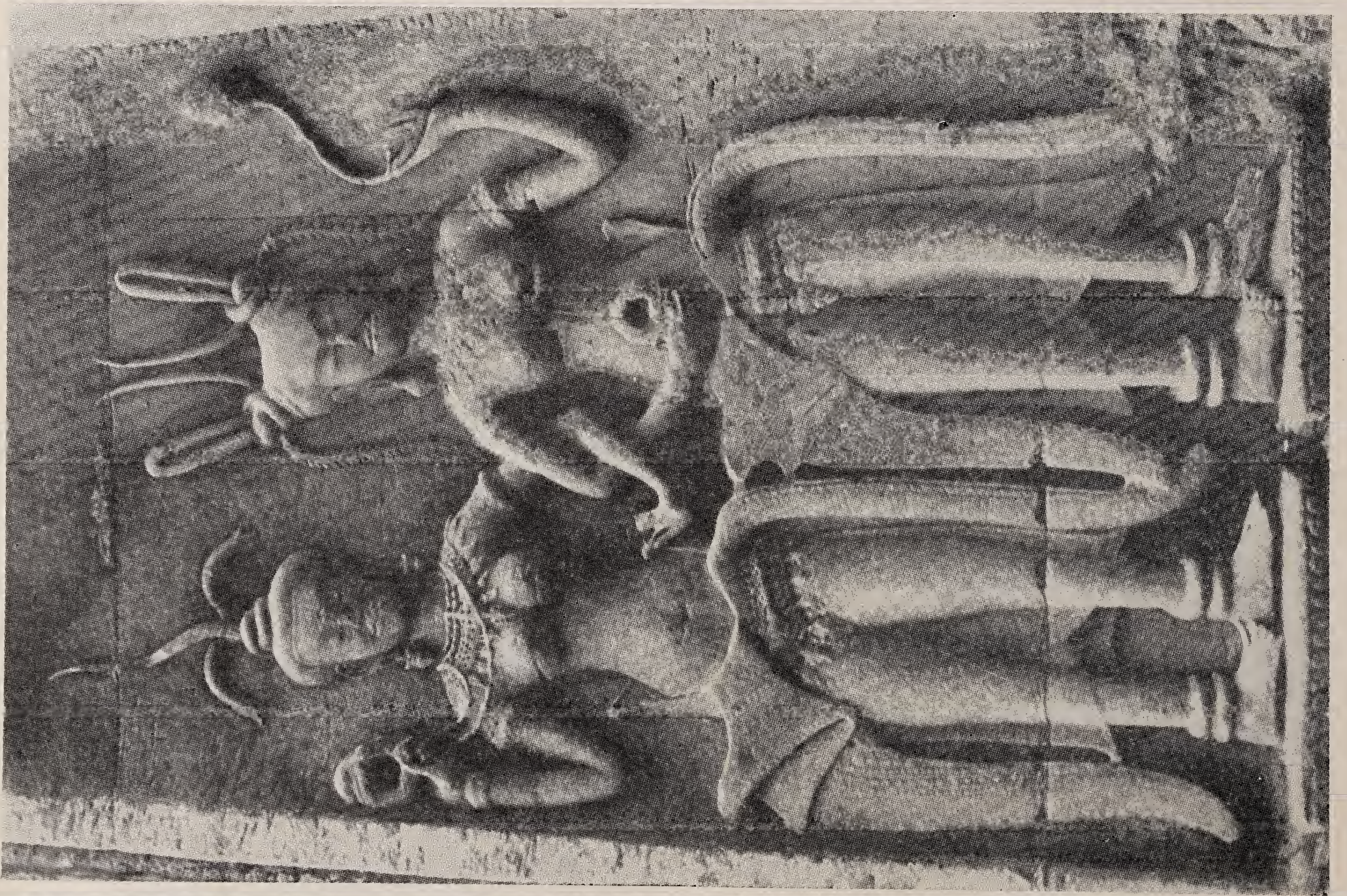


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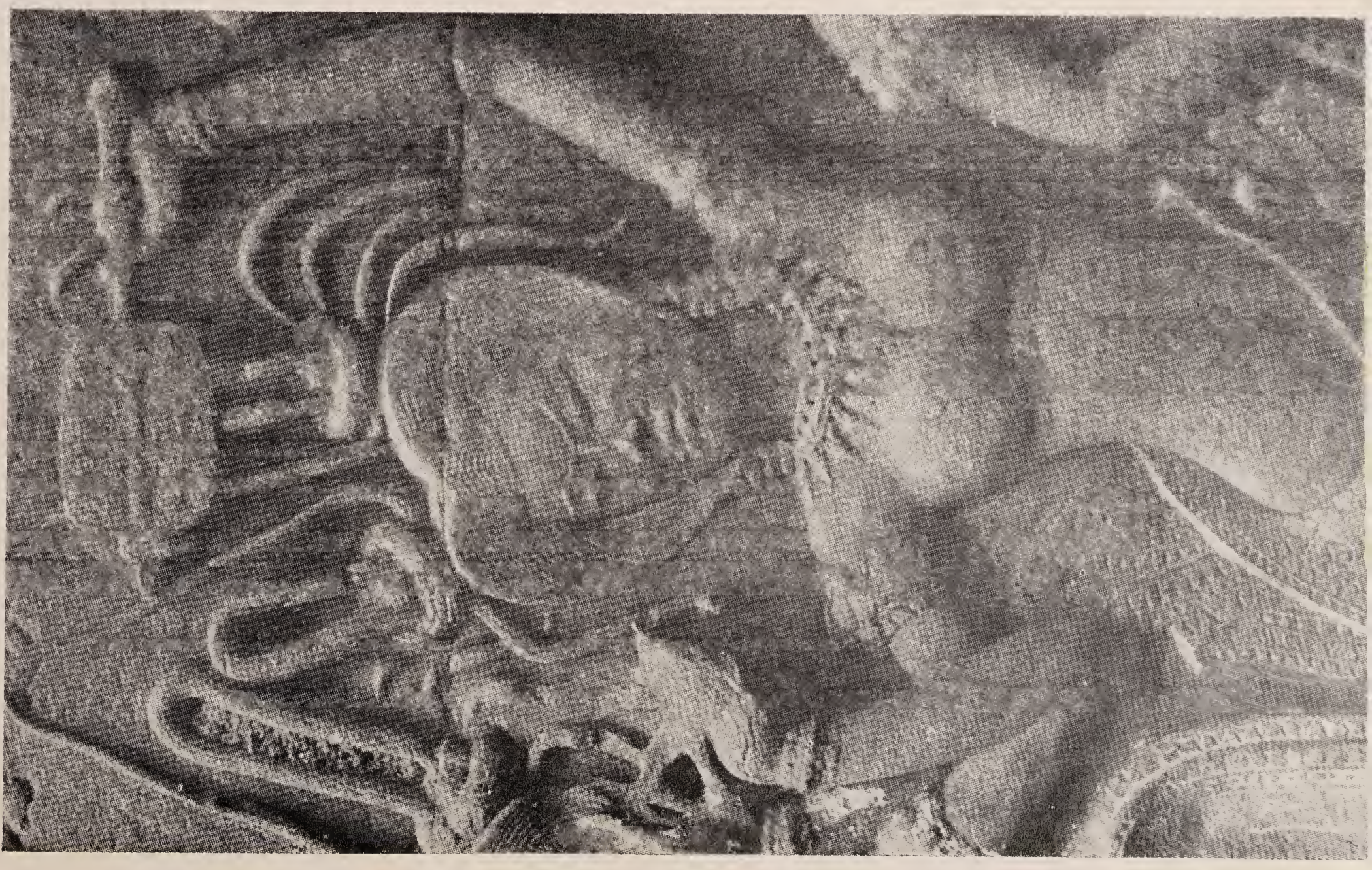
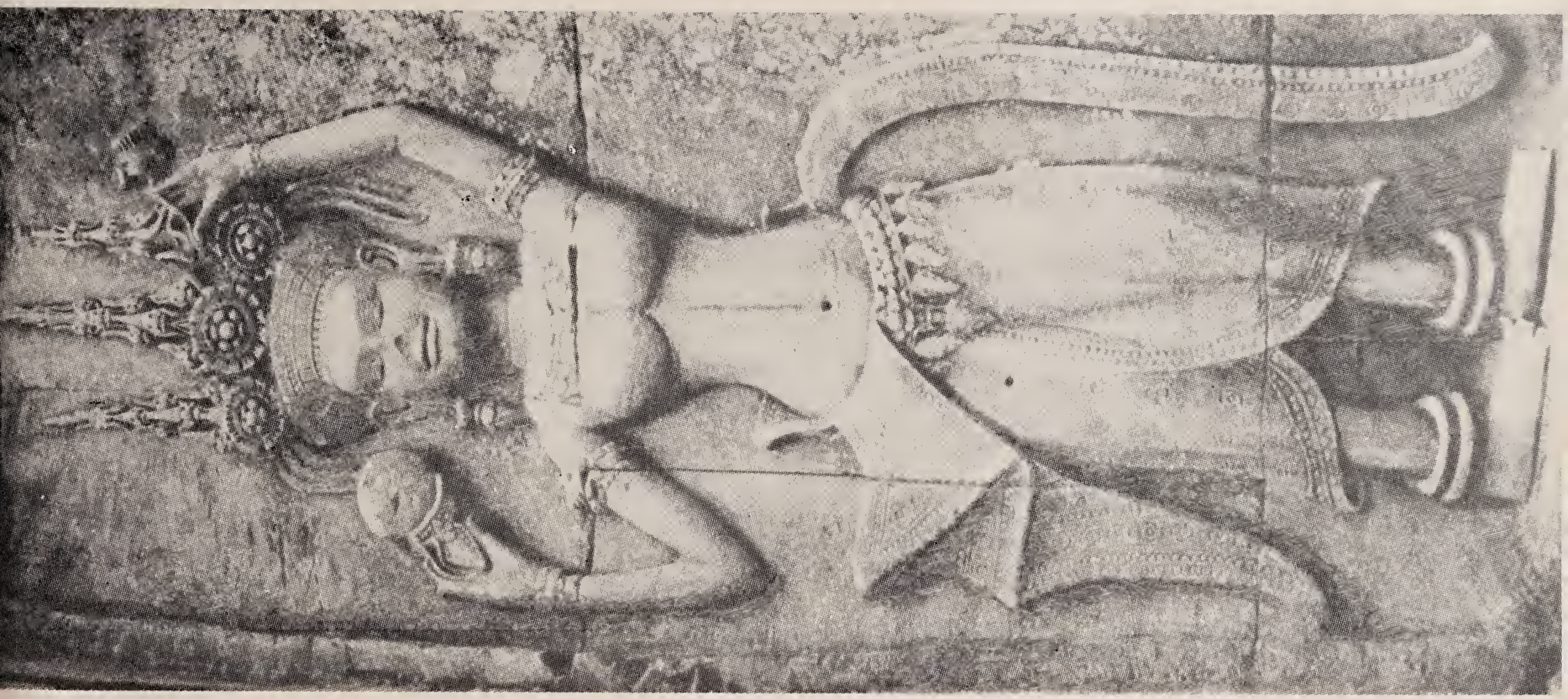


























Born at Allahabad on 21st September 1927, Shri K.M. Srivastava obtained the degree of Master of Arts from the same University in the year 1949. During the course of his thirtythree years of service with the Archaeological Survey of India he conducted excavations at many important sites. It was only on account of his experience in the field that in 1962 he was deputed to Nubia, in United Arab Republic, to salvage the antiquities from the submergence area of the reservoir that was to be formed as a result of the construction of the Aswan Dam.

The greatest achievement which stands to the credit of Shri Srivastava is the epoch-making work of the identification of the lost town of Kapilavastu, where Lord Buddha spent the first twentynine years of his life before he renounced the world. He received the highest honour from the Government of Sri Lanka where he was invited in 1978 with the corporeal relics of Lord Buddha which were discovered in the stupa at Piprahwa in district Basti of Uttar Pradesh.

Shri Srivastava led in 1982 a nine-member team of archaeologists to Kampuchea to prepare a project report on the preservation of the temple of Angkor Wat, the largest in the world. Being one of the front ranking and well-known field archaeologists in the country, he was invited in 1984 by the Government of Bahrain to conduct excavation as a leader of a thirteen-member team. The most outstanding find of the excavation was a seal with Indus script establishing thereby the trade relationship between the two countries in ancient days.

Besides a large number of articles in well-known journals, and reports on excavations, Shri Srivastava has published several books like *Community Movements in Proto-historic India*, *New Era of Indian Archaeology*, *Buddha's Relics from Kapilavastu* and *Discovery of Kapilavastu*. Having retired from the Archaeological Survey of India as Director (Expeditions Abroad), he is now a Senior Research Fellow of the Indian Council of Historical Research.

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